EXHIBIT 7.1

HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN, NOVEMBER 2008

Hollister Urban Area Water and Wastewater Master Plan

City of Hollister, San Benito County, San Benito County Water District, and Sunnyslope County Water District

November 2008

Prepared under the responsible charge of

Robert H. Ellis
C24676

2121 N. California Blvd., Suite 475
Walnut Creek, CA 95497

Contents

Executive Summary ES-1
ES-1 Background ES-1
ES-1.1 Memorandum of Understanding ES-1
ES-1.2 Problem Definition ES-3
ES-1.3 Objective ES-3
ES-1.4 Stakeholder Involvement ES-4
ES-1.5 Existing Water Facilities ES-4
ES-1.6 Existing Wastewater Facilities ES-4
ES-2 Alternatives Development and Evaluation ES-5
ES-2.1 Planning Period ES-5
ES-2.2 Projected Water Demands ES-6
ES-2.3 Projected Wastewater Flows ES-7
ES-2.4 Description and Screening of Alternative Concepts ES-7
ES-2.5 Formulation of Alternatives ES-8
ES-2.6 Evaluation of Alternatives ES-8
ES-3 Recommended Program ES-8
ES-3.1 Facilities ES-9
ES-3.2 Phasing ES-11
ES-3.3 Estimated Costs ES-14
ES-3.4 Benefit and Cost Allocation ES-15
ES-3.5 Recommended Implementation Schedule and Next Steps ES-17

1.0 Introduction 1-1
1.1 Background 1-1
1.1.1 Existing Conditions 1-1
1.1.2 Previous and Ongoing Studies 1-3
1.1.3 Memorandum of Understanding 1-4
1.2 Problem Definition 1-5
1.2.1 Quality of Drinking Water and Recycled Water 1-6
1.2.2 Reliability of Water Supply 1-7
1.2.3 Coordination of Water and Wastewater System Improvements 1-8
1.2.4 Regional Balance of Water Resources Including High Groundwater Areas 1-8
1.3 Objective 1-9
1.4 Scope of Work 1-9
1.5 Stakeholder Involvement 1-10
1.5.1 Governance Committee 1-11
1.5.2 Management Committee 1-11
1.5.3 Public 1-11
1.6 Report Organization 1-12
1.7 Project Team 1-13
1.8 Acknowledgements 1-13
1.9 Abbreviations 1-13

2.0 Existing Water Facilities 2-1
2.1 Regional Water Supplies 2-1
2.1.1 Groundwater 2-1
2.1.2 Local Surface Water Supplies 2-6
2.1.3 Imported Surface Water 2-7
2.2 City of Hollister Water Facilities 2-12
2.2.1 Groundwater Wells 2-13
2.2.2 Lessalt Water Treatment Plant 2-16
2.2.3 Storage Reservoirs 2-18

2.2.4 Pressure Reducing Pressure Sustaining Stations 2-19
2.2.5 Transmission and Distribution 2-19
2.3 Sunnyslope County Water District Water Facilities 2-21
2.3.1 Groundwater Wells 2-21
2.3.2 Storage Reservoirs 2-21
2.3.3 Pressure Reducing Pressure Sustaining Stations 2-22
2.4 Required Water System Improvements 2-22
2.4.1 Existing Storage Deficiency 2-22
2.4.2 Regulatory Requirements 2-23

3.0 Existing Wastewater Facilities 3-1
3.1 City of Hollister Wastewater Facilities 3-1
3.1.1 Collection System 3-4
3.1.2 City of Hollister Domestic Wastewater Treatment Plant 3-4
3.1.3 Industrial Wastewater Treatment Plant 3-8
3.2 Sunnyslope County Water District Wastewater Facilities 3-10
3.2.1 Collection System 3-10
3.2.2 Ridgemark Area Wastewater Treatment and Disposal 3-11
3.3 Cielo Vista Estates Wastewater Treatment Plant 3-14
3.4 Regulatory History 3-14
3.5 Required Wastewater System Improvements 3-16
3.5.1 City of Hollister Domestic Wastewater Treatment Plant Regulatory Requirements 3-16
3.5.2 City of Hollister Industrial Wastewater Treatment Plant Regulatory Requirements 3-17
3.5.3 SSCWD (Ridgemark WWTPs) Regulatory Requirements 3-17
3.5.4 San Benito County Cielo Vista Estates WWTP Regulatory Requirement 3-18
3.5.5 Collection System Regulatory Requirements 3-18

4.0 Basis of Planning 4-1
4.1 Study Area 4-1
4.2 Planning Period 4-3
4.3 Land Use 4-4
4.3.1 City of Hollister General Plan 4-4
4.3.2 San Benito County Zoning Ordinance No. 784 4-4
4.3.3 San Benito County Zoning Change 04-141 4-6
4.4 Population 4-6
4.5 Projected Water Demands 4-7
4.6 Projected Wastewater Flows 4-11
4.7 Groundwater Management Plan 4-11
4.7.1 Problem Statements 4-11
4.7.2 New Projects and Activities 4-13
4.7.3 Water Quality Objectives and Criteria 4-14
4.8 Urban Water Management Plan Update 4-14
4.9 Long-Term Wastewater Management Plans 4-14
4.10 Recycled Water Feasibility Study 4-15
4.11 Pajaro River Watershed Integrated Water Management Plan 4-18
4.12 Memorandum of Understanding 4-19
4.12.1 Principles 4-20
4.12.2 Objectives and Assumptions 4-21
4.13 Basis of Cost Estimates 4-24

5.0 Development of Alternatives 5-1
5.1 Integrated Water Resources Approach 5-1
5.2 Initial Feasibility Studies 5-1
5.2.1 Demineralization Alternatives Analysis 5-1
5.2.2 Comparison of Demineralization and Centralized Lime Softening 5-2

5.3 Other Programs 5-3
5.3.1 Groundwater Management Plan Update 5-3
5.3.2 Long-term Wastewater Management Plan 5-4
5.3.3 Recycled Water Feasibility Study Update 5-5
5.3.4 Water Conservation 5-6
5.3.5 Water Softener Ordinance 5-6
5.3.6 Salinity Education 5-7
5.3.7 Dual Distribution Systems 5-7
5.3.8 Special Study Areas 5-7
5.4 Alternatives Analysis Process 5-10
5.4.1 Evaluation Process 5-11
5.4.2 Project Objectives 5-11
5.4.3 Preliminary Screening Criteria 5-12
5.5 Description and Screening of Alternative Concepts 5-13
5.5.1 Base Case – Continuation of Current Programs 5-13
5.5.2 Concept 1 – Increase Use of Imported Surface Water 5-17
5.5.3 Concept 2 – Utilize Local Surface Supplies 5-20
5.5.4 Concept 3 – Demineralization of Urban Wells 5-25
5.5.5 Concept 4 – Utilization of Water from High Groundwater Basins 5-26
5.6 Preliminary Screening Results 5-29

6.0 Evaluation of Alternatives 6-1
6.1 Formulation of Alternatives 6-1
6.1.1 Alternatives Resulting from Screening Process 6-1
6.1.2 Alternative 1A. Exchange Agricultural CVP Supply with Recycled Water 6-1
6.1.3 Alternative 1B. Reallocate Unused M&I CVP Entitlements 6-3
6.1.4 Alternative 2A. Capture Intermittent Creek Flows 6-6
6.1.5 Alternative 3A. Demineralization to Meet MOU 6-11
6.1.6 Alternative 3B. Phased Demineralization of Urban Wells 6-11
6.2 Evaluation Criteria 6-17
6.2.1 Criterion 1: Minimize Costs 6-17
6.2.2 Criterion 2: Meet Drinking Water Quality Goals 6-18
6.2.3 Criterion 3: Meet Recycled Water Quality Goals 6-18
6.2.4 Criterion 4: Balance Water Supply for Enhanced Reliability 6-18
6.2.5 Criterion 5: Maximize Availability of Supplies 6-19
6.2.6 Criterion 6: Maximize Opportunities for Regional Solutions 6-19
6.2.7 Criterion 7: Minimize Environmental Impacts 6-20
6.2.8 Criterion 8: Provide Flexibility for Implementation 6-20
6.2.9 Criterion 9: Minimize Risk of Implementation 6-21
6.3 Evaluation of Alternatives 6-21
6.3.1 Economic Analysis 6-23
6.3.2 Non-Economic Analysis 6-25
6.4 Preferred Alternative 6-29

7.0 Water Master Plan 7-1
7.1 Water Supply 7-1
7.1.1 Existing Urban Groundwater 7-1
7.1.2 Imported Surface Water 7-1
7.1.3 Preliminary Operational Plan 7-2
7.2 Water Production Requirements 7-2
7.3 Water Treatment 7-5
7.3.1 Lessalt Water Treatment Plant 7-5
7.3.2 Groundwater Demineralization 7-5
7.3.3 Groundwater Softening 7-6
7.4 Water Distribution System Criteria 7-6
7.4.1 Pipeline Criteria 7-6

7.4.2 System Pressure Criteria 7-7
7.4.3 Storage Volume Criteria 7-7
7.4.4 Fire Suppression Criteria 7-8
7.4.5 Pump Station Criteria 7-9
7.5 Water System Deficiencies 7-9
7.5.1 Production Capacity and Booster Pumping 7-9
7.5.2 Storage 7-11
7.5.3 Distribution Piping 7-15
7.6 Recommended Water System Improvements 7-15

8.0 Wastewater Master Plan 8-1
8.1 Treatment Plant Improvements 8-1
8.1.1 City of Hollister Treatment Improvements 8-2
8.1.2 Sunnyslope County Water District Treatment Improvements 8-5
8.1.3 Cielo Vista Estates Treatment Improvements 8-6
8.2 Wastewater Disposal Improvements 8-7
8.2.1 Phase 1 Interim Disposal Facilities 8-7
8.2.2 Phase 2 Long-Term Disposal Facilities 8-9
8.2.3 SSCWD Disposal Facilities 8-10
8.3 Wastewater Collection System Improvements 8-11
8.3.1 City of Hollister Collection System Improvements 8-11
8.3.2 SSCWD Collection System Improvements 8-16
8.3.3 Cielo Vista Estates Collection System Improvements 8-16
8.3.4 Septic Tank Service Areas 8-16
8.4 Recommended Wastewater System Improvements 8-17

9.0 Implementation Program 9-1
9.1 Integrated Water and Wastewater Plan 9-1
9.1.1 Description of Integrated Plan 9-1
9.1.2 Compliance with MOU 9-2
9.1.3 Benefits of Integrated Plan 9-4
9.1.4 Estimated Costs 9-5
9.1.5 Recommended Phasing 9-6
9.2 Benefit and Cost Allocation 9-9
9.2.1 Benefit and Cost Allocation Methods 9-9
9.2.2 Recommended Framework for Benefit and Cost Allocation 9-10
9.2.3 Benefit Valuation and Assignment 9-12
9.2.4 Allocation of Sunk Costs 9-14
9.2.5 Summary 9-14
9.3 Institutional Arrangements 9-14
9.3.1 Roles and Responsibilities 9-15
9.3.2 Framework for Implementation 9-15
9.3.3 Amendment to MOU 9-17
9.4 Engineering 9-17
9.5 Environmental Compliance 9-18
9.6 Permitting 9-18
9.7 Coordination with Ongoing Projects and Programs 9-18
9.8 Stakeholder Outreach 9-19
9.9 Financing 9-19
9.9.1 Estimated Program Costs 9-19
9.9.2 Internal Funding Opportunities 9-19
9.9.3 State / Federal Funding Opportunities 9-20
9.10 Use of Master Plan Processes and Tools 9-21
9.11 Recommended Implementation Schedule and Next Steps 9-22

Figures

Figure ES- 1: Study Area and Land Use Planning Jurisdictions ES-2
Figure ES- 2: Alternative Development and Evaluation Process ES-5
Figure ES- 3: Existing and Projected Water Demands ES-6
Figure ES- 4: Major Actions and Benefits of Integrated Water Resources Plan ES-10
Figure ES- 5: Recommended Program ES-12
Figure ES- 6: Framework for Benefit and Cost Allocation ES-16
Figure ES- 7: Implementation Program Phasing ES-18
Figure ES- 8: Implementation Schedule through 2015 ..... ES-19
Figure 1-1: Location Map 1-2
Figure 1-2: Hollister Urban Area Water and Wastewater Master Plan Organization Chart 1-5
Figure 2-1: Existing Water Supplies 2-3
Figure 2-2: Zone 6 Boundary 2-4
Figure 2-3: Hydrographs of Average Groundwater Elevation in Subbasins During Water Years 1977 to 2005 2-5
Figure 2-4: Exceedance Probability of Simulated CVP Deliveries to the San Benito County Water District 2-9
Figure 2-5: Updated Exceedance Probability of Simulated CVP Deliveries to San Benito County Water District 2-11
Figure 2-6: Water Service Areas 2-14
Figure 2-7: City of Hollister and SSCWD Major Water Facilities 2-15
Figure 2-8: Lessalt WTP Existing Process 2-16
Figure 2-9: Lessalt WTP Proposed Improvements 2-18
Figure 2-10: Water Distribution System Hydraulic Profile 2-20
Figure 3-1: Wastewater Treatment Plants Within the Hollister Urban Area 3-2
Figure 3-2: Wastewater Service Areas 3-3
Figure 3-3: Existing DWTP Process Schematic 3-6
Figure 3-4: SSCWD RM I Process Flow Schematic 3-11
Figure 3-5: SSCWD RM II Process Flow Schematic 3-13
Figure 4-1: Study Area 4-2
Figure 4-2: Land Use Jurisdictions 4-5
Figure 4-3: Gilroy-Hollister Groundwater Basin 4-12
Figure 4-4: Pajaro River Watershed 4-19
Figure 5-1: Alternative Development and Evaluation Process 5-12
Figure 5-2: Existing Projects and Activities 5-14
Figure 6-1: Alternative 1A. Agricultural CVP Reallocation 6-4
Figure 6-2: Alternative 1A. Supplies Proposed to Meet Monthly Demands 6-5
Figure 6-3: Alternative 1B. Reallocation of Unused M&I Entitlements 6-7
Figure 6-4: Alternative 1B. Supplies Proposed to Meet Monthly Demands 6-8
Figure 6-5: Alternative 2A. Local Surface Water Supplies 6-9
Figure 6-6: Alternative 2A. Supplies Proposed to Meet Monthly Demands 6-10
Figure 6-7: Alternative 3A. Demineralization to Meet MOU Goals 6-13
Figure 6-8: Alternative 3A. Supplies Proposed to Meet Monthly Demands 6-14
Figure 6-9: Alternative 3B. Phased Demineralization of Urban Wells 6-15
Figure 6-10: Alternative 3B. Supplies Proposed to Meet Monthly Demands. 6-16
Figure 6-11: Blended Hardness Concentration, Drinking Water for 2023 Conditions 6-29
Figure 6-12: Blended TDS Concentration, Recycled Water for 2023 Conditions 6-30
Figure 7-1: Projected Water Production Requirements and Sources of Supply 7-4
Figure 8-1: Projected Wastewater Flows and Treatment Capacity Requirements 8-3
Figure 8-2: Upgraded DWTP Process Schematic 8-4
Figure 8-3: Ridgemark Area Wastewater Alternative Process Schematic 8-6

Figure 8-4: Recommended Phase 2A Recycled Water Transmission System 8-10
Figure 8-5: Future Development in SSCWD Wastewater Service Area 8-17
Figure 9-1: Recommended Program 9-3
Figure 9-2. Major Actions and Benefits of Integrated Water Resources Plan 9-5
Figure 9-3. Capital Costs for Recommended Program 9-6
Figure 9-4: Implementation Program Phasing 9-8
Figure 9-5: Framework for Cost Allocation 9-10
Figure 9-6: Example Institutional Framework for Recycled Water Implementation 9-16
Figure 9-7: Implementation Schedule through 2015 9-22

Photographs

Photograph 1-1: San Benito County Row Crop Irrigation 1-3
Photograph 1-2: High Mineral Content of Groundwater Impacts Residential Customers 1-7
Photograph 2-1: Lessalt Water Treatment Plant 2-16
Photograph 2-2: Fairview Road Tanks 2-19
Photograph 3-1: Aeration at DWTP Pond 3-6
Photograph 3-2: Disposal Pond 6 at RM I Facility 3-12
Photograph 3-3: RM II WWTP Treatment Ponds 3-13

Tables

Table ES- 1: Integrated Water and Wastewater Master Plan ES-11
Table ES- 2: Summary of Capital Improvement Program ES-14
Table ES- 3: Summary of Specific and Joint Costs ES-15
Table ES- 4: Preliminary Benefit Assignment ES-17
Table 2-1: Estimated Salt Balance 2-6
Table 2-2: City of Hollister Wells 2-13
Table 2-3: City of Hollister Storage Reservoirs 2-18
Table 2-4: City of Hollister Pressure Reducing Pressure Sustaining Stations 2-19
Table 2-5: Lengths of Water Mains by Diameter (City of Hollister and SSCWD) 2-20
Table 2-6: Lengths of Water Mains by Pressure Zone (City of Hollister and SSCWD) 2-20
Table 2-7: SSCWD Wells 2-21
Table 2-8: SSCWD Storage Reservoirs 2-22
Table 2-9: SSCWD Pressure Reducing Pressure Sustaining Stations 2-22
Table 2-10: Summary of Applicable Regulations and Compliance Status 2-25
Table 3-1: Current and Projected Wastewater Flows 3-4
Table 3-2: Anticipated DWTP Wastewater Regulatory Limits and Existing Concentrations 3-16
Table 3-3: IWTP Permit Requirements and Current Concentrations 3-17
Table 3-4: SSCWD Permit Requirements and Current Concentrations 3-17
Table 3-5: Waste Discharge Requirement Deadlines for the City, SSCWD, and Cielo Vista Estates 3-19
Table 4-1: Special Study Areas 4-3
Table 4-2: City of Hollister Population, Housing, and Employment 4-7
Table 4-3: Existing and Projected Water Demand 4-9
Table 4-4: Summary of Projected Wastewater Flows 4-11
Table 5-1: Typical Satellite Management Characteristics 5-10
Table 5-2: Preliminary Screening of Alternative Concepts 5-29
Table 6-1: Alternative Facility Requirements for 2023 6-2
Table 6-2: Summary of Alternatives Analysis 6-22

Table 6-3: Net Present Worth Cost Comparison for All Alternative Elements 6-24
Table 7-1: Existing and Projected Annual Water Requirements and Sources of Supply (Acre-Feet/Year) 7-2
Table 7-2: Evaluation of Full System Source Adequacy 7-4
Table 7-3: Evaluation of High Pressure Zone Source Adequacy 7-9
Table 7-4: Evaluation of High and Middle Pressure Zone Source Adequacy 7-10
Table 7-5: Evaluation of Full System Storage Adequacy 7-12
Table 7-6: Evaluation of High Pressure Zone Storage Adequacy 7-13
Table 7-7: Evaluation of High and Middle Pressure Zones Storage Adequacy 7-13
Table 7-8: Recommended Storage Improvement Schedule 7-14
Table 8-1: City of Hollister DWTP Effluent Disposal Water Balance Summary 8-7
Table 9-1: Integrated Water and Wastewater Master Plan 9-2
Table 9-2: Summary Comparison of Cost Allocation Methods 9-9
Table 9-3: Specific and Joint Costs 9-11
Table 9-4: Example Application of Share of Use Methodology for Allocation of Joint Costs 9-12
Table 9-5: Benefit Valuation Methodology for Major Program Benefits 9-13
Table 9-6: Preliminary Benefit Assignment 9-13
Table 9-7: Estimated Capital Costs 9-20

Executive Summary

The Hollister Urban Area Water and Wastewater Master Plan (Master Plan) provides a comprehensive plan and implementation program to meet the existing and future water resources needs of the Hollister Urban Area. This Master Plan was initiated through a Memorandum of Understanding (MOU) developed in 2004 by the City of Hollister, San Benito County, and the San Benito County Water District (SBCWD), and which was later amended to include Sunnyslope County Water District (SSCWD), hereafter referred to as the MOU Parties. This executive summary provides an overview of the background, alternatives development and evaluation, and the recommended program described in this Master Plan.

ES-1 Background

The Hollister Urban Area is located in San Benito County, California, approximately 50 miles southeast of the City of San Jose and 40 miles east of Monterey Bay. The Hollister Urban Area includes the City of Hollister and adjacent unincorporated areas of San Benito County designated for urban development as shown in Figure ES- 1. This Master Plan has been developed to identify water and wastewater service to development defined by the City of Hollister and San Benito County General Plans.

ES-1.1 Memorandum of Understanding

The goals of the Master Plan are based upon the principles and objectives defined in the MOU. The following goals were used in developing this Master Plan:

- Improve municipal, industrial, and recycled water quality
- Increase the reliability of the water supply
- Coordinate infrastructure improvements for water and wastewater systems
- Implement goals of the Groundwater Management Plan
- Integrate the Long-term Wastewater Management Program (LTWMP)
- Support economic growth and development consistent with the City of Hollister and San Benito County General Plans and Policies
- Consider regional issues and solutions

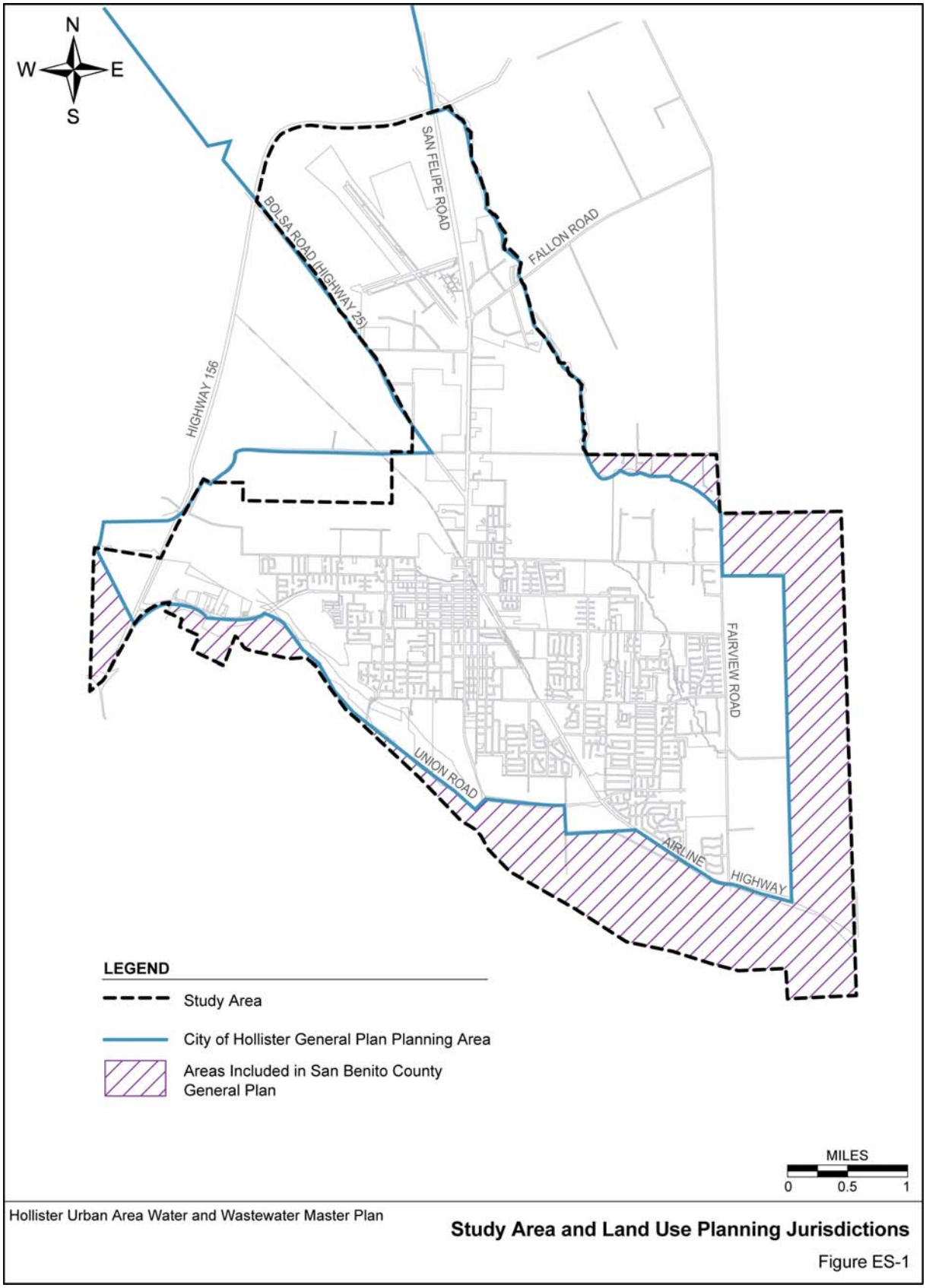


Figure ES-1: Study Area and Land Use Planning Jurisdictions

ES-1.2 Problem Definition

Northern San Benito County has a diverse and complex water supply system composed of groundwater, local rivers and creeks, imported surface water, and significant opportunities for recycled water use. Although treated drinking water meets all primary federal and state drinking water regulations, hardness and minerals in the water supply need to be reduced. The high mineral content of drinking water creates taste and odor issues for consumers, and additional cost for soap and detergent, more frequent replacement of hot water heaters, and installation and operation of home softening units. The high level of minerals in the treated wastewater limits both disposal and recycling options due to adverse impacts to crops and groundwater. The reliability of imported surface water has declined significantly and the sustainability of local supplies requires review to ensure long-term economic growth of the Hollister Urban Area.

The water resource issues that must be addressed in the Hollister Urban Area include the following:

- Quality of drinking water and recycled water
- Reliability of water supply
- Coordination of water and wastewater system improvements
- Regional balance of water resources including high groundwater areas

ES-1.3 Objective

The objective of this Master Plan is to provide a long term vision, through 2023, of water and wastewater management actions and infrastructure improvements for management of those resources for the Hollister Urban Area. As described in the MOU, this Master Plan provides a comprehensive plan describing (1) capacity and estimated cost of physical facilities, and (2) an implementation program including institutional arrangements, engineering, CEQA compliance, permitting, financing, coordination with ongoing projects and programs, stakeholder outreach, and scheduling.

ES-1.4 Stakeholder Involvement

The development of a comprehensive and responsive Master Plan involved extensive communications with key stakeholders. There are three primary groups of stakeholders involved in this Master Plan project: the agencies represented by the Governance Committee, the Management Committee, and the public. Five public workshops were held during the preparation of this Master Plan to present study findings and obtain input from interested parties.

ES-1.5 Existing Water Facilities

The two major water systems are operated by the City of Hollister and SSCWD. Although the two agencies maintain specific service areas, their water supply and distribution systems are interconnected and can exchange water as necessary to satisfy customer demand. Within the Hollister Urban Area there are also numerous small and community water systems.

Water supplies for the Hollister Urban Area are provided by groundwater and imported Central Valley Project (CVP) surface water supplies. The SBCWD has jurisdiction throughout the County for surface water management and groundwater replenishment. The San Felipe Distribution System is operated by the SBCWD and delivers imported water for groundwater recharge, agricultural irrigation, and domestic and municipal supply.

Facilities for water supply, treatment, and distribution include wells, the Lessalt Water Treatment Plant, pipelines, pump stations, and treated water storage reservoirs. The existing water facilities are shown in detail on Exhibit II at the end of this report.

ES-1.6 Existing Wastewater Facilities

Five wastewater treatment plants treat the domestic, commercial, and industrial wastewater flows generated within the Hollister Urban Area. The existing wastewater facilities are owned by three separate entities, the City of Hollister, SSCWD, and San Benito County (Cielo Vista Estates Wastewater Treatment Plant).

The wastewater facilities also include collection system pipelines, interceptors, and lift stations. Currently, wastewater effluent disposal is by evaporation and percolation. The existing wastewater facilities are shown on Exhibit III at the end of this report.

ES-2 Alternatives Development and Evaluation

A comprehensive planning process was utilized to develop and evaluate a wide range of alternatives for integrated water resources management as illustrated in Figure ES-2. The planning process involved establishing the basis of planning, development of and initial screening of concepts, and final evaluation of alternative plans.

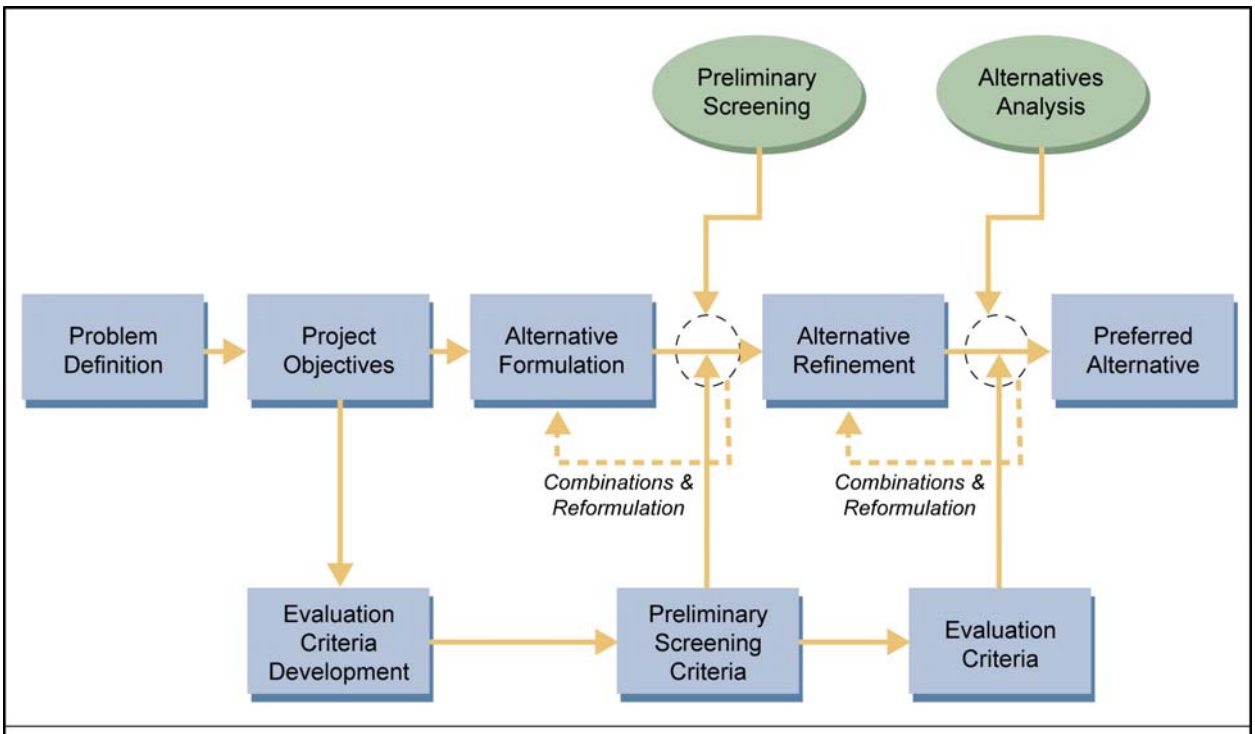


Figure ES-2. **Alternative Development and Evaluation Process**

Figure ES- 2: Alternative Development and Evaluation Process

ES-2.1 Planning Period

The planning period for this study extends 18 years, from 2005 to 2023. The initial year of the planning period was selected to provide a common baseline date for existing data related to land use, water supply and demand, and wastewater flows. The final year of the planning period coincides with the planning horizon of the adopted General Plan for the City of Hollister.

ES-2.2 Projected Water Demands

Demand projections are required to identify Study Area water supply needs for the planning horizon. Water demand projections were based on 2005 water demands data and patterns, planned land uses, estimated system losses, land use unit demands, and anticipated levels of water conservation. Use of General Plan land uses within the Study Area is a critical aspect for projecting future water demands because the land uses reflecting the City and County's plans and policies of the two General Plans have been through rigorous public review and environmental compliance. Water demands for the Study Area are currently 7,965 acre-feet (ac-ft). Annual water demands are projected in increase to 11,840 ac-ft by 2023 and approximately 20,150 ac-ft at buildout as shown in Figure ES-3.

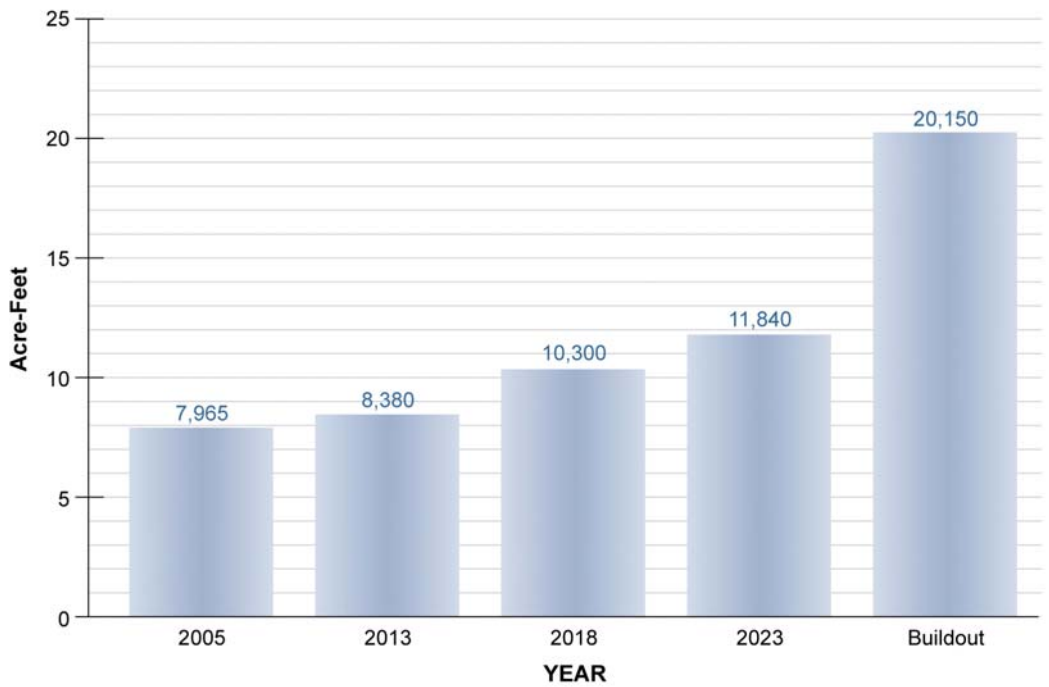


Figure ES-3. **Existing and Projected Water Demands**

Figure ES- 3: Existing and Projected Water Demands

ES-2.3 Projected Wastewater Flows

Existing and projected wastewater flows were developed as part of the Long-term Wastewater Management Program (Draft, March 2007). Existing average dry weather flows (ADWF) are approximately 3.0 million gallons per day (mgd) and are projected to increase to 4.5 mgd by 2023. The existing ADWF includes wastewater from the City (2.7 mgd) and the SSCWD (0.3 mgd). The projected ADWF for 2023 includes 4.04 mgd from the City, to be treated at the new Domestic Wastewater Treatment Plant (DWTP), and 0.46 mgd from SSCWD, to be treated at the Ridgemark Wastewater Treatment Plant.

ES-2.4 Description and Screening of Alternative Concepts

Four overall concepts were developed to meet the goals of this Master Plan. The four concepts were developed through the evaluation of previous and ongoing projects; initial feasibility evaluations of major components (i.e., groundwater demineralization and softening); and workshops conducted with the Management Committee, the Governance Committee, and the public.

The current urban water supply does not meet secondary drinking water standards for salinity leading to poor taste and high consumer costs. The high salinity also limits the options available for recycling water following wastewater treatment. The ability to use recycled water would provide an additional source of water and improve the overall reliability of water supply. Addressing the water supply and water quality issues provides direct benefits to consumers and allows for implementation of wastewater treatment producing valuable recycled water. Therefore, the four concepts were focused on the water supply and water quality aspects of the integrated water resources plan as follows:

- Concept 1 – Increase Use of Imported Surface Water
- Concept 2 – Utilize Local Surface Water Supplies
- Concept 3 – Demineralization of Urban Wells
- Concept 4 – Utilization of Water from High Groundwater Basins

ES-2.5 Formulation of Alternatives

The initial screening of overall concepts resulted in five detailed alternatives for further analysis. The five alternatives are listed below:

- Alternative 1A – Exchange agricultural CVP supply with recycled water
- Alternative 1B – Reallocate unused CVP M&I entitlements
- Alternative 2A – Capture intermittent creek flows
- Alternative 3A – Demineralization to meet MOU goals
- Alternative 3B – Phased demineralization of urban wells

ES-2.6 Evaluation of Alternatives

Evaluation criteria were developed based upon the principles and objectives defined in the MOU and through workshops with the Governance Committee, Management Committee, and the public. The evaluation criteria established through this process are as follows:

- Minimize Costs
- Meet Drinking Water Quality Goals
- Meet Recycled Water Quality Goals
- Balance Water Supply for Enhanced Reliability
- Maximize Availability of Supplies
- Maximize Opportunities for Regional Solutions
- Minimize Environmental Impacts
- Provide Flexibility for Phased Implementation
- Minimize Risk of Implementation

ES-3 Recommended Program

Based upon the evaluation of alternatives, groundwater demineralization, Alternatives 3A and 3B, was determined to best meet the evaluation criteria. Alternative 3B is essentially a subset of Alternative 3A; thus, Alternative 3B – Phased Demineralization of Urban Wells was

determined to be a logical first step toward meeting MOU goals and is the recommended plan. Some of the major benefits of the recommended program include the following:

- Providing a reliable water supply for average, dry, and multiple dry year events without significantly impacting long-term groundwater levels within the subbasins.
- Providing a reliable water supply for agricultural users.
- Providing improved drinking water quality and consumer cost savings.
- Reducing the annual salt load entering the groundwater basin.
- Improved effluent quality facilitating the implementation of recycled water use in the Wright Road / McCloskey Road corridor.
- Reducing percolation to groundwater basin and related contributions to localized high groundwater conditions.

The major actions and benefits resulting from the integrated water resources plan are summarized in Figure ES-4.

ES-3.1 Facilities

The integrated water and wastewater plan is summarized in Table ES-1 and Figure ES-5. The integrated plan includes common elements for program solutions and water, wastewater, and recycled water facilities. The urban water supply plan is a phased solution which includes an initial phase of demineralization of select urban wells, continued use of imported CVP supplies treated at the Lessalt WTP, and groundwater softening of several SSCWD wells.

The integrated plan provides the facilities required to meet the water and wastewater needs of the Hollister Urban Area through the year 2023. However, the plan also provides flexibility to respond to changing conditions and a framework to meet the water and wastewater needs at buildout conditions. For example, as shown in Table ES-1, there is a menu of long-term water supplies and regional options. This menu consists of alternatives developed and analyzed in this Master Plan.

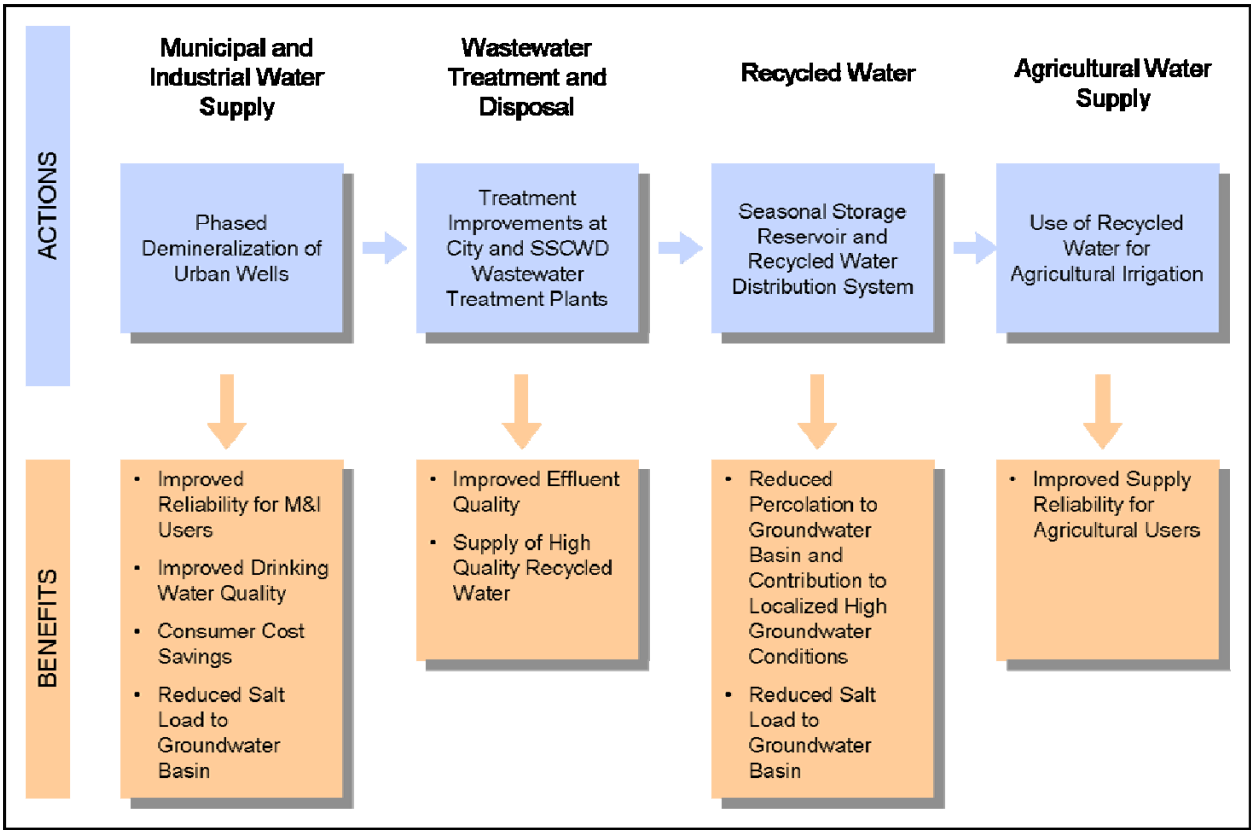


Figure ES- 4: Major Actions and Benefits of Integrated Water Resources Plan

Between the year 2023 and Buildout, an additional 8,300 ac-ft of water will be required on an annual basis. To meet this long-term need, the menu provides a starting point for pursuing the required water supplies. Due to the time required for developing major water supply projects, it is recommended that all of these potential sources of supply be investigated in parallel to provide the most flexibility for future development.

The major facilities required for the preferred plan are shown in Figure ES-5. In an initial phase, Phase 1, new demineralization water treatment facilities would be provided for three existing City wells and one SSCWD. Later, if required, additional demineralization facilities would be added at other urban wells. In addition to demineralization, SSCWD would also construct a groundwater softening plant. Wastewater treatment would be provided by the new City of Hollister Domestic Wastewater Treatment Plant and the upgraded SSCWD Ridgemark Wastewater Treatment Plant. Disposal of treated wastewater from the City's plant would be

Table ES- 1: Integrated Water and Wastewater Master Plan

2023 Master Plan		Long Term Water Supplies and Regional Options	
Common Elements	Urban Water Supply Plan		
Program Solutions Water Conservation Softener Ordinance Salinity Education Dual Distribution Systems in New Developments Base Case Water, Wastewater, and Recycled Water Facilities Lessalt Upgrade WWTP Project Phase 1 Disposal SSCWD Softening and Demineralization Projects SSCWD Ridgemark WWTP and Recycled Water Projects Treated Water Storage Facilities Phase 2A Recycled Water Facilities (By 2015) New Wells DWTP Expansion	Alternative 3B – Phased Demineralization of Urban Wells (By 2015 Alternative 3A – Demineralize Urban Wells to Meet MOU Water Quality Goals	Alternative 1A – Exchange Agricultural CVP Supply for Recycled Water – Treat Locally and/or Use for Exchange as Part of Regional Option Alternative 1B – Reallocate Unused CVP M&I Entitlements Alternative 2A – Develop Local Surface Water Supply	Concept 4 – Utilize Water from High Groundwater Basins Exchange North Area Groundwater for CVP Supply from PVWMA Demineralize or Soften Groundwater from San Juan Subbasin and Import to Urban Area
		Other Water Supplies and Options Identified Through Ongoing Regional Studies and Future Updates to Master Plan	

Implementation Timing

Implementation Timing

accomplished by Phase 1 spray fields at the Hollister Municipal Airport and irrigation at Riverside Park and in Phase 2A by irrigation use in the Wright Road / McCloskey Road corridor. Similarly, SSCWD would dispose of treated wastewater through irrigation at the Ridgemark Golf Course.

ES-3.2 Phasing

In order to comply with regulatory requirements, there are current projects underway which are scheduled to be complete by the end of 2008. These current projects include the City of Hollister DWTP, the Seasonal Storage Reservoir, and the Phase 1 Recycled Water Facilities. This Master Plan builds upon the current projects.

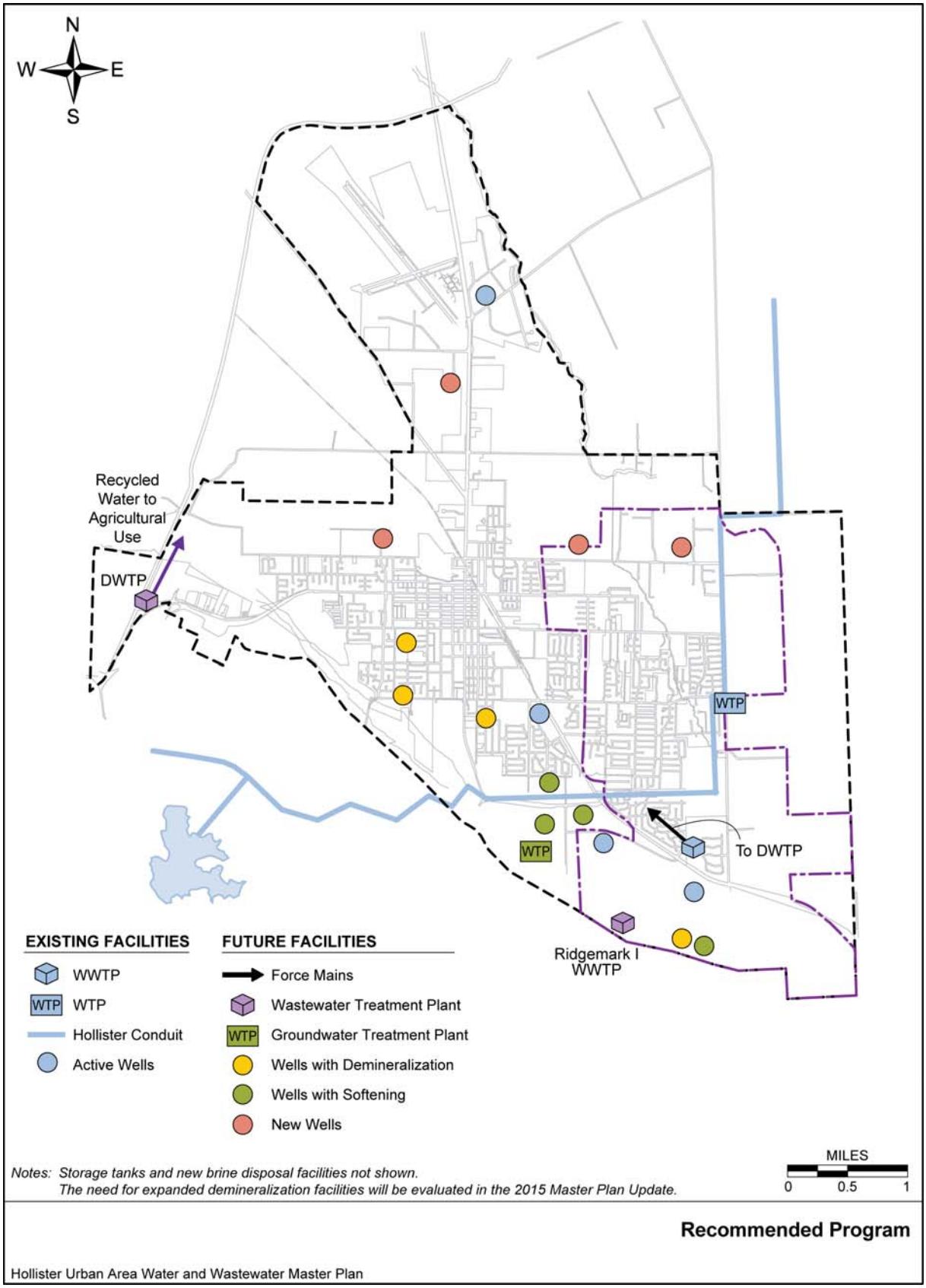


Figure ES-5: Recommended Program

The facilities in the recommended plan would be implemented in three phases as shown in Figure ES-6. The three phases would be as follows:

- Phase 1 – Near Term (To 2015)
- Phase 2 – Intermediate Term (To 2023)
- Phase 3 – Long Term (After 2023)

The first phase (Phase 1) would extend to 2015. This is the date established in the MOU for implementation of a recycled water program meeting the water quality goals of the MOU. The program solutions would be implemented during Phase 1. Modifications and improvements to the Lessalt WTP would be completed by 2010 to allow this facility to produce 3.0 mgd and meet all current drinking water regulations. Additionally, SSCWD will implement a softening program in the Ridgemark area and upgrade the Ridgemark Wastewater Treatment Plant in order to be compliant with its regulatory requirements by 2010. The first phase of groundwater demineralization facilities would be completed, including demineralization at three City wells and one SSCWD well. SSCWD will also construct a softening plant in the Fairview pressure zone. The final elements of Phase 1 include construction of additional treated water storage facilities, the Phase 2A Recycled Water Facilities in the Wright Road / McCloskey corridor as identified in the Recycled Water Feasibility Study Update, and the SSCWD Ridgemark Recycled Water Facilities. In addition to these projects, Phase 1 includes on-going study and development of a long term water supply to meet the demands projected for buildout conditions.

Phase 2 would include the improvements required from 2015 to 2023, which is the end of the planning period for this Master Plan. During Phase 2, a second phase of demineralization facilities may be considered for implementation at City and SSCWD wells dependent on the development of drinking water demands in the HUA and the ability to optimize water quality distribution with only Phase 1 demineralization facilities coupled with distribution system improvements. Additional treated water storage facilities and the development of two new wells are required to meet projected growth in the HUA. Between 2018 and 2020, a 1.0 mgd expansion of the City of Hollister DWTP would also be completed by adding additional membrane capacity. Moreover, the RWQCB requires that the City of Hollister begin planning to expand the DWTP when flows reach 75 percent of design capacity. It is projected that this DWTP expansion planning would occur during the Phase 2 timeframe.

The final phase (Phase 3) would be to buildout. Future updates to this Master Plan will more precisely define the needs and timing of the facilities required after 2023. Expansion of the City DWTP and the recycled water facilities will be required and additional demineralization facilities may be necessary. However, as shown in Table ES-1, the most significant element for buildout conditions will be the implementation of a long-term water supply to meet projected demands for buildout conditions.

ES-3.3 Estimated Costs

The estimated capital costs for the recommended program through 2023 are summarized in Table ES-2. The costs in this table are organized by phase and project type. All estimated capital costs are based on 2008 dollars.

Table ES- 2: Summary of Capital Improvement Program

Phase/Facilities	Estimated Capital Cost ($)	
Phase 1 (2015)		
Water	100,900,00	
Wastewater	9,720,000	
Recycled Water	14,395,000	
Subtotal Phase 1		125,015,000
Phase 2 (2023)		
Water	7,060,000	
Wastewater	1,000,000	
Subtotal Phase 2		8,060,000
Total (Phase 1 & 2)		133,075,000
Less Base Case		70,025,000
Marginal Total Cost		63,050,000

Note: The costs in this table do not include water distribution pipelines and wastewater collection pipelines, or the costs associated with projects currently underway, including the DWTP, Phase 1 Recycled Water Project, the Seasonal Storage Reservoir and two new wells in SSCWD. Demineralization costs only include Phase 1 Demineralization. The need for expanded demineralization facilities will be evaluated in the 2015 Master Plan Update.

The MOU Parties should update financial and rate studies to reflect the projects identified in this Master Plan. In addition to local financing options, grants and loans should be investigated for the required improvements. The water, wastewater and recycled water infrastructure funding sources which may be suitable for projects within the recommended program are listed below.

- Infrastructure State Revolving Fund Program
- Safe Drinking Water State Revolving Fund

- Local Water Supply Construction (Proposition 82)
- Clean Water State Revolving Fund
- Water Recycling Construction Program
- Water Recycling State Revolving Fund

It is recommended that the MOU Parties work together on the development of a funding implementation strategy and, where applicable, apply for loans/grants jointly.

ES-3.4 Benefit and Cost Allocation

The fundamental issue for the recommended program in this Master Plan is the equitable distribution of costs for a multi-purpose program serving multiple agencies.

Some costs may be assigned solely to a single purpose or agency. These directly assignable costs are referred to as specific costs. Other costs cannot be assigned to a single beneficiary because they serve multiple purposes or agencies. These costs are referred to as joint costs.

There are a variety of methods for allocation of joint costs. The recommended framework for use in allocating costs in this Master Plan, illustrated in Figure ES-6, is based upon a combination the Share of Use and Share of Benefits approaches.

The first step in cost allocations is to define the specific costs for each beneficiary. As Table ES-3 shows, the specific costs are approximately $2.73 million for the City and approximately $47.65 million for SSCWD. The remaining joint costs after assignment of the specific costs total $82,695,000. These are the joint costs which must be allocated among the MOU Parties.

Table ES- 3: Summary of Specific and Joint Costs

Project Category	Estimated Cost	Specific Costs				Joint Costs
		City	County	SBCWD	SSCWD	
Water Facilities	107,960,000	1,730,000			33,990,000	72,240,000
Wastewater Facilities	10,720,000	1,000,000			9,720,000	
Recycled Water Facilities	14,395,000				3,940,000	10,455,000
Total	133,075,000	2,730,000			47,650,000	82,695,000

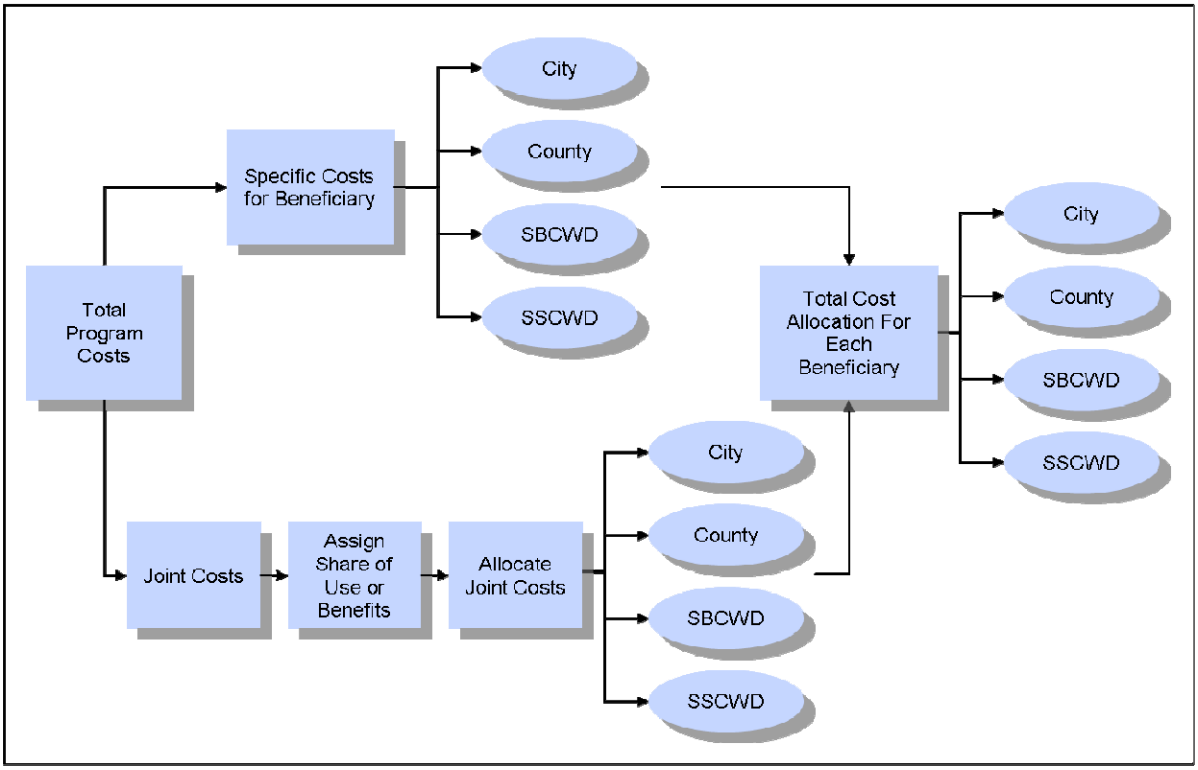


Figure ES- 6: Framework for Benefit and Cost Allocation

Costs for the Lessalt WTP Upgrade Project and the Treated Water Storage may be allocated according to use by the City and SSCWD. Review of past agreements, historical and future usage, and additional modeling will be used to develop equitable sharing of these costs.

Allocation of joint costs for the groundwater demineralization at City wells and the recycled water facilities will be more complex. These two program elements serve multiple beneficiaries and it is recommended that the joint costs for these facilities be allocated in proportion to the share of benefits provided.

In order to allocate joint costs among the MOU Parties, the program benefits must be valued and allocated to the beneficiaries. A preliminary benefit allocation is presented in Table ES-4.

Table ES- 4: Preliminary Benefit Assignment

Benefit	City	County	SBCWD	SSCWD
Water Supply				
Improved Supply Reliability for M&I Users	X	X		X
Improved Supply Reliability for Agricultural Users			X	
Drinking Water Quality				
Improved Drinking Water Quality and Consumer Cost Savings	X	X		X
Reduced Salt Load to Groundwater Basin	X	X	X	X
Effluent Disposal from Wastewater Treatment				
Improved Effluent Quality and Cost Effective Effluent Disposal	X	X		X
Reduced Percolation to Groundwater Basin and Contribution to Localized High Groundwater Conditions	X	X	X	
Supply of High Quality Recycled Water			X	X

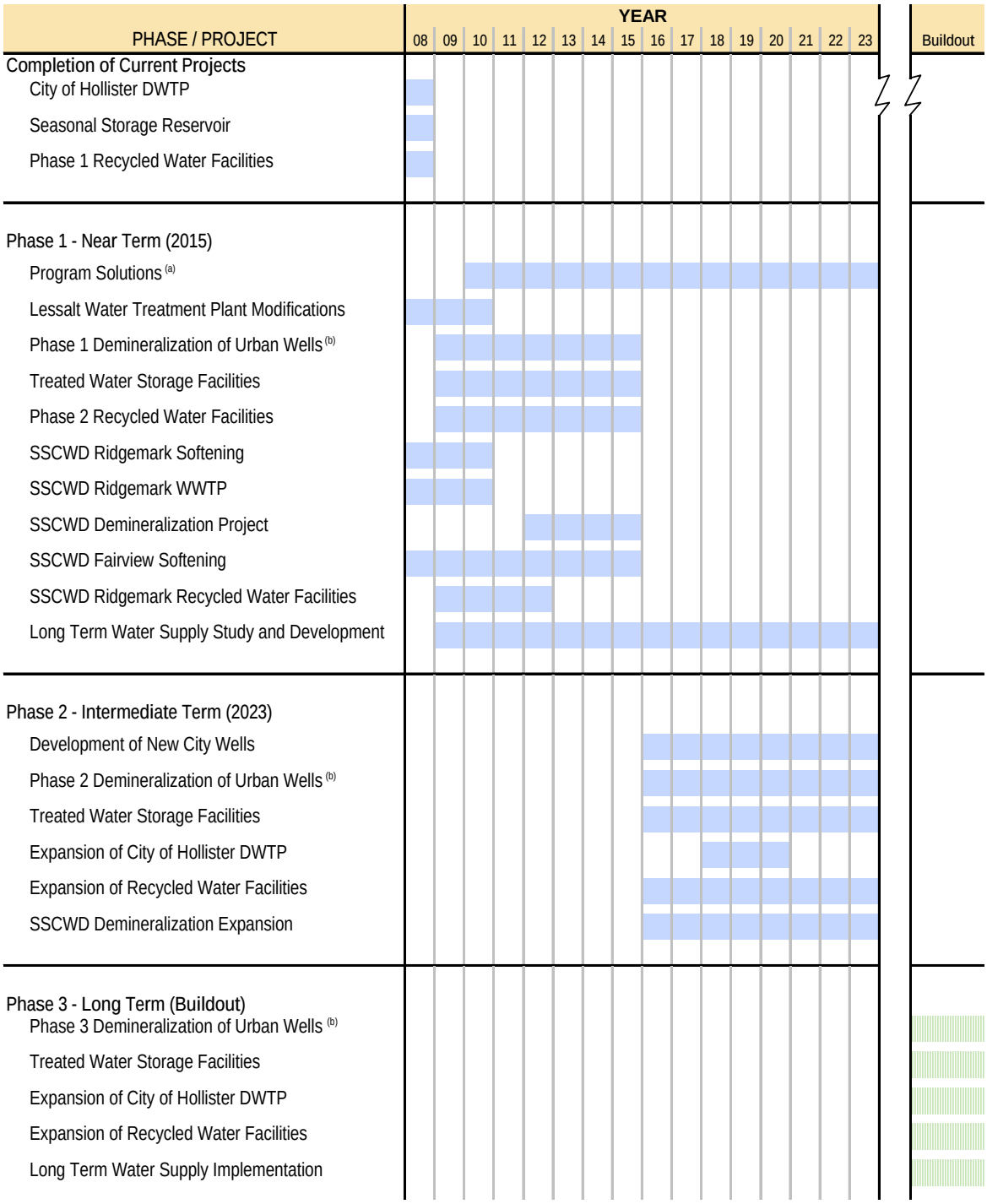
The benefit allocation is the key component in the allocation of joint costs for groundwater demineralization and recycled water facilities. Therefore, it is expected that significant negotiations will be required to build consensus among the MOU Parties and finalize the allocations presented above.

As Figure ES-6 illustrates, the specific costs and allocated share of joint costs are added to develop the total cost allocation for each of the MOU Parties. It is important to differentiate between cost allocation and cost sharing. While cost allocation distributes the cost of the program, it does not represent what each MOU Party may ultimately pay.

The benefit and cost allocation framework in Figure ES-6 will serve as a starting point for negotiations between the MOU Parties. Prior agreements, institutional considerations, and other factors will need to be addressed during the negotiations.

ES-3.5 Recommended Implementation Schedule and Next Steps

Implementation of this Master Plan will require overall program activities and individual facilities activities. The current projects shown in Figure ES-7 are already under construction or in design. The next major facilities would be implemented as part of Phase 1 through 2015. Figure ES-8 illustrates the recommended implementation schedule and the steps required to ensure timely completion of the Phase 1 facilities.



Notes:

(a) Program solutions include water conservation, softener ordinance, salinity education, and dual distribution sytems for new development.

(b) Phase 1 Demineralization includes 3 City wells. Need for later phases will be determined based on demand and system optimization.

(c) Facilities implementation steps include facilities planning, predesign, CEQA compliance, permitting, final design, construction and startup.

Figure ES- 7: Implementation Program Phasing

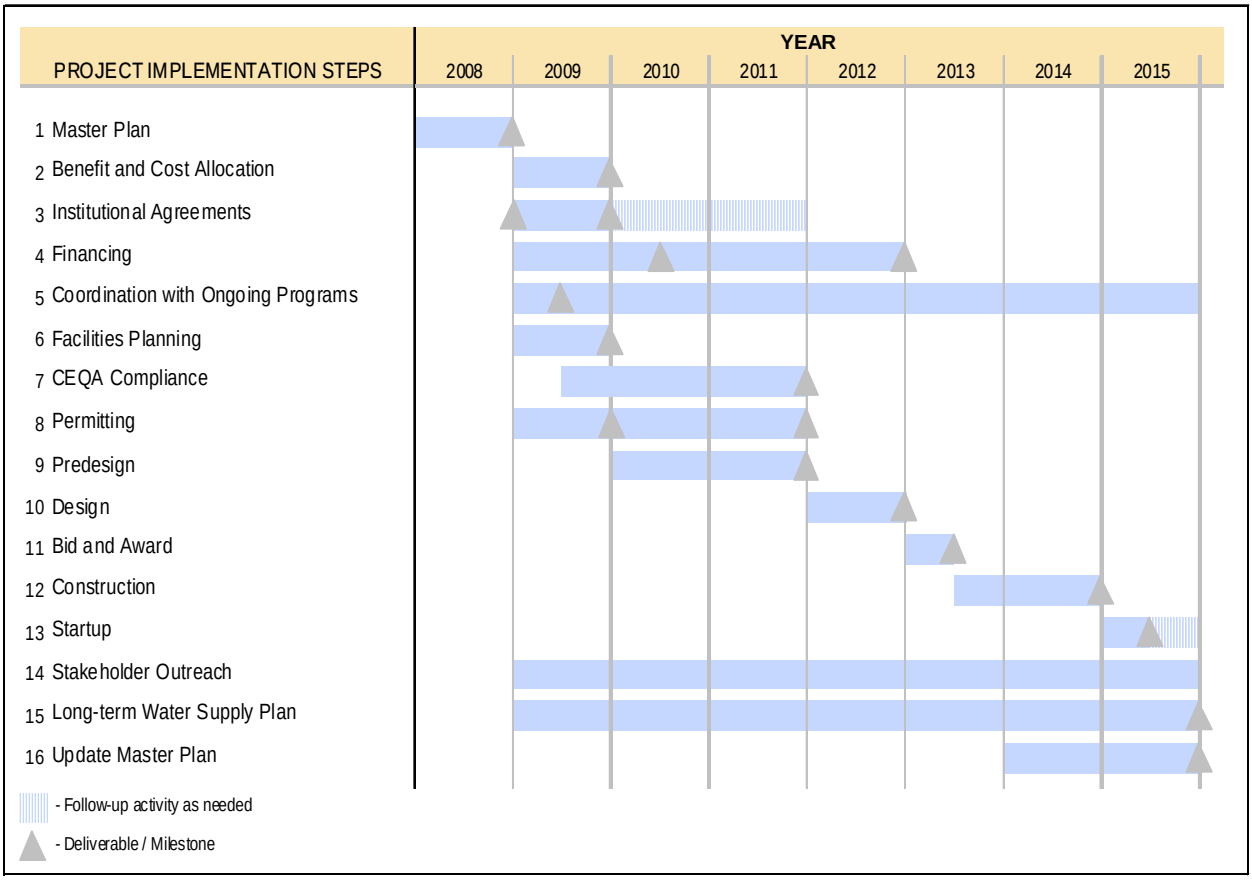


Figure ES- 8: Implementation Schedule through 2015

The following recommended next steps are the critical actions for implementation of this Master Plan:

- **Benefit and Cost Allocation**

  The program costs associated with the implementation of this Master Plan should be shared among the MOU Parties according to the level of benefit each party receives. In many cases, program costs cannot be assigned to a single beneficiary, because they serve multiple users or purposes. To ensure that implementation of this Master Plan stays on schedule, cost allocation should be initiated immediately. The effort will require the cooperation of each MOU Party and should result in a table identifying each program element, its total cost and the cost allocated to each MOU Party. The cost allocation should be completed by the end of 2009.

- **Institutional Agreements**

  The most expeditious way to proceed with the recommended next steps for implementation of this Master Plan would be to develop an amendment to the MOU in accordance with Article 13. The MOU should be amended in two steps.

  The first step would be to provide the basis for completing the initial implementation steps, including the benefit and cost allocation, initial financing strategy, facilities planning, and stakeholder outreach. This amendment will be required immediately following completion of this Master Plan.

  The second amendment would address engineering, environmental compliance, permitting, and continued financing and stakeholder outreach for the facilities to be constructed by 2015. This amendment should be finalized immediately following the completion of the benefit and cost allocation by the end of 2009.

  Finally, a third amendment could be prepared to address the responsibilities for ownership and operation of the facilities to be constructed by 2015. However, alternative institutional agreements should also be evaluated as part of this process.

- **Financing**

  A funding implementation strategy should be developed to prioritize the recommended grants and loan opportunities based on their respective timeframes, funding limits and interest rates. The prioritization of grants and loans should begin immediately upon completion of this Master Plan to facilitate timely submission of applications. It is recommended that the MOU Parties work together on the development of the funding implementation strategy and, where applicable, apply for loans/grants jointly. Finally, each of the MOU Parties should update their financial and rate studies to reflect the projects identified in this Master Plan.

- **Coordination with Ongoing Programs**

  There are a number of ongoing projects and programs which are integral parts of the recommended program. A comprehensive program schedule should be developed which identifies the linkages between programs and the critical path tasks. This overall program schedule should be prepared by mid-2009 and then monitored and updated on a monthly basis by a single implementation program manager. All MOU Parties should provide input to the overall program schedule development and regular updates.

- **Engineering**

  The recommended facilities described in this Master Plan are based upon preliminary sizing, locations, and operational scenarios. Facilities planning is required to refine cost estimates, support the benefit and cost allocation, conduct additional distribution system modeling to optimize piping and evaluate operational scenarios, evaluate the advantages and disadvantages of wellhead demineralization versus centralized demineralization and consider additional brine disposal alternatives. The facilities plan should be completed by 2010 and include details regarding Phase 1 demineralization of urban wells, the treated water storage reservoirs, and the Phase 2 recycled water facilities. Due to the interconnectedness of the water distribution system, the facilities plan should also include the SSCWD softening projects.

  Following completion of the facilities plan, predesign and final design of the facilities would be completed. The responsible parties for these efforts should be identified in the institutional agreements, as described above. Final design should be complete by 2013.

- **CEQA Compliance**

  CEQA compliance has been completed for the City and County General Plans, the Groundwater Management Plan Update, and the City of Hollister DWTP improvements. The degree to which that CEQA coverage applies to the Master Plan must be confirmed. If additional CEQA compliance is needed for the Master Plan, it could be accomplished through a programmatic EIR or as part of EIRs for the individual facilities improvements. Since the Lessalt WTP was completed for water quality purposes, additional CEQA coverage may be necessary for the currently proposed plan.

  The project EIRs for each facility, respectively, should be prepared in conjunction with the predesign task, such that they are completed by 2012.

- **Permitting Strategy**

  Numerous federal, state, and local permits will be required for implementation of the recommended facilities. It is recommended that a comprehensive permitting strategy be developed to minimize potential delays and mitigation costs. This strategy should include early contacts with critical regulatory agencies to define permitting needs and should be completed by the end of 2009. Following that, permitting should be conducted during the predesign task, so that all permits have been obtained by 2012.

- **Stakeholder Outreach**

  Stakeholder outreach has been an important component of developing this Master Plan. Fact sheets and public workshops were utilized to educate the public and obtain input. Similar activities should be used during program implementation to provide public education on critical items (i.e. water softener ordinance, salinity education, and water recycling) and to maintain public support for the program.

- **Long-term Water Supply Plan**

  As previously described, substantial additional water supplies will be required for the Study Area at buildout conditions. Due to the time required to develop new water supplies in California, preliminary work should be initiated to investigate the identified options. To preserve flexibility it may be necessary to secure water rights, begin negotiations with regional partners, and purchase property. All MOU Parties should participate in this process. The long-term water supply plan should be documented in conjunction with the 2015 Master Plan Update.

- **Update Master Plan**

  This Master Plan should be updated prior to 2015 to adjust the recommendations for facilities and timing based on actual growth rates, progress made in program implementation, and potential new issues and opportunities. The MOU Parties should each participate in the Master Plan Update.

1.0 Introduction

This Hollister Urban Area Water and Wastewater Master Plan (Master Plan) provides a comprehensive plan and implementation program to meet the existing and future water resources needs of the Hollister Urban Area. This Master Plan was initiated through a Memorandum of Understanding (MOU) developed by the City of Hollister, San Benito County, and the San Benito County Water District (SBCWD). The technical and economic analyses completed for the development of this Master Plan are summarized in this report. References, technical memorandums, detailed analyses, and related information are included in the separately bound appendices.

1.1 Background

Northern San Benito County has a diverse and complex water supply composed of imported surface water from San Luis Reservoir, a substantial groundwater basin, numerous river and creek channels for groundwater recharge, and significant opportunities for water recycling. Since 2002, wastewater treatment and disposal have become a constraint to development of the Hollister Urban Area due to a sewer growth moratorium. In addition, improved water supply quality and reliability are required for the long-term economic growth of the area. Numerous previous and ongoing studies support the facilities plans, analyses, and recommendations described in this Master Plan.

1.1.1 Existing Conditions

The Hollister Urban Area is located in San Benito County, California, approximately 50 miles southeast of the City of San Jose and 40 miles east of Monterey Bay as shown in Figure 1-1. The Hollister Urban Area includes the City of Hollister and adjacent unincorporated areas of San Benito County designated for urban development.

Due to its unique climate, fertile soils, and water supplies, agriculture is the county's largest industry. According to the county Agricultural Commissioner's Annual Report for 2007, the gross value of agricultural production was over $293 million. The top five crops in 2007 were lettuce (salad), nursery stock, miscellaneous vegetable and row crops, grapes (wine), and bell peppers. Typical irrigation of row crops is shown in Photograph 1-1.

Hollister Urban Area Water and Wastewater Master Plan

Location Map and Study Area

Figure 1-1

Figure 1-1: Location Map

Photograph 1-1: San Benito County Row Crop Irrigation

According to the City of Hollister General Plan (December, 2005), San Benito County was the fastest growing county in California during the 1990s, with the majority of that growth concentrated in the City of Hollister. With the proximity of the City of San Jose and Silicon Valley, the area is increasingly becoming a bedroom community for commuters. Currently, approximately one-half of residents commute to areas outside San Benito County.

1.1.2 Previous and Ongoing Studies

Numerous studies and reports have been prepared regarding water supply, wastewater treatment and disposal, and recycled water in the Hollister Urban Area. To avoid duplication of effort and provide consistency with ongoing plans and programs, pertinent previous studies have been used in the development of this Master Plan, as appropriate. Some of the key previous and ongoing studies which form the basis for this Master Plan are as follows:

- Groundwater Management Plan Update for the San Benito County Part of the Gilroy-Hollister Groundwater Basin (July 2003)
- Urban Water Management Plan Update (Final Draft, June 2008)
- City of Hollister Long-term Wastewater Management Plan for the Domestic Wastewater Treatment Plant and the Industrial Wastewater Treatment Plant (Draft, March 2007)
- Sunnyslope County Water District Long-term Wastewater Management Plan (January 2006)

- San Benito County Regional Recycled Water Project Feasibility Study (May 2005)
- Recycled Water Feasibility Study Update (Draft, March 2008)
- Pajaro River Watershed Integrated Water Resources Management Plan (In progress)

Pertinent information from these studies is summarized in Chapters 4 and 6, along with descriptions of how these studies impacted or contributed to this Master Plan. A complete list of previous studies and other references and sources of data are included in Appendix A.

1.1.3 Memorandum of Understanding

A partnership was formed between the City of Hollister, San Benito County, SBCWD, and SSCWD (hereafter referred to as the MOU Parties) to undertake the development of this Master Plan for the Hollister Urban Area. The City, County and SBCWD executed a Statement of Intent and a MOU in 2004 to initiate of this effort. The MOU was subsequently amended in 2008 to include SSCWD. The Statement of Intent, MOU, and MOU amendment are included in Appendix B.

The MOU describes the principles, objectives, and assumptions that will form the basis of this Master Plan, focusing on the following goals:

- Improve municipal, industrial, and recycled water quality
- Increase the reliability of the water supply
- Coordinate infrastructure improvements for water and wastewater systems
- Implement goals of the Groundwater Management Plan
- Integrate recommendations of the Long-term Wastewater Management Plans (LTWMP) with the Master Plan
- Support economic growth and development consistent with the City of Hollister and San Benito County General Plans and Policies
- Consider regional issues and solutions

The MOU also established the institutional framework for completing this Master Plan as shown in Figure 1-2.

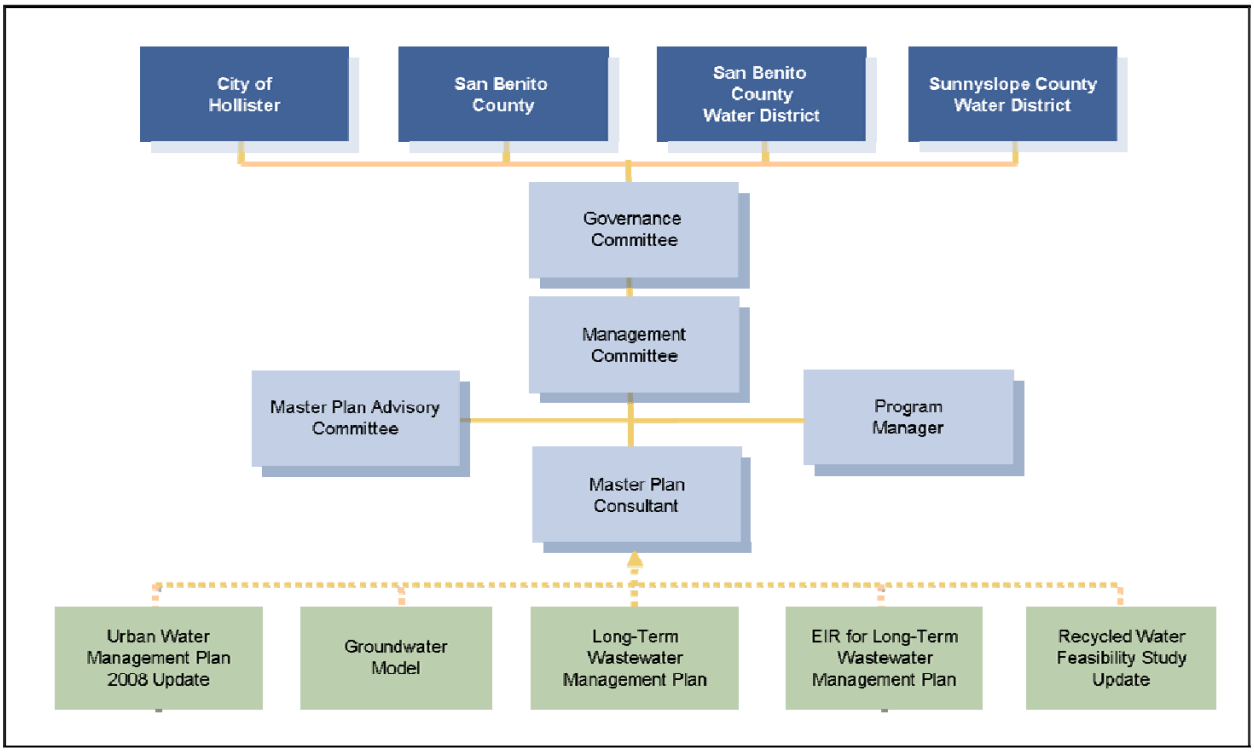


Figure 1-2: Hollister Urban Area Water and Wastewater Master Plan Organization Chart

1.2 Problem Definition

The Hollister Urban Area has a diverse and complex water supply system composed of groundwater, local rivers and creeks, imported surface water, and significant opportunities for recycled water use. Although treated drinking water meets all primary federal and state drinking water regulations, hardness and minerals in the water supply need to be reduced. The reliability of imported surface water has declined significantly and the sustainability of local supplies requires review. The high level of minerals in the treated wastewater limits both disposal and recycling options due to adverse impacts to crops and groundwater. Based on this problem definition, the water resource issues that must be addressed in the Hollister Urban Area include the following:

- Quality of drinking water and recycled water
- Reliability of water supply
- Coordination of water and wastewater system improvements

- Regional balance of water resources including high groundwater areas

Each of these water resource issues contributing to the problem definition are described in more detail in the following subsections.

1.2.1 Quality of Drinking Water and Recycled Water

Municipal and industrial water supply in the Hollister Urban Area is served by a combination of local groundwater and imported surface water from the Federal Central Valley Project (CVP). Historically, total dissolved solids (TDS) concentrations in groundwater range from 800 to 1,200 milligrams per liter (mg/L) and imported CVP surface water has TDS concentrations ranging from 250 to 300 mg/L. Historically, total hardness concentrations in the groundwater range from 100 to 480 mg/L as calcium carbonate ($CaCO_3$) and CVP sources have a hardness concentration of approximately 110 mg/L as $CaCO_3$. Although treated water meets all primary federal and state drinking water limits, hardness and minerals in the water supply need to be reduced.

TDS is usually not a health concern, but can be a taste, odor, and color concern for drinking water. At levels over 500 mg/L, TDS can cause gastrointestinal irritation to consumers not used to these levels. Excess sodium may affect those restricted to low sodium diets or those suffering from toxemia. Other concerns include scaling on sinks and fixtures, leaving white spots on cars, deposits in and corrosion of hot water heaters and pipes, and reduced effectiveness of detergent and shampoo. The buildup in water using appliances can shorten appliance life and increase costs to consumers. Preliminary estimates indicate that local groundwater supplies may reduce the life expectancy of residential appliances by up to 25 percent, as compared with a water supply having a TDS level of 500 mg/L. Other residential costs include home softeners, bottled water, and increased use of soap and detergents.

The following treated water objectives were established in the MOU to provide an improved water quality for municipal and industrial supply:

- TDS concentrations not greater than 500 mg/L
- Hardness not greater than 120 mg/L

Photograph 1-2: High Mineral Content of Groundwater Impacts Residential Customers

Significant differences between groundwater and surface water quality exist with regard to constituent concentrations such as TDS, hardness, and nitrates. One of the project objectives is to develop a long-term plan for providing a predictable supply of high quality water that meets the goals established in the MOU.

Treated wastewater effluent typically has TDS concentrations of approximately 1,200 mg/L at the City of Hollister Wastewater Treatment Plant and up to 1,800 mg/L at the two wastewater treatment plants serving the Ridgemark area of the SSCWD. This relatively high mineral content limits both disposal and recycling options due to adverse impacts to groundwater and crops. A target treated effluent TDS concentration of 500 mg/L (with a maximum limit of 700 mg/L) was established in the MOU to increase recycling and disposal opportunities.

1.2.2 Reliability of Water Supply

Imported surface water is supplied to the Hollister Urban Area from the CVP through the San Luis Reservoir, the San Felipe Division facilities, and the Hollister Conduit. As a result of over-commitments of CVP supplies and supply limitations imposed by environmental constraints, the reliability of imported CVP supplies has been reduced since surface water was first delivered to the County in 1987. For example, in critically dry years, agricultural deliveries may be reduced to less than 20 percent of contract entitlements and municipal supplies may be reduced to approximately 60 percent of contract entitlements. In multiple dry year conditions, agricultural supplies may not be available and municipal supplies may be reduced to 50 percent. Based on current trends, it is likely that the reliability of imported surface water supplies will continue to decline in the future. Therefore, a long-term plan is

required for a reliable water supply to meet projected growth defined by the City and San Benito County General Plans.

1.2.3 Coordination of Water and Wastewater System Improvements

The City of Hollister and adjacent areas have experienced significant growth over the past 15 years, up until the sewer growth moratorium was imposed in 2002. During the period from 1990 to 2002, the City experienced an average annual population growth rate of approximately 5.5 percent. This growth has resulted primarily from increasing pressure for housing for workers employed in the San Francisco Bay Area and other nearby communities.

The General Plans adopted by the City and San Benito County anticipate continued significant growth until 2023. Based on data from the California Department of Finance, the County population is projected to increase from 57,490 in 2005 to 76,901 in 2023. The water and wastewater facilities required to serve the needs projected in the General Plans must be coordinated to coincide with the timing of the new residential, commercial, and industrial development to provide the required level of service and minimize costs. The projected land use from the General Plans is shown on Exhibit I at the end of this report.

1.2.4 Regional Balance of Water Resources Including High Groundwater Areas

Groundwater pumping for agricultural irrigation began in the Hollister Valley in 1878. Since that time, groundwater levels in some areas have declined as much as 180 feet. To compensate for groundwater declines, groundwater recharge and the use of imported surface water have been implemented by the SBCWD.

The use of imported CVP surface water beginning in June 1987 has stabilized groundwater levels and, in some locations (especially the Bolsa and San Juan Subbasins), created problematic high groundwater conditions. As described in the previous subsection, the local groundwater supplies have high levels of minerals resulting in the need for numerous residential softeners. The high mineral content of the groundwater, coupled with residential softener residuals being introduced into the wastewater stream, create high levels of TDS in the wastewater and limit wastewater disposal and recycling options.

Previous analyses have concluded that the existing available water supplies are sufficient to meet projected demands over the timeframe of the current General Plans (through 2023) under

normal (non-drought) conditions. However, due to water quality, reliability, and wastewater disposal issues, a more effective balance in the use of available water supplies is required. Therefore, this Master Plan is based on an integrated approach to optimize water supply, wastewater management, and water recycling.

1.3 Objective

The objective of this Master Plan is to provide a long term vision, through 2023, of water and wastewater management actions and infrastructure improvements for management of those resources for the Hollister Urban Area. As described in the MOU, this Master Plan provides a comprehensive plan including: (1) capacity and estimated cost of physical facilities, and (2) an implementation program including institutional agreements, engineering, California Environmental Quality Act (CEQA) compliance, permitting, financing, coordination with ongoing projects and programs, stakeholder outreach, and scheduling.

1.4 Scope of Work

Detailed technical and economic analyses were completed to achieve the Master Plan objectives. The following tasks and subtasks comprise the scope of work for this Master Plan:

- Task 1: Confirm planning assumptions and establish evaluation criteria
  - Subtask 1.1: Kickoff meeting
  - Subtask 1.2: Summarize related work
  - Subtask 1.3: Problem definition
  - Subtask 1.4: Validate principles and objectives
  - Subtask 1.5: Establish evaluation criteria and methodology
  - Subtask 1.6: Summarize land use and demand projections
  - Subtask 1.7: Prepare Part 1 Technical Memorandum
- Task 2: Alternative development and evaluation
  - Subtask 2.1: Describe existing urban water resources and systems

- Subtask 2.2: Summarize existing and planned wastewater collection, treatment and disposal options
- Subtask 2.3: Develop urban water resources alternatives
- Subtask 2.4: Evaluate urban water resources alternatives
- Subtask 2.5: Prepare Part 2 Technical Memorandums

- Task 3: Develop implementation plan
  - Subtask 3.1: Describe recommended plan
  - Subtask 3.2: Finalize institutional requirements
  - Subtask 3.3: Develop preliminary financial plan
  - Subtask 3.4: Define permitting and CEQA requirements
  - Subtask 3.5: Develop implementation schedule
  - Subtask 3.6: Prepare Master Plan report
- Task 4: Common elements
  - Subtask 4.1: Project management
  - Subtask 4.2: Key stakeholder coordination
  - Subtask 4.3: Public involvement

1.5 Stakeholder Involvement

The development of a comprehensive and responsive Master Plan involved extensive communications with key stakeholders. A Communications Plan was developed outlining the stakeholder involvement components of this Master Plan. The goals of the Communications Plan were as follows:

- Inform stakeholders of Master Plan issues and potential solutions
- Increase opportunities for public participation
- Ensure and sustain successful implementation of the results

There are three primary groups of stakeholders involved in this Master Plan project: the agencies represented by the Governance Committee, the Management Committee, and the

public. The composition and responsibilities of each of these groups is discussed in the following subsections.

1.5.1 Governance Committee

The Hollister City Council, San Benito County Board of Supervisors, SBCWD Board of Directors, and SSCWD Board of Directors are the final Master Plan decision-makers, providing policy level direction for the Master Plan as indicated in Figure 1-2. The Governance Committee members represent these decision-making bodies (two members from each agency) and also represent their respective customers, which vary in size, complexity, resources, values, and needs.

1.5.2 Management Committee

The Management Committee directed the day-to-day management of this Master Plan project. Each of the MOU Parties (i.e., City, County, SBCWD, and SSCWD) has one representative on the Management Committee. A program manager was retained to assist the Management Committee in completing this Master Plan as shown in Figure 1-2.

1.5.3 Public

The public was highly involved in the master planning effort. The general public and end users include: homeowners, environmental organizations, developers, special interest groups, local business owners, agricultural operators, drinking water and sewer customers, and political organizations.

Five public workshops were held to provide opportunities for the public to understand the process and provide input on key aspects of this Master Plan. The five public meetings were held on the following dates:

- November 16, 2005
- March 22, 2006
- October 24, 2006
- April 4, 2007
- September 23, 2008

In addition, fact sheets were used as communication tools to help explain complex issues associated with the project. The fact sheets and public meeting materials are included in Appendix C.

1.6 Report Organization

This Master Plan provides a summary of pertinent background information, an evaluation of existing facilities, alternatives development and evaluation, and the recommended plan. In an effort to provide a practical review document for project implementation, a summary of previous interim reports and analyses conducted during this project are included. Figure 1-2 illustrates that this Master Plan relies on other key studies as a foundation for this effort. Separately bound appendices to this report provide additional background information, detailed technical and economic data, and further documentation for conclusions and recommendations.

This Master Plan is organized into nine chapters. The chapters follow the work completed for each phase of the project.

- Background
  - Chapter 1 - Introduction
  - Chapter 2 - Existing Water Facilities
  - Chapter 3 - Existing Wastewater Facilities
- Development and Evaluation of Alternatives
  - Chapter 4 - Basis of Planning
  - Chapter 5 - Development of Alternatives
  - Chapter 6 - Evaluation of Alternatives
- Recommended Program
  - Chapter 7 - Water Master Plan
  - Chapter 8 - Wastewater Master Plan
  - Chapter 9 - Implementation Program

An Executive Summary precedes Chapter 1 for use in communicating the Master Plan results.

1.7 Project Team

The project team for completion of this Master Plan included HDR Engineering, Inc.; Karen E. Johnson, Water Resources Planning; RMC Water and Environment; and Gus Yates, Consulting Hydrologist.

1.8 Acknowledgements

During the development of this Master Plan, the project team received invaluable assistance and cooperation from many agencies and individuals. We gratefully acknowledge the following, for their interest and participation:

- Governance Committee
- Management Committee
- City of Hollister Staff
- San Benito County Staff
- San Benito County Water District Staff
- Sunnyslope County Water District Staff

1.9 Abbreviations

To conserve space and improve the text, the following abbreviations have been used in this Master Plan:

ac	acre
ac-ft	acre-feet
ADD	average daily demand
ADWF	average dry weather flow
AIPS	advanced integrated pond system
af/yr	acre-feet per year
ASR	aquifer storage and recovery
BOD	biological oxygen demand

$CaCO_3$	calcium carbonate
CCR	Consumer Confidence Report
CEQA	California Environmental Quality Act
cfs	cubic feet per second
City	City of Hollister
City Council	Hollister City Council
County	San Benito County
CVP	Central Valley Project
D/DBP	Disinfectant/Disinfectant Byproducts
Delta	San Joaquin Delta
DHS	California State Department of Health Services
DPMC	dual-powered, multicellular
du	dwelling units
DWR	California State Department of Water Resources
DWTP	domestic wastewater treatment plant
ea	each
EIR	Environmental Impact Report
ENR	Engineering News Record Construction Cost Index
EPA	U.S. Environmental Protection Agency
fps	feet per second
ft	feet
GMP	Groundwater Management Plan
gpd/du	gallons per day per dwelling unit
gpm	gallons per minute
GWUDI	groundwater under the direct influence of surface water
hp	horsepower
hr	hour
H&SC	Health and Safety Code

I/I	inflow and infiltration
IESWRT	Interim Enhanced Surface Water Treatment Rule
in	inch
IRWMP	Integrated Regional Water Management Plan
ISO	Insurance Services Office
IWTP	industrial wastewater treatment plant
LOD	Level of Development
LT2ESWTR	Long Term 2 Enhanced Surface Water Treatment Rule
LTWMP	Long-term Wastewater Management Plan
Master Plan	Hollister Urban Area Water and Wastewater Master Plan
MBR	membrane bioreactor
MCL	maximum contaminant level
MDD	maximum daily demand
mgal	million gallons
mgd	million gallons per day
mg/L	milligrams per liter
M&I	municipal and industrial
MOU	memorandum of understanding
MSL	mean sea level
NPDES	National Pollution Discharge Elimination System
OCAP	Operation Criteria and Plan
O&M	operation and maintenance
PHD	peak hour demand
PPWD	Pacheco Pass Water District
PRPS	pressure reducing pressure sustaining
PRV	pressure reducing valve
psi	pounds per square inch

PUD	Planned Unit Development
PVWMA	Pajaro Valley Water Management Agency
PWWF	peak wet weather flow
RM	Residential Multiple
RWQCB	California Regional Water Quality Control Board, Central Coast Region
SBCWD	San Benito County Water District
SBR	sequencing batch reactor
SSCWD	Sunnyslope County Water District
SSO	sanitary sewer overflow
State	State of California
SWP	State Water Project
SWTR	Surface Water Treatment Rule
TDS	total dissolved solids
Three Parties	City of Hollister, San Benito County, and San Benito County Water District
Title 22	Title 22 of the California Code of Regulations
TM	Technical Memorandum
TSS	total suspended solids
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
VESP	Vibratory Shear Process
WDR	waste discharge requirements
WRA	Water Resources Association of San Benito County
WTP	water treatment plant
WWTP	wastewater treatment plant
yr	year

2.0 Existing Water Facilities

This chapter provides an overview of the existing water facilities that provide municipal and industrial (M&I) water to the Hollister Urban Area, including water supply systems, treatment facilities, and transmission and distribution systems. The two major water systems are operated by the City of Hollister and the SSCWD. Although the two agencies maintain specific service areas, their water supply and distribution systems are interconnected and can exchange water as necessary to satisfy customer demand. The existing water facilities are shown in detail on Exhibit II at the end of this report.

2.1 Regional Water Supplies

Water supplies for the Hollister Urban Area are groundwater, local surface water, and imported CVP surface water as described below.

2.1.1 Groundwater

Both the City and SSCWD utilize groundwater wells for M&I supply. Groundwater is supplied by an extensive aquifer that in recent years has recovered from overdraft conditions experienced in the 1960s and 1970s. The Groundwater Management Plan Update (2003) estimates that in normal years the safe yield of the groundwater basin is 54,000 acre-feet per year. This estimated safe yield is for Zone 6, and the Bolsa, Paicines, and Tres Pinos groundwater subbasins.

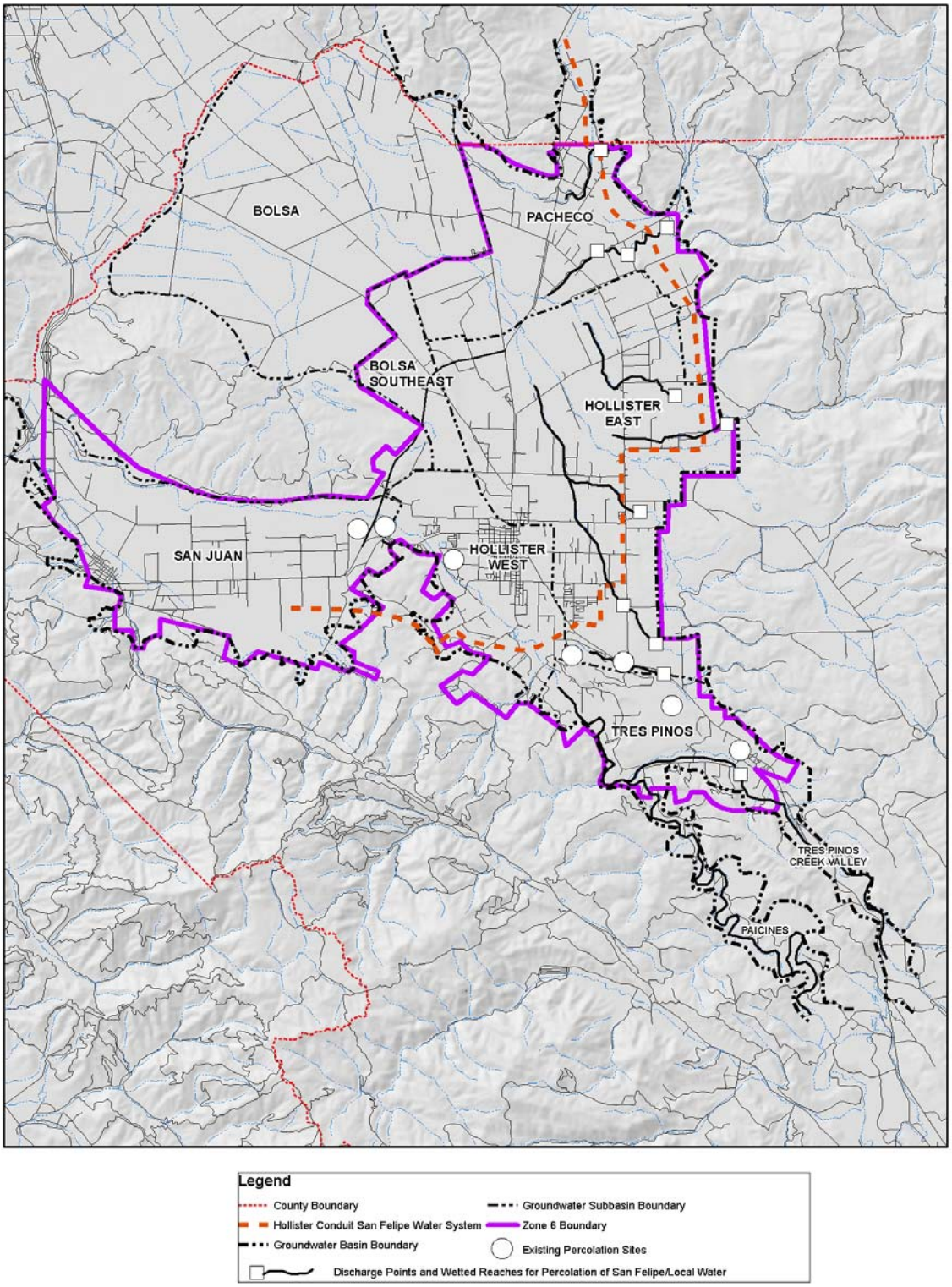
Groundwater in the Study Area is part of the Gilroy-Hollister groundwater basin which underlies the broad valley that extends from the northern part of San Benito County into the southern part of Santa Clara County. The San Benito River and Tres Pinos Creek enter the valley from the southeast, and the Paicines and Tres Pinos Creek Valley groundwater basins are smaller basins located along those waterways upstream of the main basin. Figure 2-1 shows the boundaries of the three basins and the names and boundaries of their subbasins, which were delineated in 1996 based on a combination of infrastructure subdivisions (San Felipe subsystem), political boundaries (Zone 6), and geologic structures (faults).

The SBCWD has jurisdiction throughout San Benito County, and has formed three zones of benefit to obtain funds to support surface water management and groundwater replenishment

activities. Zone 1 covers the entire county and provides the funding base for certain District administrative expenses. Zone 3 generally covers the San Benito River Valley to the confluence with the Pajaro River, from the Highway 25 bridge nine miles south of the town of Paicines to San Juan Bautista, and the Tres Pinos Creek Valley from Paicines to the San Benito River. Zone 3 provides the funding base for operation of Hernandez and Paicines Reservoirs and related percolation and groundwater management activities. Zone 6 includes the Pacheco, Bolsa Southeast, San Juan, Hollister West, Hollister East, and Tres Pinos Subbasins (Figure 2-1 and Figure 2-2) and provides the funding base for importation and distribution of San Felipe water and related groundwater management activities.

The SBCWD prepares an annual report describing the groundwater conditions in the San Benito County part of the Gilroy-Hollister groundwater basin, the Paicines groundwater basin, and Tres Pinos Valley groundwater basin. The annual report documents water use, groundwater levels, groundwater budgets, and water quality, and analyzes their spatial patterns and long-term trends.

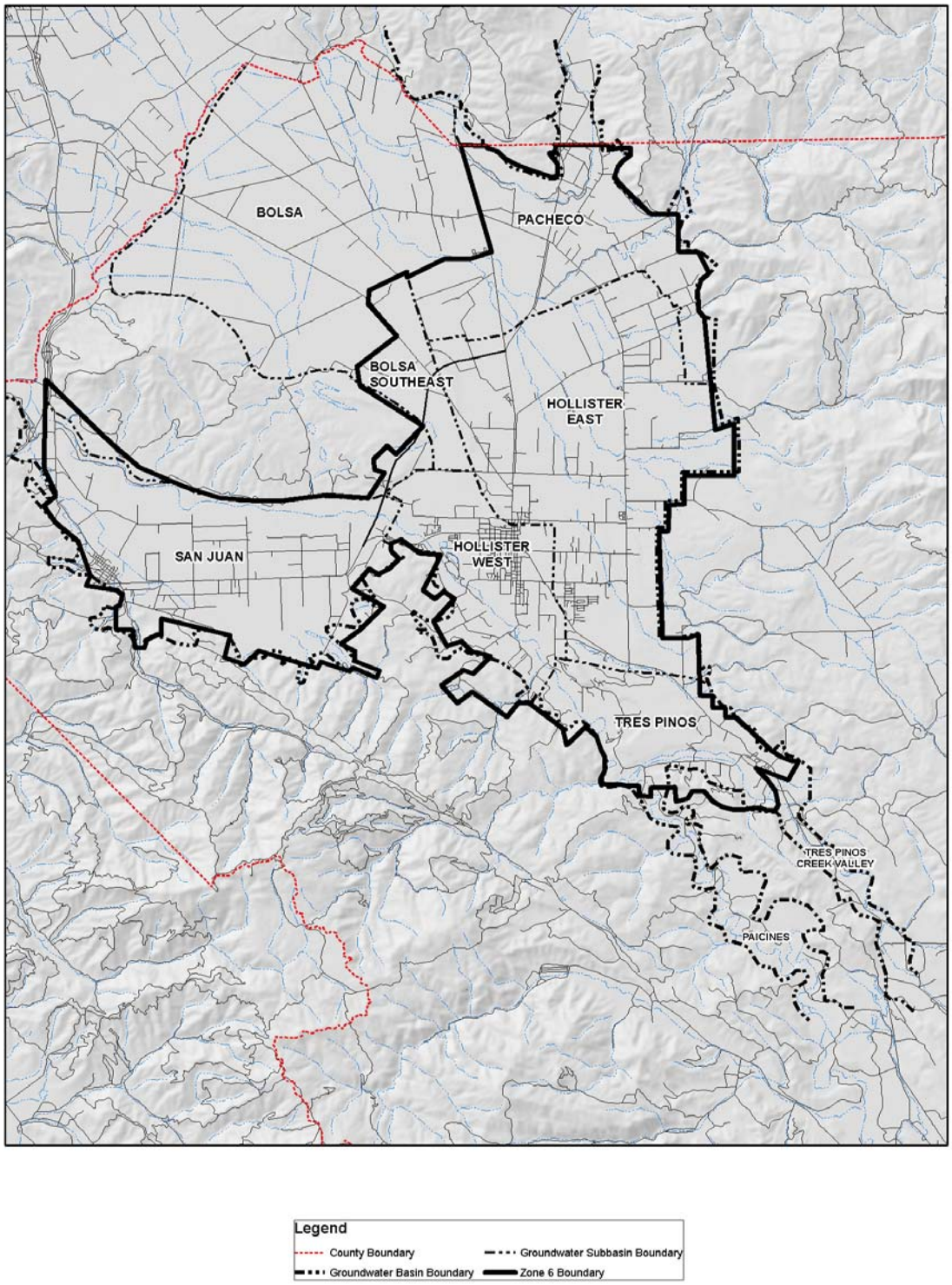
The historical groundwater elevations for each of the subbasins are presented in Figure 2-3. As shown in Figure 2-3, groundwater elevations since 1977 have been relatively stable for the Pacheco (north of County line), Bolsa, Tres Pinos, and Hollister West Subbasins. Groundwater levels have been rising for the Hollister East, Pacheco (south of County line), San Juan, and Bolsa Southeast Subbasins. When the water table approaches or reaches the land surface, it creates saturated soil conditions that can impair crop growth, weaken the foundations of structures, and cause nuisance seeps and boggy areas. In the case of orchards, water tables within about eight feet of the land surface can adversely affect some tree types. The areas where groundwater is relatively shallow are the southern and western part of the San Juan Valley, a broad arc extending from San Felipe Lake southeast to Spring Grove Road, and an area along the Pajaro River.



Hollister Urban Area Water and Wastewater Master Plan

Existing Projects and Activities

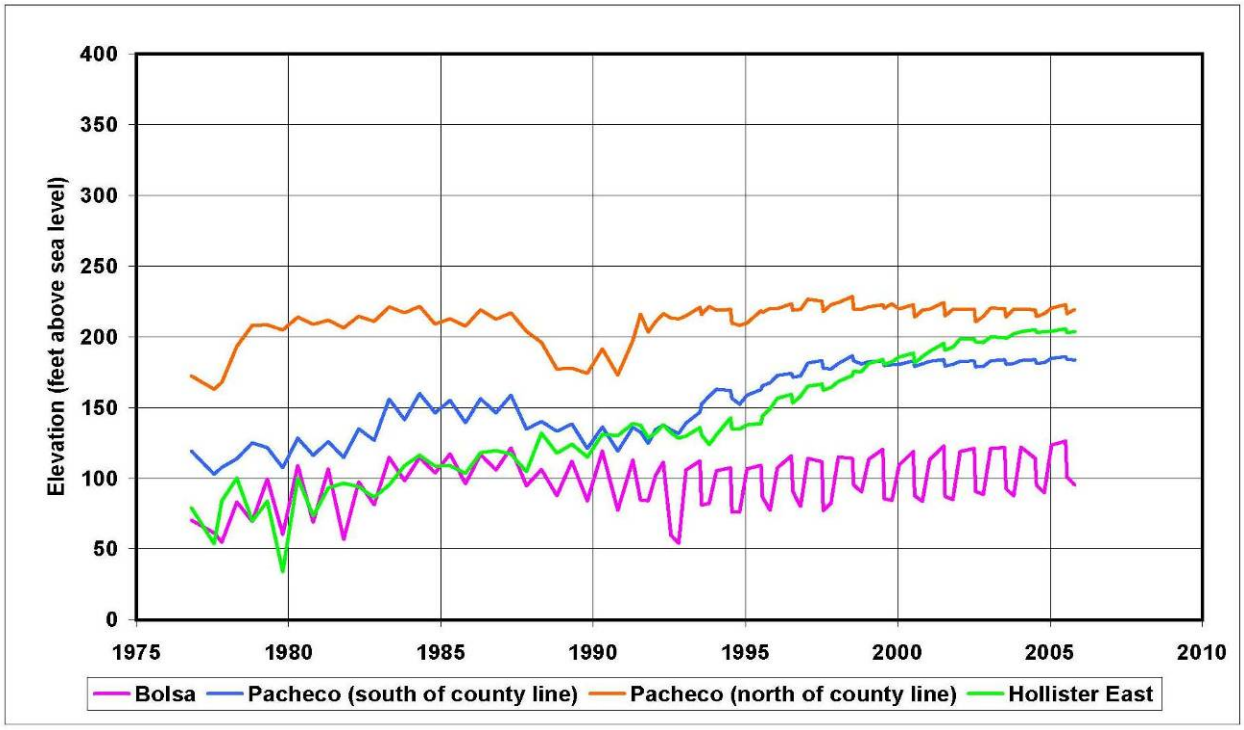
Figure 2-1



Hollister Urban Area Water and Wastewater Master Plan

Zone 6 Boundary

Figure 2-2



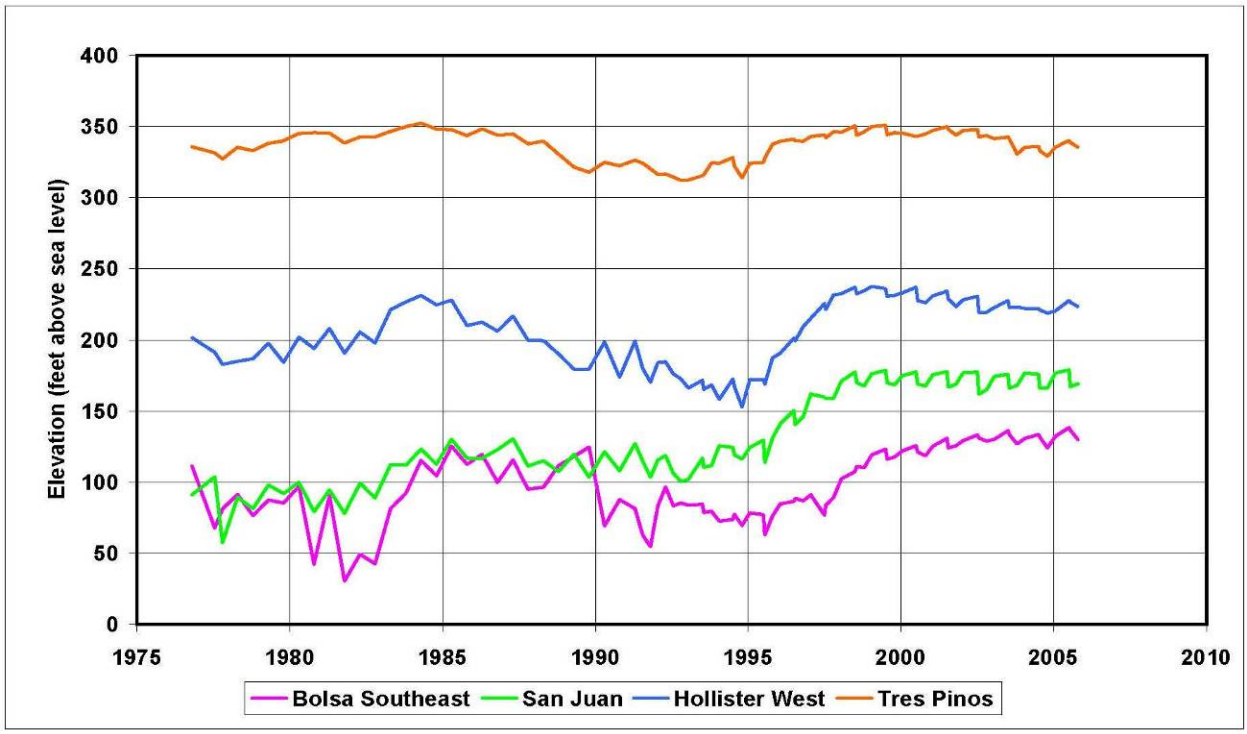


Figure 2-3: Hydrographs of Average Groundwater Elevation in Subbasins During Water Years 1977 to 2005

Source: SBCWD Annual Groundwater Report for Water Year 2005 (Gus Yates, December 2005)

The groundwater has a high mineral content with some wells exceeding 1,200 mg/L TDS compared to the California recommended secondary drinking water standard of 500 mg/L. The salinity patterns and trends are monitored annually by the SBCWD through a network of 18 wells. The salinity database also includes wells from other agencies, although those wells are sampled less frequently. Table 2-1 summarizes the approximate salt balance for the groundwater basin in 2005. These estimates reflect the historical trend of salt inputs greatly exceeding salt removal; this imbalance will gradually increase the salinity of the groundwater. It has already affected shallow groundwater and is expected to spread to deeper zones in the future.

Table 2-1: Estimated Salt Balance

Source of Salt Input/Removal	Annual Salt Load (tons)
Salt Input	
Municipal Wastewater	2,465
Rural Domestic Septic Systems	137
San Felipe Water Used for All Purposes	8,667
Agricultural Soil Amendments	8,860
Agricultural Fertilizers	5,167
Urban Fertilizers and Chemicals	1,008
Percolation From Creeks and Rivers	11,318
Atmospheric Deposition	183
Groundwater Inflow	4,071
Total Inputs	41,876
Salt Removal	
Local Rainfall Runoff	1,623
Groundwater Discharge to Creeks and Rivers	11,588
Total Removal	13,211

2.1.2 Local Surface Water Supplies

The primary sources of local surface water supply are Hernandez Reservoir and Paicines Reservoir. Both of these reservoirs are owned and operated by the SBCWD. Hernandez Reservoir has a capacity of 17,200 af and is located on the San Benito River, 43 miles southeast of Hollister, and stores runoff from the upper San Benito River watershed.

Hernandez Reservoir is designed and operated to supplement the groundwater supply in northern San Benito County. Groundwater storage benefits resulting from Hernandez Reservoir releases do not simply equal the amount of water released from the reservoir because the

releases commingle with natural runoff and base flow along the 66 miles of river channel between the reservoir and the downstream end of the groundwater basin where the river joins the Pajaro River. Under low- to moderate-flow conditions, the groundwater recharge benefit attributable to the project equals total recharge minus recharge that would have occurred without the reservoir. Under high-flow conditions when natural runoff creates continuous outflow to the Pajaro River, releases provide no recharge benefit because the natural flow already exceeds the percolation capacity of the river channel. Furthermore, some of the released water is lost to seepage and evapotranspiration between the reservoir and the Paicines basin, and the lost water does not contribute any benefits to Zone 3 water users.

Paicines Reservoir, with a capacity of 2,870 af, is an offstream reservoir between the San Benito River and Tres Pinos Creek approximately 5 miles south of Tres Pinos as shown on Figure 2-1. It is filled by water diverted from the San Benito River, with some of the diversions consisting of natural runoff and some consisting of rediversion of water stored and released from Hernandez Reservoir. The stored water is released for percolation to Tres Pinos Creek and the San Benito River to provide additional groundwater recharge during the dry season.

2.1.3 Imported Surface Water

The SBCWD also purchases imported CVP surface water from the United States Bureau of Reclamation (USBR). The current SBCWD contract with the USBR is for a total supply of 43,800 acre-feet per year (af/yr), of which 35,550 af/yr is for agricultural use and 8,250 af/yr is for M&I use. The current contract extends until the year 2027 and may be renewed thereafter. The SBCWD recently completed an amendatory contract and is working with the USBR on a renewal contract. The purpose of the amendatory contract is to provide amendments to the existing contract until the renewal contract is in place. The USBR is working to resolve issues related to environmental lawsuits regarding certain already executed long-term renewal contracts and finalize its CVP Operational Criteria and Plan (OCAP) which must be completed before it can execute new long-term renewal contracts. The renewal contract is expected to be finalized in 2008.

CVP water is imported through the Sacramento River-San Joaquin River Delta to San Luis Reservoir and conveyed through the Hollister Conduit as shown in Figure 2-1. The Hollister

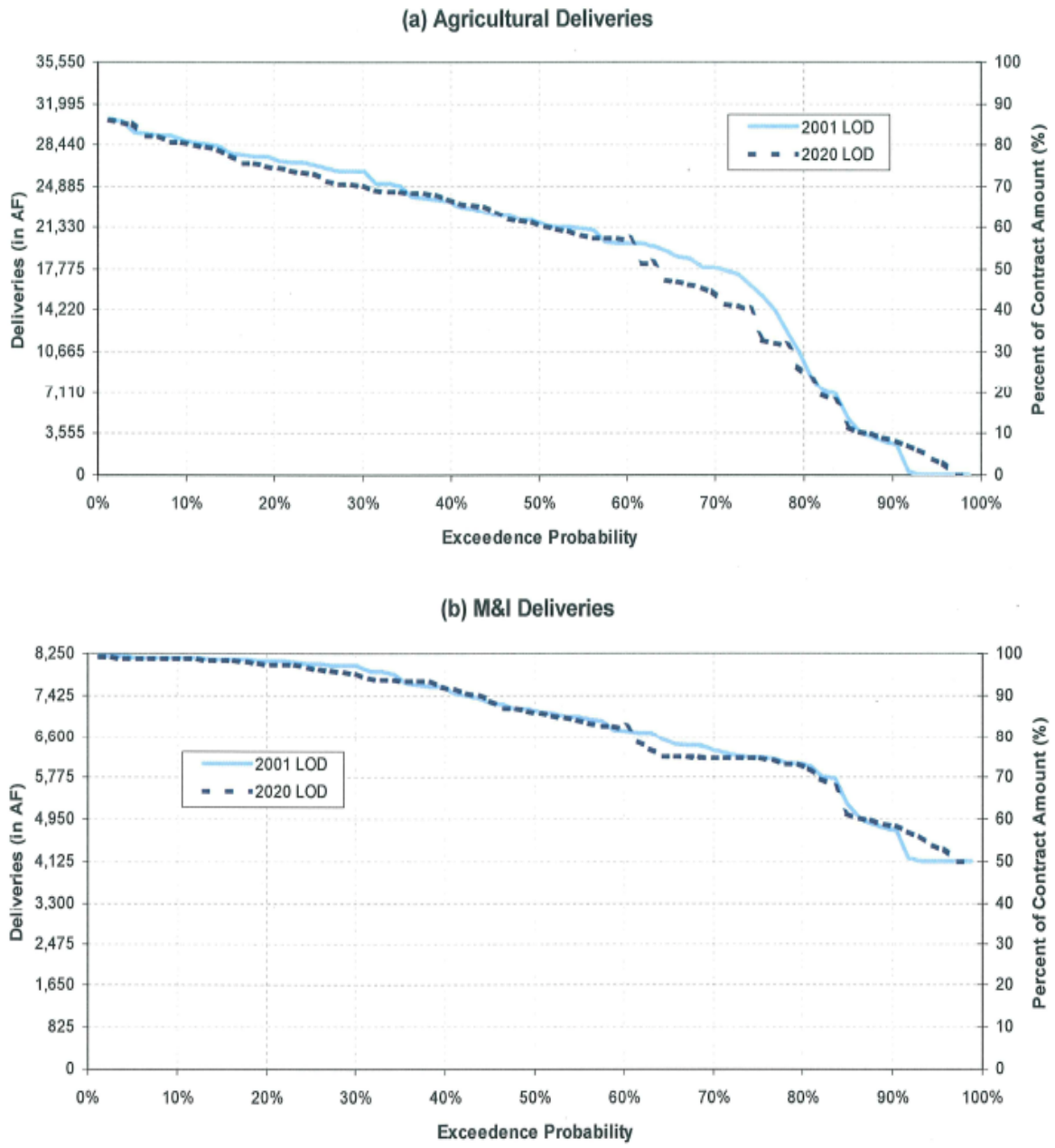
Conduit is a component of the San Felipe Division of the CVP. Water conveyed from the San Luis Reservoir to the Hollister Urban Area is diverted through the 1.8 mile long Pacheco Tunnel Reach 1 to the Pacheco Pumping Plant. At the pumping plant, the water is lifted to the 5.3-mile long high-level section of the Pacheco Tunnel Reach 2. Water flows through the tunnel and through the Pacheco Conduit to the bifurcation of the Santa Clara and Hollister Conduits. The Santa Clara Conduit conveys Santa Clara Valley Water District's CVP allocation north to its service area.

Imported surface water is conveyed through the Hollister Conduit to the Hollister Urban Area. The Hollister Conduit is a pressurized pipeline consisting of 60-inch and 42-inch diameter pipeline. The Hollister Conduit has a design capacity of 83 cfs and extends approximately 19.5 miles from the bifurcation with the Santa Clara Conduit to the terminus at San Justo Reservoir. San Justo Reservoir is located south of the City of Hollister and has a storage capacity of 10,300 af. Imported water is delivered to agricultural, municipal, and industrial customers in the Pacheco, Bolsa Southeast, San Juan, Hollister East, Hollister West, and Tres Pinos Subbasins which comprise Zone 6 as shown in Figure 2-2. Water is delivered through 120 miles of pressurized laterals and has also historically been released at controlled rates to local creeks and the San Benito River. Releases for groundwater recharge have diminished in recent years due to the widespread recovery of groundwater levels. Zebra mussels, an invasive species, were discovered in San Justo reservoir in January 2008. The SBCWD is working with the USBR, the Department of Fish and Game, the County and Santa Clara Valley Water District (SCVWD) to develop a plan to mitigate the zebra mussels.

As a result of over-commitments of CVP supplies and supply limitations imposed by environmental constraints, the reliability of imported CVP supplies has been reduced. The USBR utilizes a Shortage Policy to allocate supplies in below normal, dry, and critical years. In 2003, the SBCWD completed an independent review of the reliability of imported CVP surface water supplies. The results of that independent review are presented in Figure 2-4. The results of that review indicate that in critically dry years, agricultural deliveries may be reduced to less than 20 percent of contract allocations and M&I supplies may be reduced to approximately 60 percent of contract allocations. In multiple dry year conditions, agricultural supplies may not be available and M&I supplies may be reduced to 50 percent.

Figure 2-4

Exceedence Probability of Simulated CVP Deliveries to the San Benito County Water District (OCAP Study, June 2003)



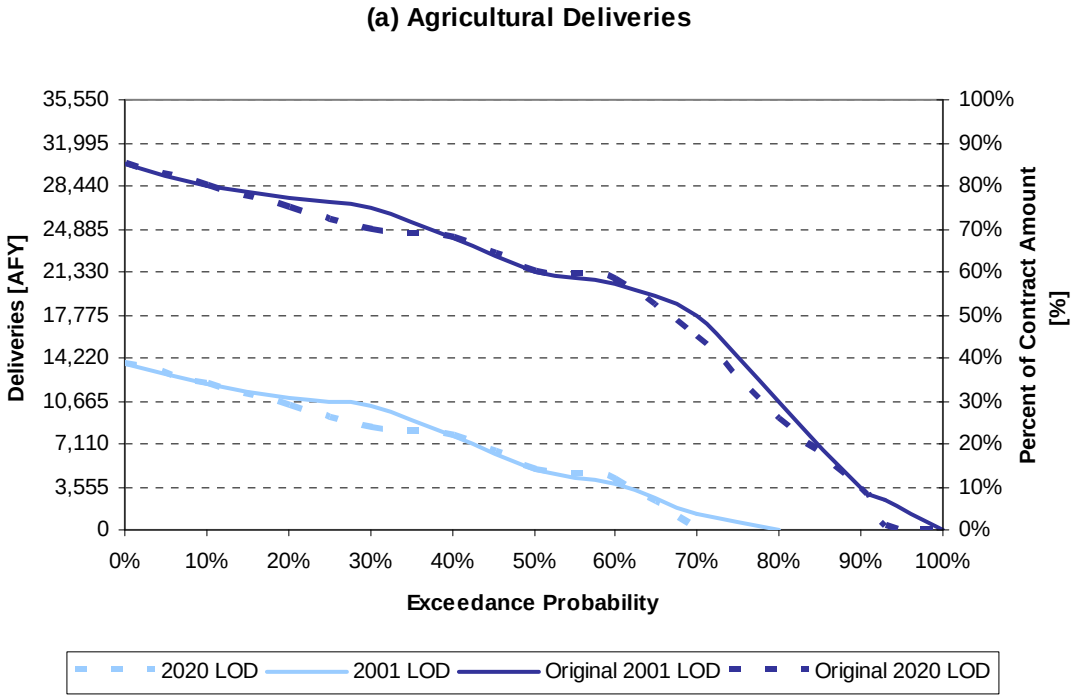
Notes:
OCAP = Operations Criteria and Plan
LOD = Level of Development

Since the 2003 reliability analysis, two significant developments have occurred, as reported by the DWR's Final State Water Project Delivery Reliability Report, 2007. The first is the realization that climate change is altering hydrologic conditions in the State. The second is the December 2007 final federal court order to set new rules that will protect the delta smelt, a rare fish found only in the Sacramento-San Joaquin River Delta. The order followed an August 2007 decision to reduce pumping from the delta for at least one year while state and federal agencies prepare a new biological opinion regarding the impacts of Delta pumping on the delta smelt. The decision resulted in a significant curtailment of water deliveries for both the State Water Project (SWP) and the CVP, underscoring the fragility and unreliability of the Delta as a major water supply source for California.

Following the December 2007 federal court order, the DWR conducted a reliability analysis and updated the State Water Project Delivery Reliability Report. The analysis found that SWP deliveries would decrease in 93% of future years and highlighted that reductions would amount to a 20% reduction from current levels one in four years and greater than a 30% reduction in one in six years. Although these findings are specific to SWP deliveries, they are likely indicative of future CVP deliveries as well.

Based on these changes, the reliability of imported CVP surface water supplies for SBCWD was updated. The updated exceedance probability curves, presented in Figure 2-5, are based on the assumption that the maximum delivery will be based on historic use, a figure agreed upon with the USBR. For M&I supply, SBCWD's historic use has been set at 6,966 af/yr, which is based on usage in 2002, 2003 and 2005, and includes water transfers. For agricultural supply, the historic use has been set at 19,134 af/yr.

The results of the exceedance probability update indicate that in critically dry years, agricultural deliveries may be reduced to nothing and M&I supplies may be reduced to less than 50 percent of contract allocations. In multiple dry year conditions, M&I supplies may be reduced to one third of the contract allocation.



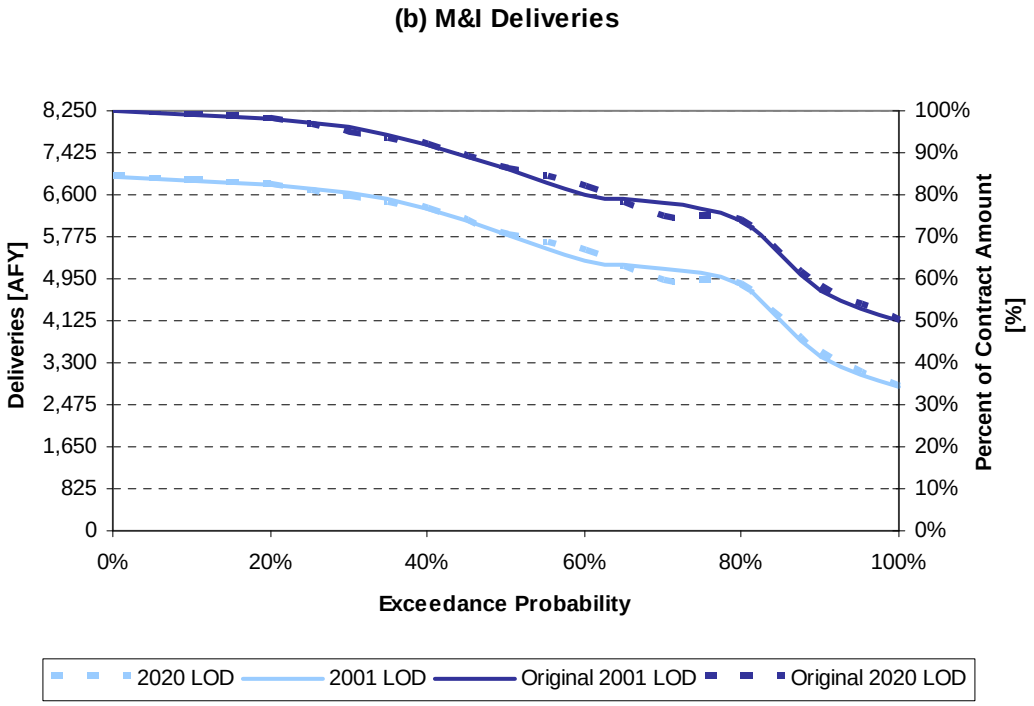


Figure 2-5: Updated Exceedance Probability of Simulated CVP Deliveries to San Benito County Water District

On an annual basis, the SBCWD allocates CVP supplies to local customer accounts. The steps in this allocation process are as follows:

- The SBCWD has established entitlements to contract for San Felipe Distribution System Water from the District. The entitlements to contract are established by the action of the District Board of Directors and are based on the use distinctions of the District's CVP Water Supply Contract: Irrigation or Agricultural and Municipal and Industrial. Under the terms of the CVP Contract, all water use not meeting the specific terms for irrigation are classed as municipal and industrial. The District further divides its users into five types of customers:
  - Agricultural, Monthly
  - Agricultural, Small User
  - Domestic, Monthly
  - Domestic, Small User
  - Municipal, Monthly

  The current total entitlement for all accounts is 37,955 af/yr (28,192 af/yr irrigation and 9,763 af/yr M&I).
- Every year, each user submits a request to SBCWD for the quantity of water required.
- The SBCWD makes an allocation to each user based upon water supply availability. CVP supply plus carry-over storage and other supplies are available as determined by the District. If the allocation is 50 percent or less of the amount requested, the issue is referred to the SBCWD Board of Directors for resolution.

2.2 City of Hollister Water Facilities

The Hollister Water Company was established in 1890 to provide drinking water to the residents of Hollister using shallow wells. In 1895 the water company began importing water from wells in Cienega Valley Springs. The City bought the water company in 1945 and the City's first deep well was drilled in 1928. Unlike the high quality of water coming from Cienega Valley, the water produced by the deep wells is relatively hard with high mineral content.

The City of Hollister water facilities distribute drinking water to the City's service area as shown in Figure 2-6. The major facilities are shown in Figure 2-7 and in more detail in Exhibit II at the end of this report.

2.2.1 Groundwater Wells

The City has eight groundwater wells, Wells 1 through 6 and Cullum Wells 1 and 2. Cullum Wells No. 1 and No. 2 are in Cienega Valley (south of the Study Area). Well No. 1 is inactive due to the presence of high levels of nitrate. Well No. 6 has problems with pumping sand and water quality issues.

A summary of well pressure ranges and pumping rates is presented in Table 2-2. Operation of Wells No. 2 through 6 is controlled by the Park Hill and Fairview Road Reservoirs water levels. These reservoirs are located in the low and middle pressure zones, respectively. Pump start and stop times for Wells No. 2 through 5 are based on Park Hill Reservoirs levels whereas Well No. 6 pump start and stop times are based on the Fairview Road Reservoir levels.

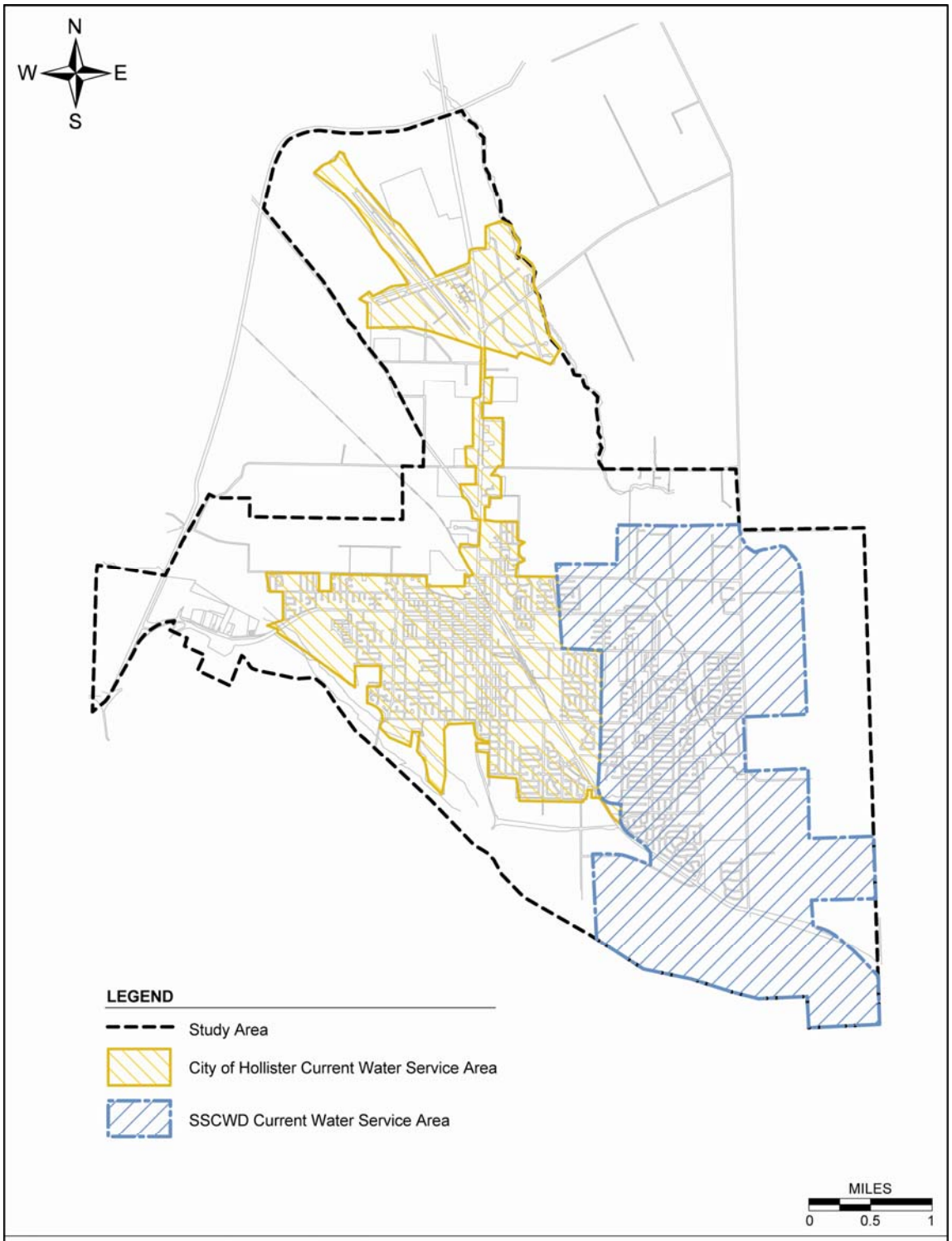
Power outages occur frequently in the Hollister area especially during the summer when water demands are at their peak. These power outages may last up to two hours or longer. To ensure that the water system is capable of providing an adequate level of service during power outages, standby power is required. Wells No. 3, 4 and 5 are equipped with standby power. The City also has portable generators to supply emergency power the other active wells.

Table 2-2: City of Hollister Wells

City of Hollister Wells	Well Pressure Ranges (psi)		Maximum Pumping Rate (gpm)
	Minimum	Maximum	
Well No. 1 San Felipe (Inactive)	50	90	2,400
Well No. 2 Bundeson	38	62	1,425
Well No. 3 Fallon	45	98	930
Well No. 4 South	50	85	1,670
Well No. 5 Nash	40	65	1,825
Well No. 6 Airline	75	110	435
Cullum No.1	13.2	36	<90
Cullum No.2	13.2	36	<90

psi – pounds per square inch

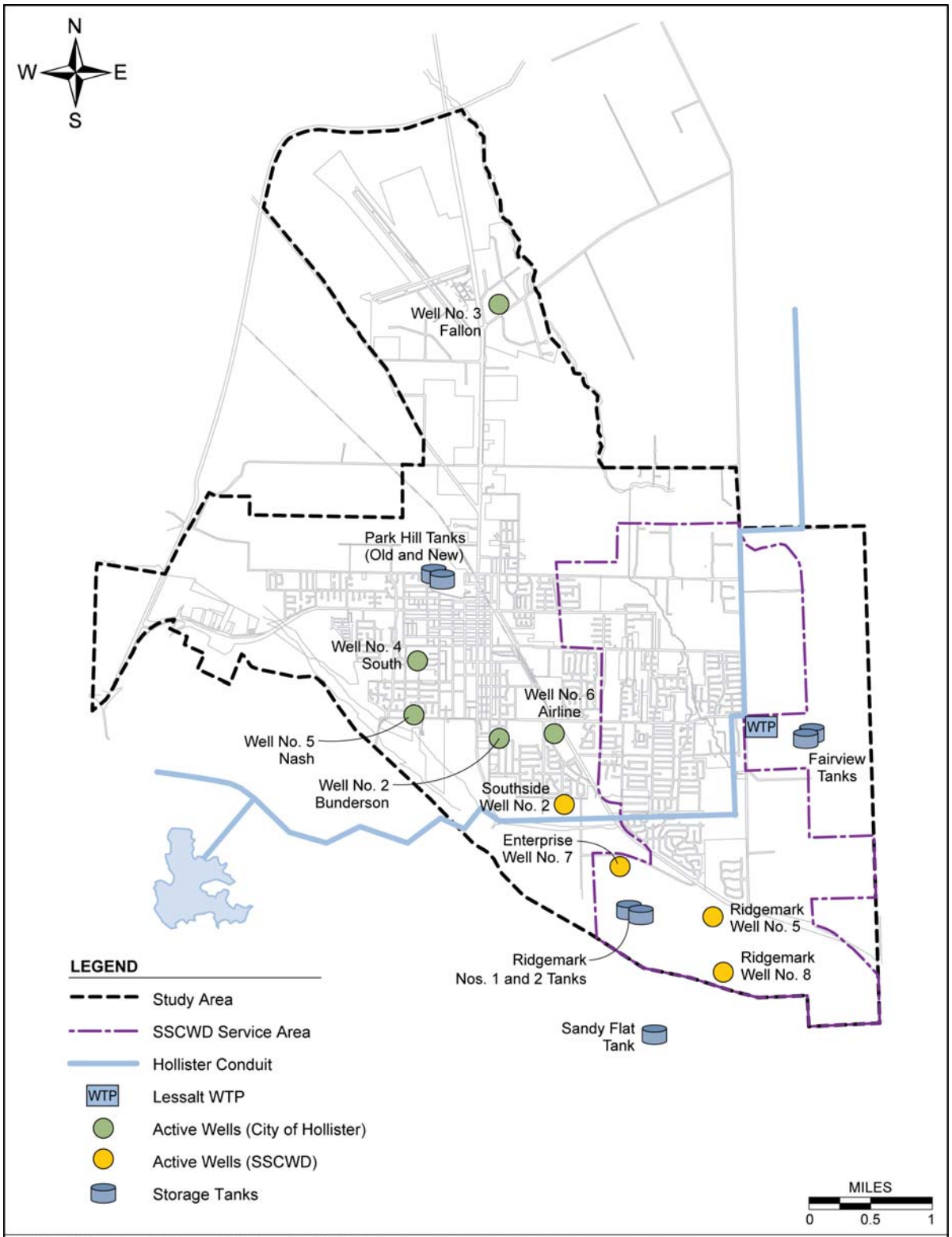
gpm – gallons per minute



Hollister Urban Area Water and Wastewater Master Plan

Water Service Areas

Figure 2-6



Hollister Urban Area Water and Wastewater Master Plan

Major Existing Water Facilities

Figure 2-7

2.2.2 Lessalt Water Treatment Plant

The Lessalt Water Treatment Plant (WTP), a jointly-owned facility between the City and the SSCWD, was placed into operation in January 2003. The plant, shown in Photograph 2-1, was designed to treat imported CVP water using microfiltration and chlorine disinfection as shown in the process schematic in Figure 2-8. The treated water is distributed to both City and SSCWD customers.

Photograph 2-1: Lessalt Water Treatment Plant

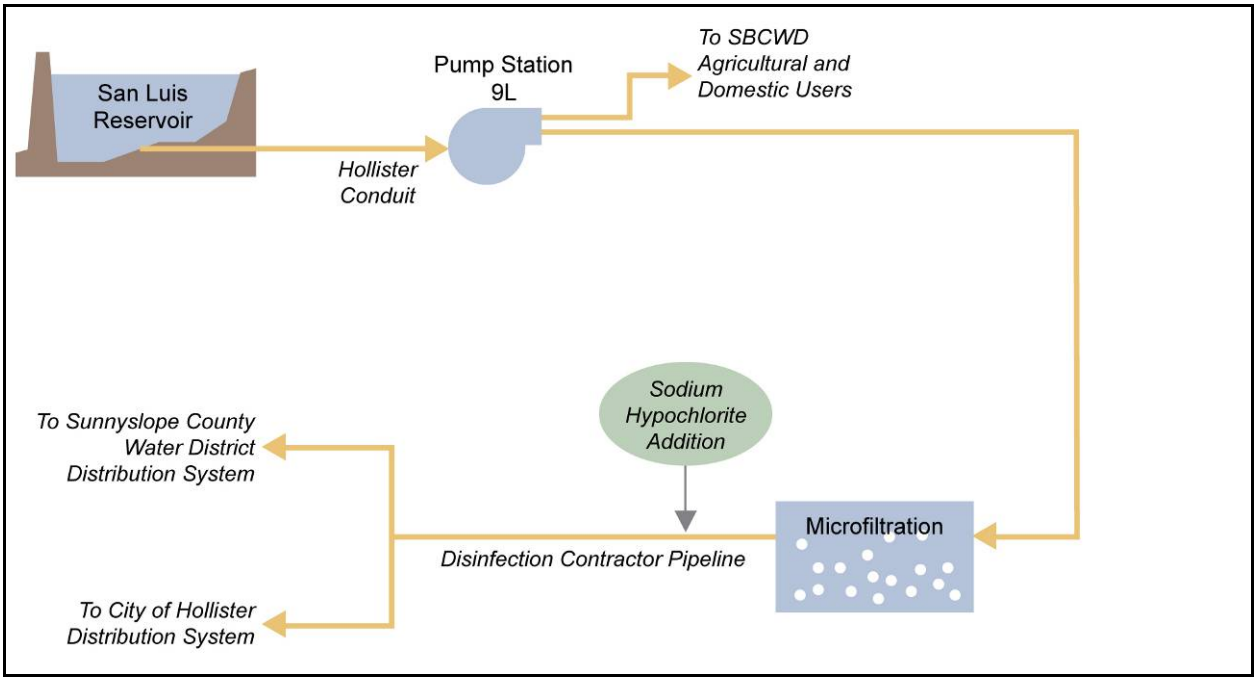


Figure 2-8: Lessalt WTP Existing Process

The Lessalt WTP was constructed to provide replacement water for groundwater and improve water quality. The CEQA review for this facility consisted of a Mitigated Negative Declaration, which stated that the Lessalt WTP was not intended to be used for new growth. As presented in the project description, wells would continue to be operated to meet peaks and maximum day demands. The City and SSCWD had programmed needs for additional water supply capacity or replacement wells. The Lessalt WTP was intended to defer the need for two new wells and provide a higher quality water with a lower mineral content.

The plant was designed with a rated capacity of 3.0 mgd capable of treating 3,360 ac-ft of imported CVP supply annually. However, in 2005 the Lessalt WTP treated only 2,375 ac-ft, or approximately 2.1 mgd on an annual average basis. Since the plant was placed in service in 2003, it has been unable to achieve its design capacity due to hydraulic constraints and treated water capacity issues related to the Stage 2 Disinfectant/Disinfection Byproducts Rule (Stage 2 D/DBP). In order to resolve these issues, the City and SSCWD have completed the Predesign Report for the Disinfection Byproduct Project (Kennedy/Jenks, Draft, May 2006).

The addition of a booster pumping station and hydropneumatic tank is recommended as part of the Disinfection Byproduct Reduction Project to eliminate the hydraulic constraints. Once installed, this pumping station will provide the ability to operate the Lessalt WTP at its rated capacity of 3.0 mgd.

The project also includes the addition of potassium permanganate and coagulant for water quality improvements. The proposed improvements to the Lessalt WTP are shown in the process schematic in Figure 2-9.

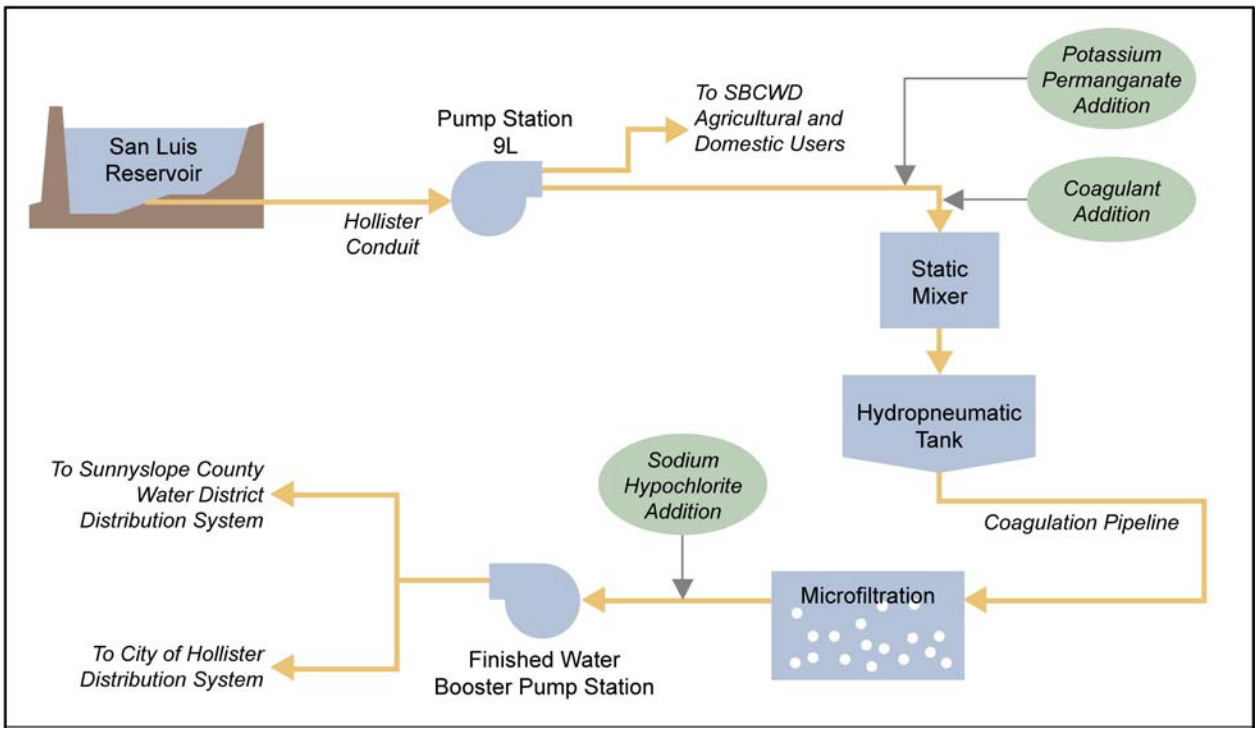


Figure 2-9: Lessalt WTP Proposed Improvements

2.2.3 Storage Reservoirs

The City has four storage reservoirs for a total capacity of 8.2 million gallons (mgal) as shown in Table 2-3. The Fairview Road Tanks shown in Photograph 2-2 consist of two tanks with a total capacity of 2.0 mgal. The facility is equally shared between the City and SSCWD with each agency having 1.0 mgal of storage. The Sandy Flat Tank is located in Cienega Valley (south of the Study Area).

Table 2-3: City of Hollister Storage Reservoirs

Storage Reservoirs	Capacity (mgal)	Overflow Elevation (ft above MSL)	Base Elevation (ft above MSL)	Diameter (feet)
Fairview Road Tanks	1.0[(a)]	550	515	100
Park Hill (Old)	2.2	425	383	95
Park Hill (New)	4.5	460	383	135
Sally Flat (Cienega)	0.5	460	400	37.7
Total	8.2			

[(a)] Fairview Road Tanks have a total capacity of 2 mgal with 1 mgal allocated to the City and to SSCWD.

Photograph 2-2: Fairview Road Tanks

2.2.4 Pressure Reducing Pressure Sustaining Stations

Pressure reducing pressure sustaining (PRPS) stations are used to maintain water pressure for supplemental flows during periods of peak demand. The City currently has two PRPS stations; one in the high pressure zone and one in the low pressure zone. Table 2-4 provides data for the City's PRPS stations.

Table 2-4: City of Hollister Pressure Reducing Pressure Sustaining Stations

PRPS Name	Downstream Pressure Zone	Size (inches)	Downstream Pressure (psi)	Elevation (ft above MSL)
Memorial Booster Pump Station/ PRPSV	Low	4	56	298
PRV at Sunset	Low	8	38	332
Santa Ana PRPSV	High	8 and 2	64 psi	282

2.2.5 Transmission and Distribution

Together, the City and SSCWD have over 128 miles of water mains for transmission and distribution. Exhibit II provides a map of the transmission and distribution pipelines as well as the three existing City/SSCWD connections. Most of these pipelines were installed in the 1960s.

Table 2-5 and Table 2-6 show the distribution of water mains by diameter and length and by location. A hydraulic profile of the distribution system is presented in Figure 2-10.

Table 2-5: Lengths of Water Mains by Diameter (City of Hollister and SSCWD)

Diameter (inches)	Length (feet)	Length (miles)
4	13,030	2.5
6	73,180	13.9
8	376,065	71.2
10	695	0.1
12	200,430	38.0
14	7,330	1.4
16	9,270	1.8
Total (rounded)	680,000	130

Table 2-6: Lengths of Water Mains by Pressure Zone (City of Hollister and SSCWD)

Zone	Length (feet)	Length (miles)
Low	328,620	62.2
Middle	265,770	50.3
High	85,625	16.2
Total (rounded)	680,000	130

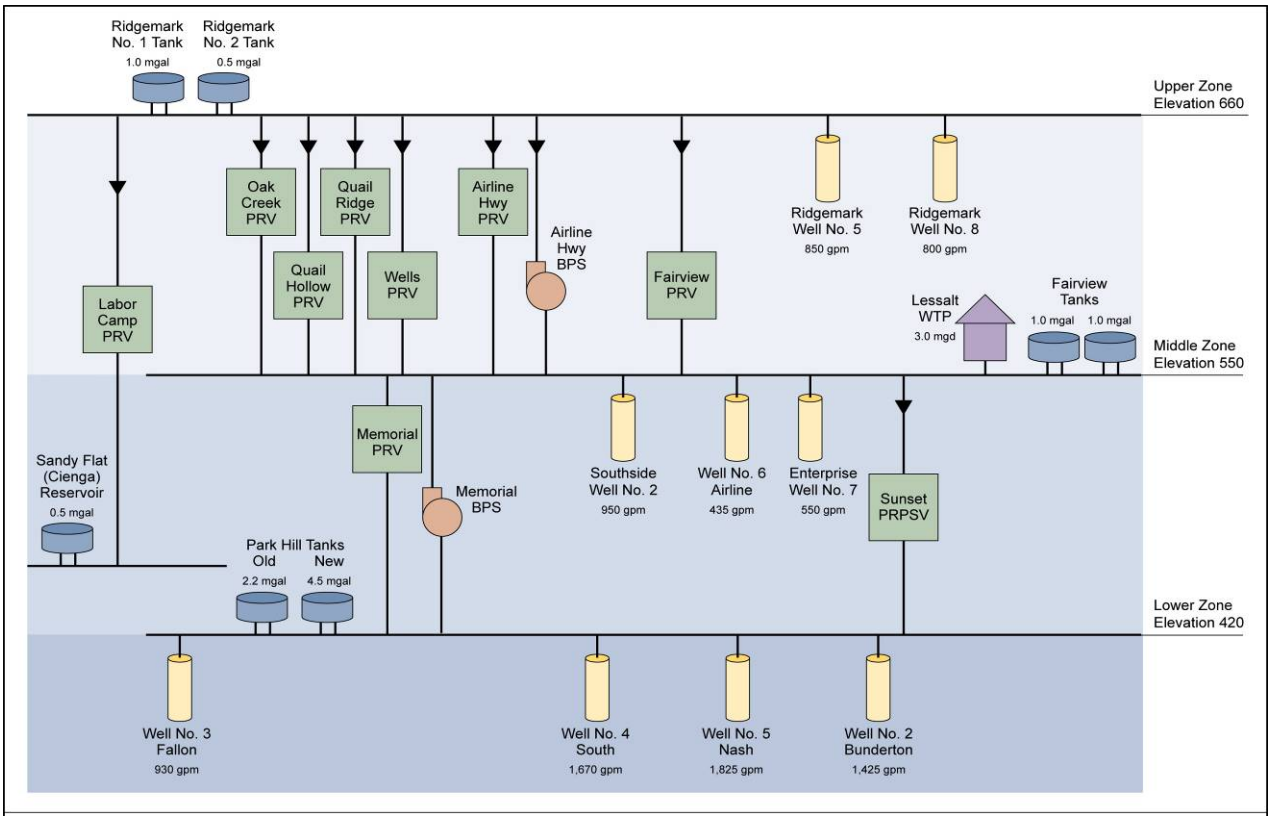


Figure 2-10: Water Distribution System Hydraulic Profile

The City of Hollister and SSCWD maintain a close interrelationship due to service area proximity and configuration of the low and middle pressure zones. There are three connection points within the SSCWD system that are tied to the City's water distribution system. The following connections allow the transfer of metered water flows between the two systems:

- Intersection of Hillcrest Road and Memorial Drive
- Intersection of Sunnyslope Road and Memorial Drive
- Intersection of Sunset Drive and Memorial Drive

Water can be transferred in either direction at the Memorial Booster Pump Station located on Hillcrest Road. However, water can only be transferred from the SSCWD to the City's system at the other two locations.

2.3 Sunnyslope County Water District Water Facilities

The following subsections provide descriptions of existing facilities which distribute treated water to the SSCWD service area.

2.3.1 Groundwater Wells

The SSCWD has a total of four groundwater wells. A summary of well pressure ranges and pumping rates is presented in Table 2-7.

2.3.2 Storage Reservoirs

The SSCWD has three reservoirs for a total capacity of 2.5 mgal. Table 2-8 provides an inventory of the SSCWD's water storage capacity. As previously described, the Fairview Road Tanks are an equally shared between the City and SSCWD; each agency has 1.0 mgal of capacity in Fairview Road Tanks.

Table 2-7: SSCWD Wells

SSCWD Wells	Well Pressure Ranges (psi)		Maximum Pumping Rate (gpm)
	Minimum	Maximum	
Southside Well No. 2	85	99	950
Ridgemark Well No. 5	83	94	850
Enterprise Well No. 7	80	93	550
Ridgemark Well No. 8	63	76	800

Table 2-8: SSCWD Storage Reservoirs

Storage Reservoirs	Capacity (mgal)	Overflow Elevation (feet above MSL)	Base Elevation (feet above MSL)	Diameter (feet)
Fairview Road Tanks	1.0[(a)]	550	515	100
Ridgemark No. 1	1.0	660	625	70
Ridgemark No. 2	0.5	460	625	45
Total	2.5			

[(a)] Fairview Road Tanks have a total capacity of 2 mgal with 1 mgal allocated to the City and to SSCWD.

2.3.3 Pressure Reducing Pressure Sustaining Stations

The SCWD has seven PRPS stations within its water service area, primarily in the low pressure zone. Data for these PRPS stations is summarized in Table 2-9.

2.4 Required Water System Improvements

Improvements to the existing water facilities within the Hollister Urban Area are required to address existing treated water storage deficiencies and regulatory requirements. These improvements will provide a level of service consistent with industry standards.

Table 2-9: SSCWD Pressure Reducing Pressure Sustaining Stations

PRPS Name	Downstream Pressure Zone	Size (inches)	Downstream Pressure (psi)	Elevation (feet above MSL)
Fairview PRPSV	Middle	6	48	460
Airline Booster Pumping Station / PRPSV	Middle	6 and 1-1/2	41	400
Quail Ridge PRPSV	Middle	6 and 2	48	435
Well No. 5 PRPSV	Middle	6 and 2	35	431
Quail Hollow PRPSV	Middle	6 and 2	35	430
Oak Creek PRPSV	Middle	6 and 2	35	430
Labor Camp PRPSV	Low - Cienega	6 and 2	36	335
Santa Ana PRPSV	Low	8 and 2	64	282

2.4.1 Existing Storage Deficiency

Public water systems are required to provide sufficient storage to meet any seasonal or diurnal variations in demand, fire flows, and emergency demands such as power outages and equipment failures. This Master Plan used operational, emergency reserve, and fire protection

storage guidelines as criteria for determining recommended treated water storage requirements. The criteria used for the storage calculations are defined in more detail in Appendix G and Chapter 7.

In addition to storage volume, treated water reservoirs in California must meet seismic design criteria to ensure they can provide the required level of service. Based upon information from the City and SSCWD, all existing treated water storage reservoirs have been designed or retrofitted to meet current seismic design criteria.

The storage evaluation indicates that the existing system is currently deficient in treated water storage. In evaluating the storage within the distribution system, there is a disproportionately high volume of storage in the Low Pressure Zone. This is problematic since storage located within the Low Pressure Zone is not available by gravity to the Middle or High Pressure Zones. Analysis of storage requirements indicates that a minimum of 2.6 million gallons of additional storage should be added to the Middle and High Pressure Zones to meet short-term needs. Table 7-5 of Chapter 7 shows that this is the minimum storage addition required through 2013.

2.4.2 Regulatory Requirements

Current drinking water regulations are in place to ensure that drinking water is free of harmful levels of microbes, contains minimal disinfection byproducts, and does not contain excess levels of organic or inorganic contaminants. All municipalities must continuously monitor their compliance with drinking water regulations. Understanding regulatory requirements is essential in developing a comprehensive and successful long-term plan for water supply and treatment.

For a treatment plant to remain in compliance, certain monitoring and reporting, treatment, and water quality standards must be met. Municipalities are also required to produce annual summary Consumer Confidence Reports (CCRs). The reports provide valuable data on each drinking water source and all levels of contaminants found. The most recent CCRs for the City and SSCWD were published in 2005.

Table 2-10 summarizes the regulations of concern within the Hollister Urban Area, based on 2005 Consumer Confidence Reports for both the City and SSCWD. Some of the rules regulate contaminants by setting maximum contaminant levels (MCLs), while others require specific treatment technologies. All regulations apply to surface water supplies or to sources that are

determined to be groundwater under the direct influence (GWUDI) of surface water. True groundwater supplies are subject to the same rules as surface water, except for the Surface Water Treatment Rule (SWTR), the Interim Enhanced Surface Water Treatment Rule (IESWTR), and the future Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). The State of California retains primacy for enforcement of drinking water regulations. For some rules, the California has adopted regulations that are more stringent than federal regulations.

Specific improvements for the Lessalt WTP were described in a previous subsection. The proposed process improvements at the Lessalt WTP are required to meet the Stage 2 D/DBP Rule.

Table 2-10: Summary of Applicable Regulations and Compliance Status

Regulation	Summary	Required Compliance Date	City of Hollister (City)			Sunnyslope County Water District (SSCWD)		
			Status	Compliance?	Recommendations	Status	Compliance?	Recommendations
Surface Water Treatment Rule (SWTR)	Utilities are required to achieve minimum 3-log removal and/or inactivation of *Giardia* and 4-log removal and/or inactivation of viruses. Treated water turbidity less than 0.5 NTU for 95% samples and never exceed a maximum of 5 NTU. California Department of Health Services (DHS) requires treated water turbidity less than 0.2 NTU for 95% samples. (Turbidity requirements are superseded by new turbidity limits set by IESWTR)	1989	City/SSCWD operates the Lessalt WTP in a manner to meet removal requirements.	Yes	Continue with existing treatment and monitoring.	SSCWD/City operates the Lessalt WTP in a manner to meet removal requirements.	Yes	Continue with existing treatment and monitoring.
Total Coliform Rule (TCR)	No more than 5% positive total coliform samples in a distribution system each month.	1990	City conducts required monitoring.	Yes	Update Total Coliform Monitoring Plan to reflect estimated population served.	SSCWD conducts required monitoring.	Yes	Update Total Coliform Monitoring Plan to reflect estimated population served.
Lead and Copper Rule	90% of all samples at customer's tap must have lead levels equal or less than 0.015 mg/L and copper levels equal or less than 1.3 mg/L, respectively. If these action levels can not be met, system must implement public education and a corrosion control treatment strategy for meeting these levels.	1992	City conducts customer tap sampling.	Yes	Continue sampling for lead and copper at customer's tap per plan.	SSCWD conducts customer tap sampling.	Yes	Continue sampling for lead and copper at customer's tap per plan.
Consumer Confidence Report (CCR) and Public Notification Rules	Yearly summary report-CCR on water system must be sent to all customers by July of each year.	April 1999	Consumer Confidence Reports published annually.	Yes	Provide annual report to wholesale customers by April 1 of each year. Provide annual report to retail customers and DHS by July 1 of each year. Certify report information before October 1 of each year.	Consumer Confidence Reports published annually.	Yes	Provide annual report to wholesale customers by April 1 of each year. Provide annual report to retail customers and DHS by July 1 of each year. Certify report information before October 1 of each year.
Interim Enhanced Surface Water Treatment Rule (IESWTR)	Sanitary Survey once every 3 years; System must have specific records on file. 2-log *Cryptosporidium* removal. For membrane filtration systems, DHS requires 0.1 NTU individual filter effluent and CFE 95% of the time. Disinfection profile if TTHM > 64 µg/l or HAA5 > 48 µg/l.	Jan 2002	City conducted survey as required. Continuous monitoring at the Lessalt WTP. TTHM < 64 µg/l HAA5 < 48 µg/l.	Yes	Continue with existing monitoring.	SSCWD conducted survey as required. Continuous monitoring at the Lessalt WTP. TTHM < 64 µg/l HAA5 < 48 µg/l.	Yes	Continue with existing monitoring.
Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1D/DBPR)	TTHM/HAA5 ≤ 80/60 µg/l (Running annual averages). Chlorine and Chloramines residual maximum = 4.0 mg/L. TTHM/HAA5 compliance monitoring (4 samples per plant per quarter). For conventional systems, TOC Removal 15-50%, depending on raw water TOC and alkalinity, OR meet alternative compliance criteria.	Jan 2002	Monitors at four distribution system locations quarterly, has levels below MCL, and has developed a plan.	Yes	Continue with existing monitoring.	Monitors at four distribution system locations quarterly, has levels below MCL, and has developed a plan.	Yes	Continue with existing monitoring.

Regulation	Summary	Required Compliance Date	City of Hollister (City)			Sunnyslope County Water District (SSCWD)		
			Status	Compliance?	Recommendations	Status	Compliance?	Recommendations
Filter Backwash Recycling Rule	Notify State in writing regarding recycle practices: plant schematic, typical flows. Return all recycle flows to the head of the plant. Maintain records: Recycle notification, recycle flows, backwash flow rates, filter run lengths, recycle treatment, and design data.	Dec 2003	The City/SSCWD's membrane backwash water receives treatment. The City maintains related membrane performance data.	Yes	Continue with existing monitoring.	The SSCWD/City's membrane backwash water receives treatment. SSCWD maintains related membrane performance data.	Yes	Continue with existing monitoring.
Phase I, II, V Rules	Rules set monitoring requirements and MCLs for 16 inorganic (IOC), 30 synthetic (SOC), and 21 volatile organic contaminants (VOC).	1989-1993	Conducted required monitoring.	Yes	Continue with existing monitoring.	Conducted required monitoring.	Yes	Continue with existing monitoring.
Radionuclide Rule	Rule sets MCLs for radioactive contaminants: Beta/photon emitters $\leq$ 4 mrem/hr; Alpha emitters $\leq$ 15 pCi/L; Combined radium $\leq$ 5 pCi/L; Uranium $\leq$ 30 µg/L.	Dec 2003	City conducted gross alpha monitoring.	Yes	Monitor per requirements established by DHS.	SSCWD conducted gross alpha monitoring.	Yes	Monitor per requirements established by DHS.
Arsenic Rule	Set new MCL for arsenic $\leq$ 10 µg/L.	Jan 2006	Conducted required monitoring.	Yes	Continue with existing monitoring.	Conducted required monitoring.	Yes	Continue with existing monitoring.
Stage 2 Disinfectant and Disinfection Byproducts Rule (Stage 2 D/DBPR)	Initial Distribution System Evaluation (IDSE) requiring sampling based on population served. TTHM/HAA5 $\leq$ 80/60 µg/l as LRAA at new sampling sites (Stage 2)	2008-2010 (IDSE) 2013 (Stage 2)	The City is in the process of conducting IDSE.	NA	Finish IDSE study and get ready for monitoring at new sampling site. Implement recommended DBP Reduction Project at the Lessalt WTP.	SSCWD is in the process of conducting IDSE.	NA	Finish IDSE study and get ready for monitoring at new sampling site. Implement recommended DBP Reduction Project at the Lessalt WTP.
Long Term 2 Enhanced Surface Water Treatment Rule (LT2 ESWTR)	Two years (24 months) worth of source water *Cryptosporidium* monitoring for assignment of Bin classification (starting 2008). *Giardia*/virus inactivation profiling. Possible additional log treatment for *Cryptosporidium* depending on Bin classification (by 2013) (options include UV disinfection or membranes)	2010 (Crypto Bin) 2013 (Treatment Technique)	The City is aware of this new rule and will conduct the required monitoring for Bin classification starting 2008.	NA	Get ready for the required monitoring and possible additional treatment if needed.	SSCWD is aware of this new rule and will conduct the required monitoring for Bin classification starting 2008.	NA	Get ready for the required monitoring and possible additional treatment if needed.
Ground Water Rule	Disinfection compliance monitoring for 4-log removal of viruses. Sanitary survey every 3 years.	Late 2009	The City will conduct the required monitoring and sanitary survey beginning 2009.	NA	Get ready for the required monitoring and survey.	SSCWD will conduct the required monitoring and sanitary survey beginning 2009.	NA	Get ready for the required monitoring and survey.

3.0 Existing Wastewater Facilities

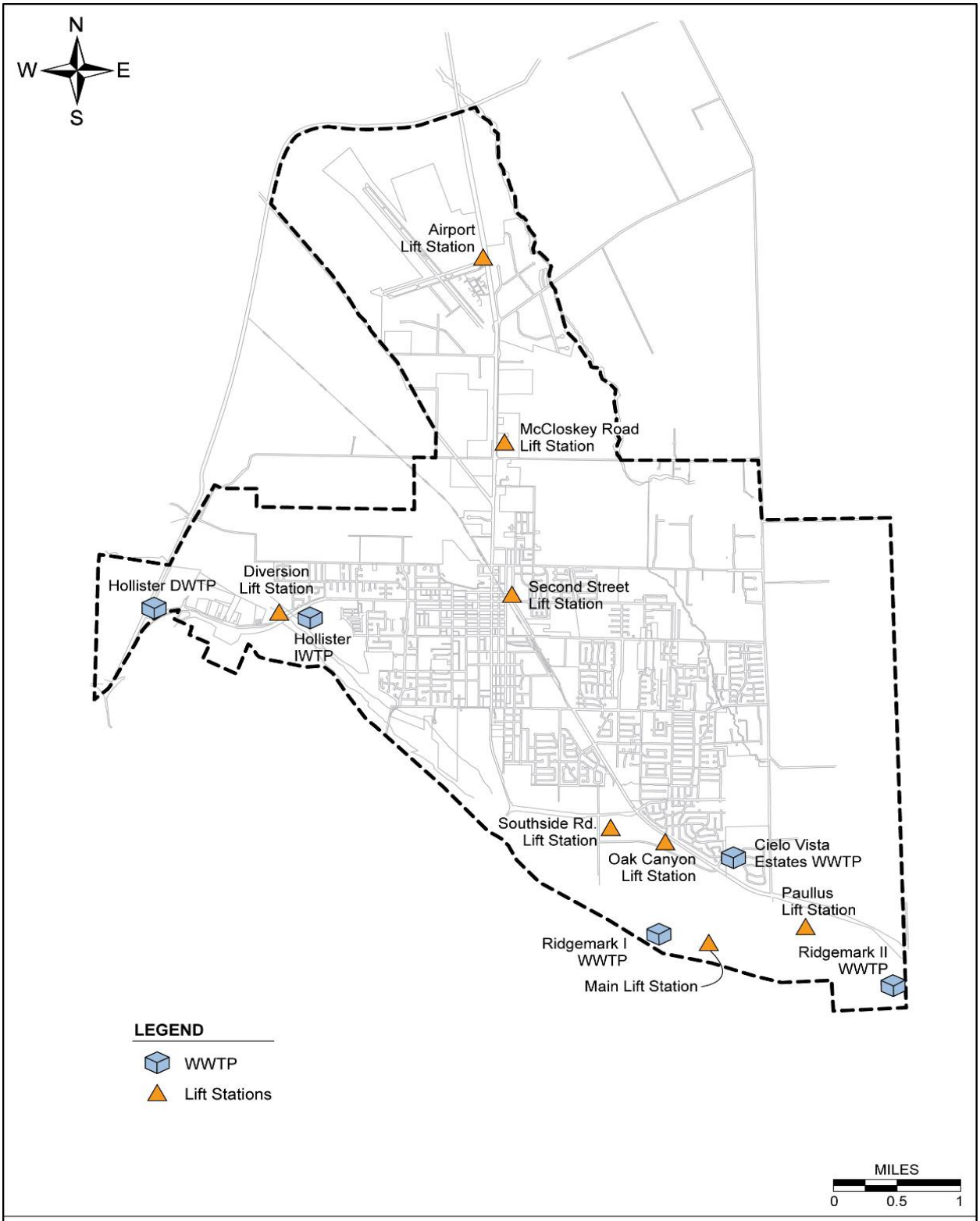
This chapter provides an overview of the existing wastewater facilities in the Hollister Urban Area, including the collection systems, treatment facilities, and disposal facilities. Five wastewater treatment plants treat the domestic, commercial, and industrial wastewater flows generated within the Hollister Urban Area. The existing wastewater facilities are owned by three separate agencies, the City of Hollister, SSCWD, and San Benito County (Cielo Vista Estates Wastewater Treatment Plant). The facility descriptions are included below and are organized by agency. The locations of these wastewater treatment plants are shown in Figure 3-1. The wastewater service areas for the City and SSCWD are shown in Figure 3-2.

3.1 City of Hollister Wastewater Facilities

The City owns and operates the domestic wastewater treatment plant (DWTP) located south of the San Benito River. The DWTP was built in 1979 to treat the City's domestic wastewater, consisting predominantly of residential and commercial customers within the City's service area. Currently, the DWTP is operating at capacity. Projected population growth and improved treatment quality are the major drivers for the upgrade and expansion of the facility.

The City also owns and operates the industrial wastewater treatment plant (IWTP) that serves the City of Hollister. The IWTP treats seasonal industrial wastewater and storm water from the downtown area. The IWTP is located west of downtown Hollister at the west end of South Street and on the north side of the San Benito River less than a mile east of the DWTP. Built in 1971, the IWTP served two canneries until 1992, when one of the canneries discontinued operation. San Benito Foods is currently the only remaining industrial discharger to the IWTP and discharges tomato cannery wastewater during the summer and early fall. The City has received permission from the RWQCB to temporarily divert excess domestic wastewater from the DWTP to the IWTP to leverage additional treatment and disposal capacity available when the cannery is not discharging wastewater.

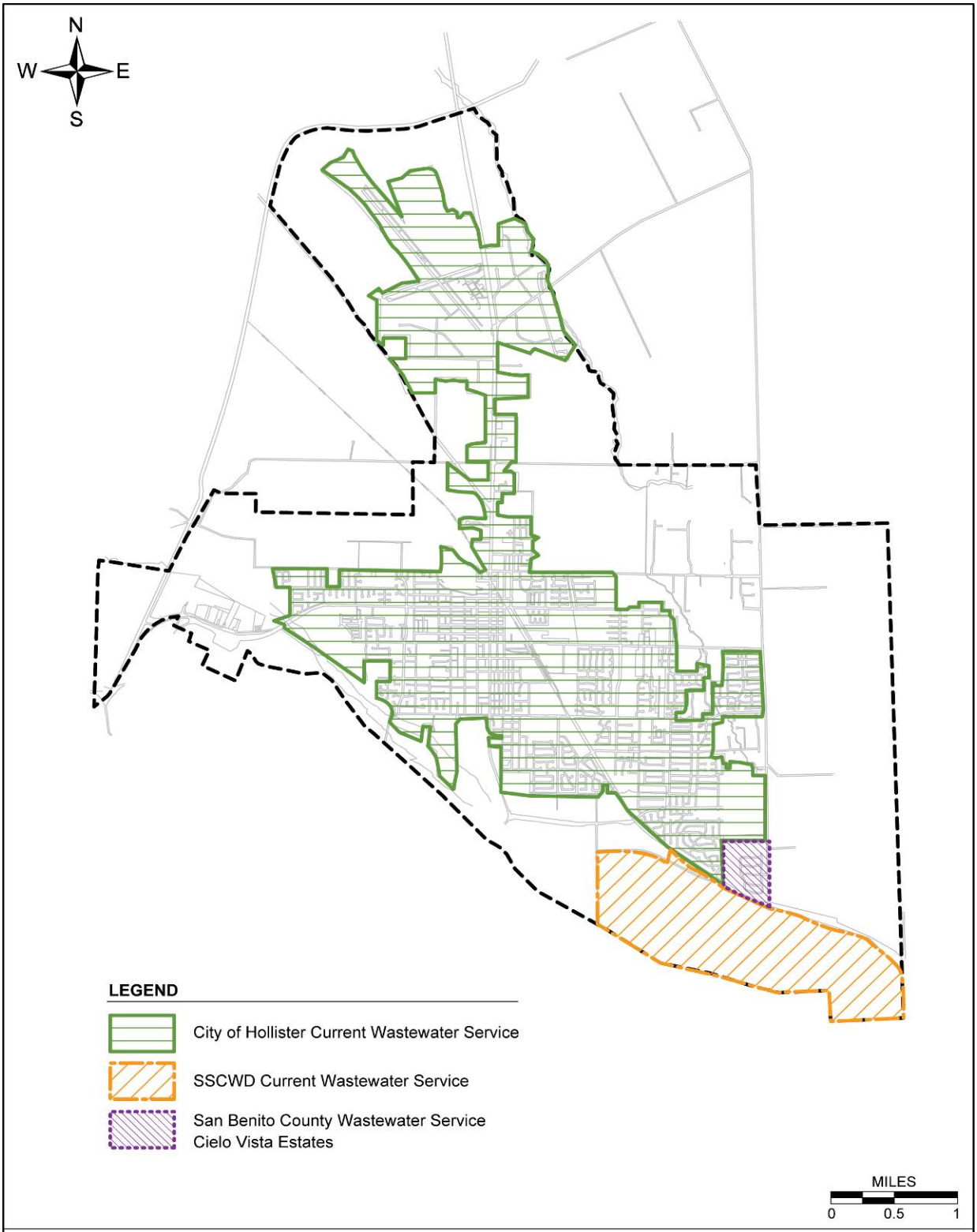
The City is responsible for the operation, maintenance, monitoring, and reporting for the IWTP and the DWTP. Table 3-1 shows the current and projected 2023 wastewater flows for the City of Hollister's two wastewater treatment plants.



Hollister Urban Area Water and Wastewater Master Plan

Lift Stations and Wastewater Treatment Facilities

Figure 3-1



Hollister Urban Area Water and Wastewater Master Plan

Wastewater Service Areas

Figure 3-2

Table 3-1: Current and Projected Wastewater Flows

Treatment Plant	Average Dry Weather Flows (mgd)	
	Current	Projected 2023
Domestic Wastewater Treatment Plant	2.69	4.04[a]
Industrial Wastewater Treatment Plant	0.66	0.66
Ridgemark Wastewater Treatment Plant	0.25	0.46

(a) Source: City LTWMP. LTWMP sited 2023 projected flows for DWTP as 4.49 mgd, which included 4.04 mgd from the City and 0.46 mgd from SSCWD.

3.1.1 Collection System

The City of Hollister's collection system consists of gravity pipelines and force mains ranging from 4- to 36-inches in diameter. Exhibit III shows the existing collection system piping and manhole locations.

The City has six lift stations: Airport Lift Station No. 1, McCloskey Lift Station No. 2, Second and East Lift Station No. 3, Lift Station No. 4, Southside Road Lift Station No. 5, and Diversion Lift Station No. 6. Lift Station No. 4 was removed from service in 2003 during collection system improvements. Diversion Lift Station No. 6 can convey flow to or from the IWTP. The locations of the active lift stations are shown in Figure 3-1.

3.1.2 City of Hollister Domestic Wastewater Treatment Plant

The DWTP was originally constructed in 1979 and became operational in 1980. At the time, the DWTP consisted of influent screening, aerated facultative primary ponds, a shallow high-rate secondary pond, two algae settling ponds, and approximately 1.6 acres of percolation beds, the only method of effluent disposal. The facility was operated as an advanced integrated pond system (AIPS) that uses microorganisms in the wastewater to convert soluble biological oxygen demand (BOD) into biomass that is removed from the wastewater by settling. The algae present in the secondary pond are the source of oxygen for the treatment process. These algae are separated from the wastewater in the settling ponds prior to percolation.

Since the DWTP became operational, a series of improvements were implemented to address various treatment and discharge deficiencies:

- In 1987, the City renovated the facility to add a new operations building and headworks equipped with an influent screen, comminutor, and flow measurement. At that time the RWQCB issued a new Waste Discharge Requirements (WDR) Order (87-47) regulating

treatment and disposal activities at the facility. The major change was to increase the permitted capacity to 2.69 million gallons per day (mgd).

- In 1994, the eastern percolation beds were renovated to increase effluent discharge capacity that had diminished over the years due to elevated treated effluent total suspended solids (TSS) levels.
- In 1996, the western percolation beds were added to increase the effluent discharge capacity.
- The City modified the flow path and operation of the DWTP several times over the years to improve effluent quality and reduce algae levels in the treated wastewater.
- In late 2002, the City began a series of capital and maintenance improvement projects to the DWTP. The first of these improvements began in late 2002 with the development of a 50 mgal emergency storage pond. In early 2003, the City started a biosolids removal project in one of the two aerated facultative primary ponds to dispose of biosolids that had accumulated since the pond became operational in 1980.

3.1.2.1 Interim Improvements

In response to the Cease and Desist Order (No. R3-2002-0105) issued in 2002, the City constructed interim improvements at the DWTP to provide short-term improvements in plant performance until the long-term management plan could be fully implemented. Specific objectives for these interim improvements included improving effluent quality, odor control, and flow measurement. These interim improvements introduced considerable changes to the treatment process by converting the original primary pond/advanced integrated pond system into a dual powered multi-cellular lagoon (DPMC) process for improved BOD reduction and TSS control. The DPMC system is designed for the permitted 30-day average dry weather flow of 2.69 MGD. Photograph 3-1 shows the mechanical aeration in the DPMC pond.

In addition to the secondary process changes, there were additional improvements to the DWTP headworks and flow metering. To control odors and improve flow measurement, a new influent lift station was constructed equipped with a mechanical grinder, an odor control biofilter, and magnetic flow meter. These headworks improvements were designed to be incorporated into any potential wastewater treatment plant upgrades and have been operating since completion in the summer of 2003. Figure 3-3 shows a schematic of the existing DWTP facilities.

Photograph 3-1: Aeration at DWTP Pond

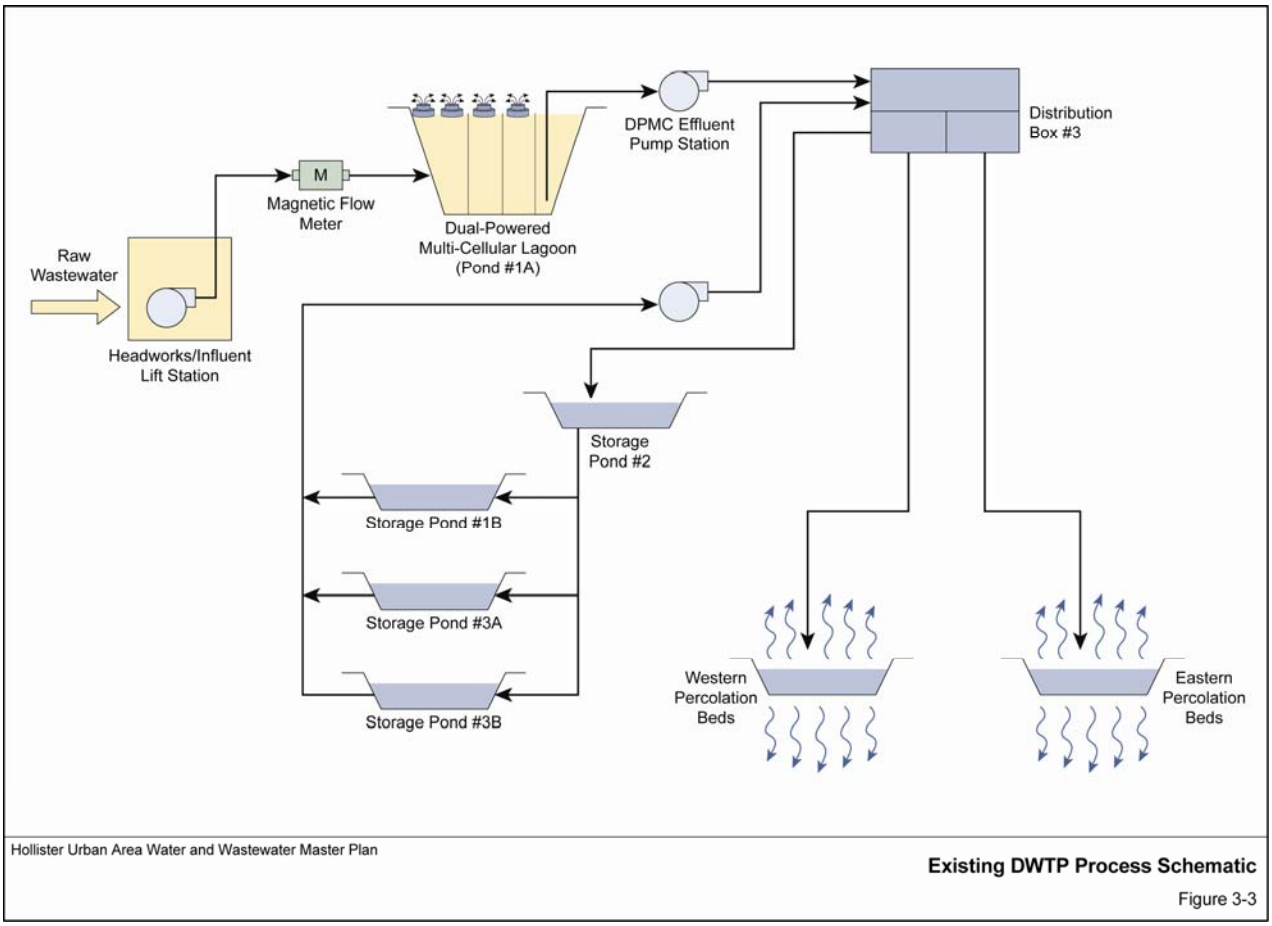


Figure 3-3: Existing DWTP Process Schematic

3.1.2.2 Regulatory Order History

The following items summarize the history of regulatory actions related to the DWTP.

- 1974: DWTP first regulated by RWQCB.
- 1987: RWQCB issues revised WDR Order (87-47) after improvements to facility headworks and other processes to increase treatment capacity to 2.69 mgd.
- 2000: RWQCB issues WDR Order (00-020) allowing temporary diversion of domestic wastewater to the IWTP until June 30, 2005 (subsequently revised to December 31, 2007). This permit also set requirements for development and implementation of a LTWMP for the DWTP and IWTP. Implementation of the LTWMP recommendations is required by December 31, 2007.
- 2002: RWQCB issues Cease and Desist Order (R3-2002-0105) in response to unauthorized discharges from the DWTP and IWTP to the San Benito River channel. During 2001 and 2002 it is estimated that 6,100 gallons of undisinfected wastewater seeped into the river channel from one of the DWTP percolation beds. On May 6, 2006, a levee of a pond at the IWTP was breached resulting in a discharge of approximately 15 million gallons of undisinfected domestic wastewater into the river channel. There were also concerns that influent flow measurements at the DWTP may not have been accurate.
- 2002: An Administrative Civil Liability Order (R3-2002-0097) accompanied the Cease and Desist Order (R3-2002-0105) that specified fines and other damages to be paid by the City resulting from these discharges.
- 2005: RWQCB issues Order R3-2005-0142 to modify the orders issued in 2000 and 2002 to provide extensions for the preparation and implementation of the LTWMP.

3.1.2.3 Effluent Disposal

Currently, seven percolation beds west of Highway 156 and eight percolation beds east of Highway 156 are the sole means of effluent disposal at the DWTP. These 15 beds cover 55.5 acres. The capacity of the percolation bed system was reevaluated in May 2002 to determine the extent that the percolation rates may have been affected by changes to DWTP operations, surrounding groundwater management practices, meteorology, and hydrogeology. Rates were compared to a 1998 assessment.

The 2002 evaluation estimated the net percolation bed capacity at 3.5 to 4.0 mgd during the summer and 2.3 to 2.7 mgd during the winter season. The City currently treats approximately

2.7 mgd at the DWTP and has insufficient capacity in its existing DWTP percolation beds during the winter season. As a result, a portion of the domestic wastewater is diverted to the IWTP during the winter, as permitted by Order 00-020 and amended by Order R3-2005-0142, to efficiently leverage the existing available treatment and percolation capacity at the IWTP. This strategy will continue for effluent disposal until implementation of a recycled water distribution system that will achieve the City's long-term effluent management goals.

3.1.3 Industrial Wastewater Treatment Plant

The IWTP was originally built in 1971 and is located approximately three-quarters of a mile to the east of the DWTP. Originally, the IWTP consisted of influent screening, two sedimentation ponds, aeration ponds, and approximately 36.1 acres of percolation ponds.

The IWTP was originally designed to treat high-strength industrial wastewater from two industrial dischargers. As of 1992, there was only one seasonal industrial discharger, San Benito Foods, discharging to the IWTP. San Benito Foods is a tomato processing facility operating during the summer and early fall months, typically July to October.

Following initial design and construction, the IWTP underwent the following series of improvements that addressed various treatment and discharger deficiencies:

- In 1973, a lagoon was created to store sludge collected in the two sedimentation ponds.
- In 1981, an additional percolation bed was constructed along the San Benito River for increased disposal capacity. However, during the winter of 1997-1998, this bed was permanently destroyed by river erosion.
- In 1988, the operational strategy of the IWTP was modified in response to improved screening processes implemented at the canneries prior to discharge into the industrial sewer – storm drain system. This resulted in a reduced loading of large solids in the influent wastewater that previously required removal. As a result, the two sedimentation ponds were bypassed and influent flows were conveyed directly to the aeration ponds. With the sedimentation ponds out of service, the sludge storage lagoon installed in 1973 was not required and was taken out of service.
- The IWTP operated in the 1988 operational mode until 2000 when the City requested, and received permission from the RWQCB, to divert peak domestic wastewater flows

for treatment and discharge at the IWTP on a temporary basis. In preparation of this modification, the City upgraded the influent headworks to the IWTP with a new mechanical screen to remove floatable solids from the influent domestic wastewater. Modifications to the secondary pond lift station were also made to allow effluent from the second aeration pond to be pumped to all operating discharge beds.

The IWTP was designed to treat a monthly average of 6.10 mgd during the canning season and 2.60 mgd the remainder of the year to secondary treatment standards utilizing the conventional aerated pond treatment system. However, the currently RWQCB permit limits flows to 3.5 mgd during the canning season and 1.72 mgd during the non-canning season.

3.1.3.1 Regulatory Order History

The following items summarize the history of regulatory actions related to the IWTP:

- 1972: IWTP was first regulated by RWQCB.
- 1986: RWQCB issues WDR Order (86-28) governing the operation of the IWTP.
- 1990: RWQCB issues WDR Order (90-90) after increases in the disposal capacity were implemented through the creation of a new percolation pond.
- 2000: RWQCB issues WDR Order (00-020) allowing temporary diversion of domestic wastewater from the DWTP to the IWTP and year-round treatment and disposal operations at the IWTP. Previously, the IWTP was operated on a seasonal basis as stormwater and cannery wastewater flows required. Effluent quality requirements were made more stringent and were to be phased in over the following two years.

3.1.3.2 TDS, Sodium, and Chlorine Compliance

Permit limits became more stringent as of May 20, 2002. Consequently, the City has reported discharge limit exceedances at the IWTP for TDS, sodium, and chloride. Removal of these dissolved constituents would typically require advanced treatment processes such as reverse osmosis, ion exchange, or electrodialysis. These processes are typically expensive, both to implement and to operate, and would require disposal of waste brine. An alternative to removing dissolved constituents at the wastewater treatment plant is source control in the wastewater collection system.

The City has been working with San Benito Foods to develop a strategy for reducing wastewater TDS levels. In March 2003, the City evaluated the ability of the IWTP to control effluent TDS by implementing limitations on wastewater characteristics discharged from San Benito Foods. The study concluded that there is a reasonable potential that the IWTP could comply with TDS discharge requirements if source control measures proposed by San Benito Foods are implemented and achieve a minimum net reduction of 20 percent of the TDS in the raw industrial wastewater.

3.2 Sunnyslope County Water District Wastewater Facilities

The SSCWD operates two wastewater treatment plants that serve residential and a few commercial businesses located near the Ridgemark Golf Course. The 2005 population of the Ridgemark sewer service area was estimated at 3,720. In 2025, the population is projected to be 5,137 based on the current service area. Future expansion of the sewer service area would result in additional population increases.

The Ridgemark (RM) wastewater treatment system consists of two separate wastewater treatment plants: the RM I and RM II. RM I was constructed in 1974 and consisted of five ponds. RM II was constructed in 1988 and consists of four ponds. A final disposal pond (Pond 6) was added near RM I during the construction of RM II. Flows can be transferred between RM I and RM II through an interconnecting force main and transfer lift stations. This pipeline provides the ability to dry out disposal ponds for maintenance.

RM I and RM II are permitted for a combined 30-day running average, dry weather flow of 0.3 mgd (May through October) and a 30-day running average, wet weather flow of 0.31 mgd (November through April). Currently, the 30-day running average dry and wet weather flows conveyed to the two treatment plants are estimated at 0.26 and 0.28, respectively. In 2025, the 30-day running average dry and wet weather flows are estimated to be 0.36 and 0.38 mgd, respectively.

3.2.1 Collection System

Three lift stations operate to convey wastewater to the treatment ponds. The Oak Canyon Lift Station pumps to the Main Lift Station at RM I and the Paullus Drive Lift Station pumps to RM II. Each of these lift stations is a submersible duplex station with pumps set to operate in a

lead-lag operational mode. Each lift station has backup power electrical cables that can be attached to portable generators in the case of a power outage. The Main Lift Station provides the required head to convey wastewater through the RM I treatment process. No additional pumping is provided at the headworks of the RM II facility. Figure 3-1 shows the locations of the two treatment plants, and three lift stations.

3.2.2 Ridgemark Area Wastewater Treatment and Disposal

3.2.2.1 Ridgemark I Wastewater Treatment Plant

Figure 3-4 shows a process schematic for the RM I facility. The RM I influent is measured by a magnetic flow meter located on the pumped discharge from the Main Lift Station. Pond 1 uses floating aerators for mechanical oxygenation and Pond 2 is a facultative, non-aerated pond that relies on algae for oxygen production. Conveyance between Ponds 1 through 5 is accomplished by gravity. The combined area of the treatment ponds is 2.3 acres and the combined area of the four disposal ponds is 5.1 acres.

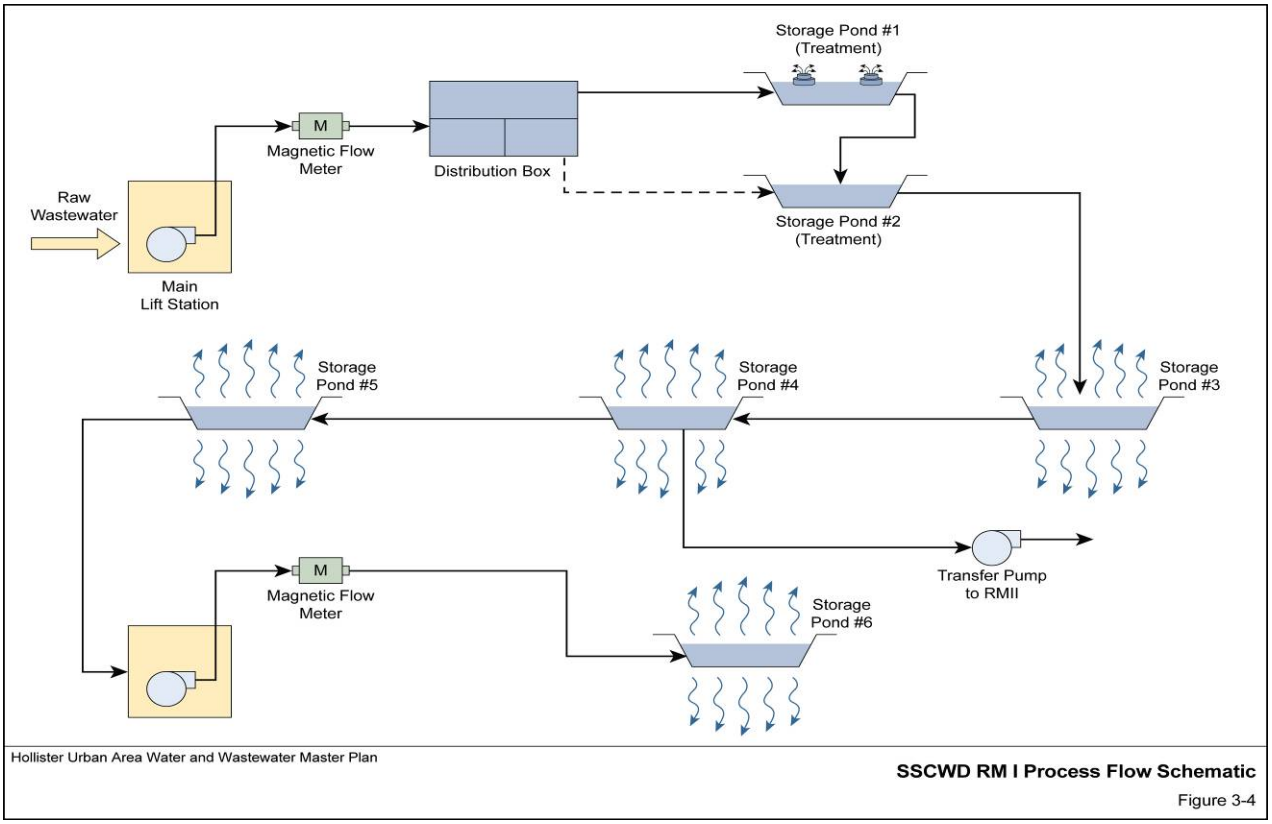


Figure 3-4: SSCWD RM I Process Flow Schematic

Effluent disposal from RM I is achieved through evaporation and percolation in Ponds 3 through 6. However, the percolation capacity of these ponds was greatly reduced due to the accumulation of biosolids at the pond bottom. Ponds 3 through 5 are plumbed to operate in series and are therefore not easily taken out of service without significantly impacting disposal capacity. Treated effluent from Pond 5 is pumped to Pond 6, designed as a rapid infiltration pond (Photograph 3-2), which is considered to be the primary disposal pond for RM I. Typically, Pond 6 is taken out of service, disked, and ripped annually to ensure continued high disposal capacity. However, Pond 6 percolation capacity has declined in recent years causing a reduction in the overall disposal capacity at RM I (Figure 3-4).

Photograph 3-2: Disposal Pond 6 at RM I Facility

Recent maintenance and solids removal from Ponds 3 through 5 have substantially increased their disposal capacity. Following the 2004-2005 wet weather season, SSCWD had an immediate need to increase disposal capacity, as Pond 6 percolation had significantly decreased. Work commenced in August 2005 to drain, dry, and remove solids from Pond 4. Following this work, the pond was placed back into service and percolation rates have increased. Similar work on Pond 3 and Pond 5 was completed in October 2005 and Fall 2006, respectively.

3.2.2.2 Ridgemark II Wastewater Treatment Plant

Figure 3-5 shows the process schematic for the RM II facility. Influent wastewater to RM II is a combination of pumped flow from the Paullus Lift Station and gravity flow from nearby areas that is measured using a three-inch Parshall flume. Similar to RM I, the first two ponds are

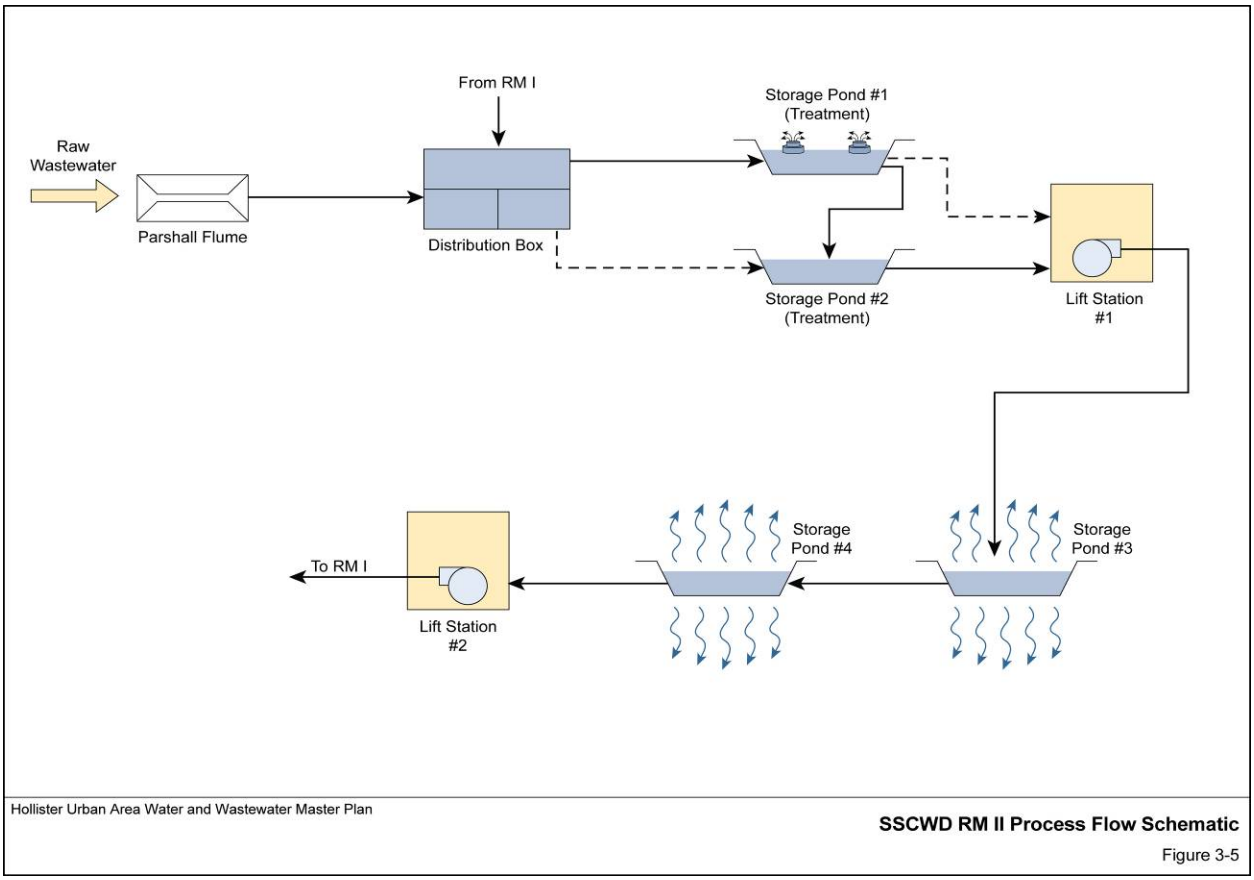


Figure 3-5: SSCWD RM II Process Flow Schematic

used for treatment with mechanical aeration in Pond 1 and algal aeration in Pond 2. Photograph 3-3 shows Ponds 1 and 2 at the RM II treatment facility with the Ridgemark Golf Course in the background.

Photograph 3-3: RM II WWTP Treatment Ponds

Ponds 3 and 4 are used for percolation and evaporation. The combined area of the treatment ponds is 2.8 acres and the combined area of the disposal ponds is 2.2 acres. Conveyance between Pond 1 and 2 and between Ponds 3 and 4 is by gravity. Lift Station No. 1 is used to transfer flow from Pond 2 to Pond 3.

Effluent disposal from RM II is primarily through evaporation in Ponds 3 and 4. Percolation is thought to be minimal since subsurface investigations have identified a clay layer underneath the disposal ponds. RM II currently operates well below its design flow, and due to the relatively long retention time, a large portion of the treated effluent is evaporated.

3.3 Cielo Vista Estates Wastewater Treatment Plant

Cielo Vista Estates was established as San Benito County Service Area No. 22 on April 1, 1987 and was granted a WDR permit by the RWQCB on July 10, 1987. Cielo Vista Estates is located northwest of the intersection of Fairview Road and Airline Highway, and consists of approximately 70 acres of residential development with approximately 76 residences. Approximately 1.2 miles of sewer collection pipe provide service to this area.

The wastewater treatment facility consists of an enclosed package sequencing batch reactor (SBR) with capacity to treat up to 30,000 gallons per day of domestic wastewater. Average influent wastewater flow is estimated at 20,000 gallons per day which is consistent with this level of development. Treated effluent is disposed of via leachfields adjacent to the treatment facility. Between October 2004 and September 2005, 22 acre-feet of treated wastewater was disposed of through the leachfield system. The leachfields are located on gently sloped land consisting of sandy and gravely soils located approximately 180 feet above the groundwater level. Bracewell Engineering of Oakland, California operates this facility under contract to San Benito County.

3.4 Regulatory History

On May 6, 2002, the Hollister City Council (City Council) adopted an urgency ordinance suspending issuance of building permits for new construction resulting in additional connections to the sewer system. This ordinance was adopted in response to concerns regarding flow metering, an unpermitted discharge of approximately 15 million gallons of treated effluent to the San Benito River, and delays in meeting milestones for developing an LTWMP by May

2005. This ordinance was adopted by the City Council for immediate protection of the public health, safety, and welfare.

On May 13, 2002, the City Council directed City staff to prepare a more formal ordinance than the urgency ordinance previously adopted. On May 20, 2002, the City Council adopted Ordinance 974 suspending issuance of building permits for new construction in the City. This includes (1) construction of new commercial, residential, or industrial building, which require connection to the City sewer system; (2) construction of new dwelling units; and (3) building additions that include installation of a new plumbing fixture unit.

City staff's May 16, 2002 report indicated there are currently 148 residential units, including 40 apartment units and 6 commercial/industrial projects that have been issued building permits but had not yet connected to the sewer system. The City estimated these permits represent an additional 40,000 gallons per day of wastewater flow, which City staff believes could be adequately treated and disposed with the existing facilities. Therefore, City Ordinance 974 allowed those structures to connect to the sewer system, but prohibits issuance of any new building permits.

On May 31, 2002, the RWQCB Board Executive Officer issued Cleanup and Abatement Order R3-2002-0082 to the City, requiring abatement of potential effects of additional domestic wastewater flow to the domestic or industrial wastewater treatment plants. Order R3-2002-0082 requires the City to keep in effect its self-imposed building permit moratorium. The RWQCB issued Cease and Desist Order R3-2002-0105 to replace the Cleanup and Abatement Order R3-2002-0082. Cease and Desist Order R3-2002-0105 was subsequently amended by Order R3-2005-0142. Together these orders restrict additional domestic wastewater flow to the City's collection system by ordering a formal connection permit moratorium. This prevents the City from lifting its self-imposed building moratorium adopted by the City Council on May 13, 2002. The orders also sets an influent flow limitation of 2.69 mgd at the domestic wastewater treatment plant and flow limitations of 0.18 and 1.52 mgd at the industrial wastewater treatment plant during the canning and non-canning seasons, respectively.

3.5 Required Wastewater System Improvements

Improvements to the existing wastewater facilities in the Hollister area are required to address regulatory requirements, projected population growth, and objectives set forth in the MOU for this Master Plan. The requirements were used to guide the development of alternatives and select recommended projects and upgrades.

3.5.1 City of Hollister Domestic Wastewater Treatment Plant Regulatory Requirements

Waste Discharge Requirements Order (00-020) and Cease and Desist Order R3-2002-0105) specified certain improvements to the DWTP. As a result of this order and subsequent communications with the RWQCB, the following major infrastructure improvements were identified:

- Increased treatment and disposal capacity
- Reduced effluent nitrate and ammonia concentrations
- Reduced effluent suspended and dissolved solids concentrations

After the proposed improvements to the DWTP are implemented, the Cease and Desist Order can be lifted and the City will be allowed to retract their building moratorium. Once this occurs, it is anticipated that substantial development will follow, resulting in an increase in wastewater flow to the DWTP.

Based on the RWQCB Basin Plan and other WDR permits issued for nearby wastewater treatment facilities, the DWTP is anticipated to have specific effluent quality requirements that need to be met prior to wastewater discharge. The existing and anticipated regulatory requirements are compared to the current effluent concentrations in Table 3-2.

Table 3-2: Anticipated DWTP Wastewater Regulatory Limits and Existing Concentrations

Constituent	Existing Wastewater Regulatory Limits (mg/L)	Anticipated Wastewater Regulatory Limits (mg/L)	Current Concentrations (mg/L)
Total Dissolved Solids	NR	1,200	960 - 1,300
Sodium/Chloride	NR	200 / 200	209-460 / 256-342
Nitrate/Ammonia	NR	5 / 5	0.05-0.14 / 27-33
Total Suspended Solids	60	30	< 60
Biological Oxygen Demand	NR	30	< 60

NR – No Requirement

3.5.2 City of Hollister Industrial Wastewater Treatment Plant Regulatory Requirements

The WDR permit for the industrial wastewater treatment plant (IWTP) includes effluent concentration limits for suspended and dissolved solids. TSS limits are 2.5 mg/L for a 30-day average with a maximum of 10 mg/L. Effluent quality requirements and current concentrations are summarized in Table 3-3. To date, the City's primary response to address periodic TDS, sodium and chloride concentration exceedances has been on source control to mitigate high concentrations of these constituents in the influent wastewater.

Table 3-3: IWTP Permit Requirements and Current Concentrations

Constituent	WDR Permit Requirements (mg/L)	Canning Season Concentrations (mg/L)	Non-Canning Season Concentrations (mg/L)
Settable Solids	2.5 (30-day average)	NA	350
TDS	1,415	1,200	1,400
Sodium	250	300	300
Chloride	240	170	360

NA – Not Available

3.5.3 SSCWD (Ridgemark WWTPs) Regulatory Requirements

The SSCWD LTWMP was developed in response to an updated WDR Order (R3-2004-0065) issued to SSCWD by the RWQCB. This permit imposes more stringent effluent quality requirements on the SSCWD treatment facilities and an upgrade to the existing treatment process would be required to meet these regulations. Table 3-4 summarizes the 30-day average regulatory requirements and the current concentrations in the effluent for the RM I and RM II treatment facilities.

Table 3-4: SSCWD Permit Requirements and Current Concentrations

Constituent	2010 Wastewater Effluent Limits (mg/L)	Current (2005) Concentrations (mg/L)	
		RM I	RM II
Total Dissolved Solids	1,200	1,774	1,973
Sodium/Chloride	200 / 200	416 / 694	508 / 738
Nitrate/Ammonia	5 / 5	0.12 / 22	0.34 / 7.7
Total Suspended Solids	30	88	21
Biological Oxygen Demand	30	57	8

The revised WDR also requires SSCWD to evaluate the feasibility of connecting to the City of Hollister wastewater system for treatment and disposal of their wastewater at the City's new domestic wastewater treatment plant that is currently under construction. The findings of the LTWMP are summarized in Chapter 8.

3.5.4 San Benito County Cielo Vista Estates WWTP Regulatory Requirement

The Cielo Vista Estates WWTP is currently operating within the requirements of their WDR permit. This permit was originally issued in 1987 and since that time, the Central Coast Groundwater Basin Plan has been revised. Given that this Basin Plan has been revised, the RWQCB may elect to review this permit and modify it to be more consistent with the recommendations of the current Basin Plan. When this review occurs, San Benito County and Cielo Vista Estates will reevaluate their processes to address any new requirements. At that time, San Benito County and the Cielo Vista Estates may elect to decommission the Cielo Vista Estate WWTP and convey the raw wastewater to the DWTP. This strategy was not included in the wastewater flow projections shown in Table 3-1. However, given the volume of flow routed to the Cielo Vista Estates WWTP relatively to the capacity of new DWTP, conveyance of raw wastewater from Cielo Vista Estates to the DWTP are not expected to impact the facility requirements currently under construction at the DWTP.

3.5.5 Collection System Regulatory Requirements

In May 2006 the State Water Resources Control Board (SWRCB) adopted new WDR for sanitary sewer systems to provide a consistent statewide approach for reducing sanitary sewer overflows (SSOs). These requirements are documented in SWRCB Order 2006-0003 and apply to any city or public agency that owns or operates more than one mile of sewer lines.

The SWRCB WDR order does not specify requirements for collection system improvements, however, through the development of the sewer system management plan (SSMP) required by the WDR, improvements are often identified and would need to be implemented to control the occurrence of SSOs.

Table 3-5 is a summary of the deadlines that apply from the date of WDR adoption, May 2, 2006, to the City, SSCWD, and Cielo Vista Estates collection systems:

Table 3-5: Waste Discharge Requirement Deadlines for the City, SSCWD, and Cielo Vista Estates

	City of Hollister	SSCWD	Cielo Vista Estates Collection System
Applicable Population Range	10,000-100,000	2,500-10,000	< 2,500
Submit WDR Permit Application	November 2, 2006	November 2, 2006	November 2, 2006
Report all SSOs via SWRCB electronic Reporting System	May 2, 2007	May 2, 2007	May 2, 2007
Create SSMP Development Plan and Schedule	November 2, 2007	February 2, 2008	May 2, 2008
Identify SSMP Goals; Define Organizational Structure for SSOs; Implement SSMP Recommendations	November 2, 2007	May 2, 2008	May 2, 2008
Develop Overflow Emergency Response Plan; Identify legal authorities to minimize SSOs; develop O&M Program; and Develop a Fats, Oils, and Grease Control Program	May 2, 2009	November 2, 2009	February 2, 2010
Develop Design and Performance Provisions; Evaluate System for Deficiencies; Evaluate Capacity Limitations; Approve The Final SSMP Including all State Water Resources Control Board Requirements	August 2, 2009	May 2, 2010	August 2, 2010

O&M – operations and maintenance

4.0 Basis of Planning

This chapter provides the basic information used in the development of concepts and alternatives for an integrated water resources management plan. The basis of planning includes assumptions with respect to the Study Area, planning period, land use, population, projected water demands, projected wastewater flows, and cost estimates. Through the application of a uniform set of planning assumptions, concepts and alternatives were developed in a manner to allow an objective comparison and evaluation of results.

4.1 Study Area

The Master Plan Study Area developed by the MOU Parties includes lands that are planned for future development that may require municipal and industrial water supply and wastewater collection and treatment services. The Hollister Urban Area lies within the Hollister Valley formed by the San Benito River and its tributaries, the Santa Ana, Tres Pinos, and Pescadero Creeks. The Study Area (Figure 4-1) includes the Hollister Planning Area boundary which includes the Sphere of Influence adopted by the Local Agency Formation Commission and some adjacent lands. The Study Area also includes lands that are designated in the San Benito County General Plan as industrial, commercial, or residential having a minimum density of one dwelling unit per acre. As described in the City's General Plan, the City Planning Area includes the current City limits and the unincorporated lands which ultimately may be developed and annexed to the City.

There are ten special study areas located within and outside the Master Plan Study Area boundary. As described in

Table 4-1, these special study areas are served by groundwater, City water supplies, and individual septic systems. In some of the special study areas, mutual water systems have been established. There is the potential that one of the MOU Parties may have to provide water and/or sewer service in the future if the need arises to one or several of these special study areas. For example, the City has extended water service to Special Study Area Number 7 in response to perchlorate issues in local groundwater supplies. As part of this master planning project, the MOU Parties desire to develop an institutional strategy for monitoring these

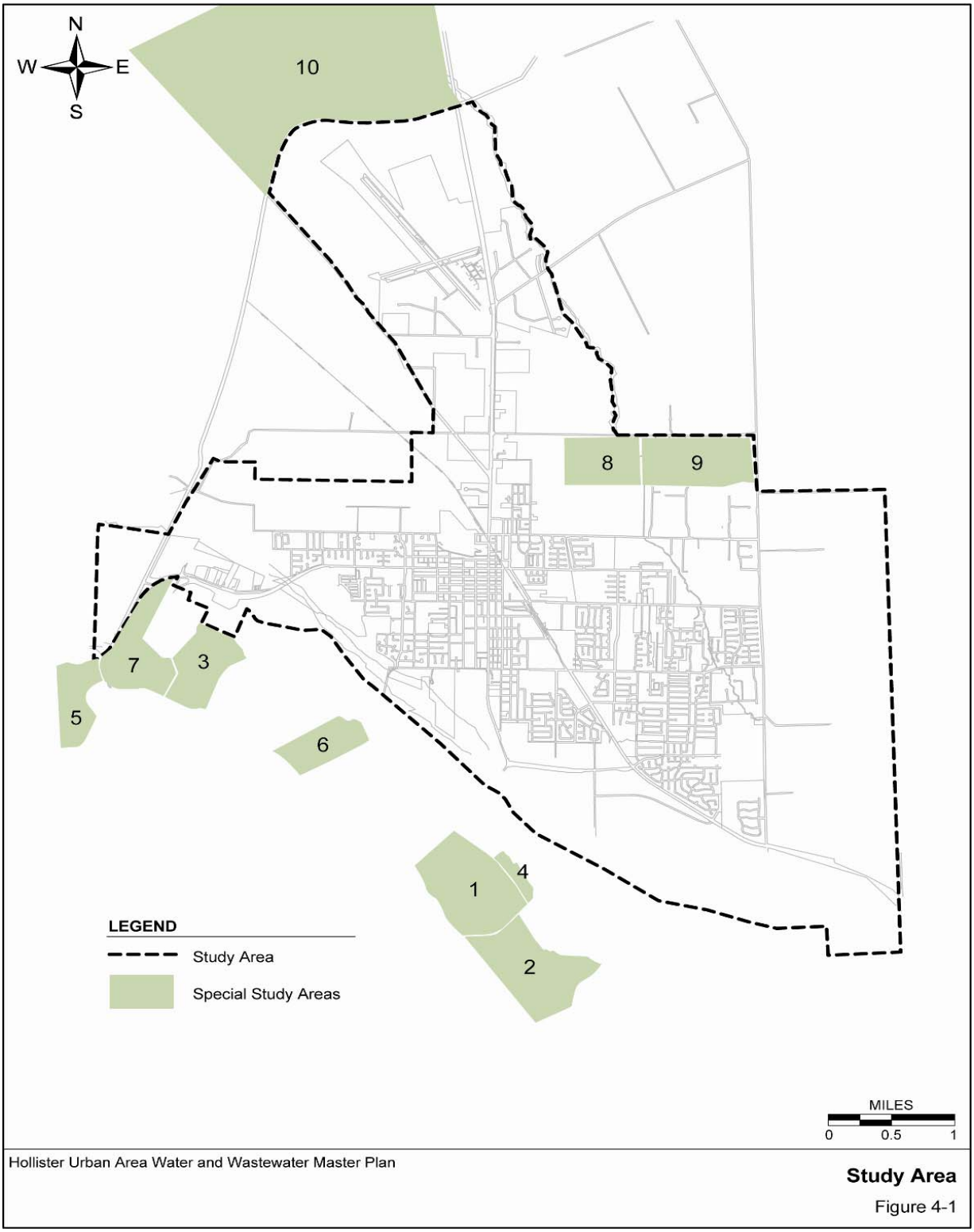


Figure 4-1: Study Area

areas for potential service needs in the future. However, specific water supply, water and wastewater treatment, and recycled water improvements and infrastructure needs for these areas will not be identified in the Master Plan.

Table 4-1: Special Study Areas

Identification Number	Special Study Area	Number of Residences Served	Water Service	Wastewater Service	Notes
1	Ashford Highlands	51	Groundwater/Mutual Water System	Individual Septic Systems	Groundwater pumped from well near San Benito River
2	Hidden Valley	55	Groundwater/Mutual Water System	Individual Septic Systems	Groundwater pumped from well near San Benito River
3	Hollister Ranch Estates	33	Groundwater/Mutual Water System	Individual Septic Systems	--
4	Montebello Estates	19	Groundwater/Mutual Water System	Individual Septic Systems	--
5	San Juan Oaks	183 residences 100 hotel rooms	Groundwater/Mutual Water System	Individual Septic Systems	Residences and hotel have not been developed at this time
6	Union Heights	22	Groundwater/Mutual Water System	Individual Septic Systems	Groundwater has high nitrates/nitrites
7	Area Adjacent to Hollister Ranch Estates	22	City of Hollister	Individual Septic Systems	Perchlorate issues with local groundwater
8	McCloskey Road Mobile Home Park	11	Groundwater	Individual Septic Systems	Groundwater has high nitrates
9	Area Near McCloskey Road and Fairview Road	272	Groundwater	Individual Septic Systems	Groundwater has high concentration of arsenic
10	Area North of Airport	None	N/A	N/A	Rising groundwater level has compromised septic system suitability in some areas

4.2 Planning Period

The planning period for this study extends 18 years, from 2005 to 2023. The initial year of the planning period was selected to provide a common baseline date for existing data related to land use, water supply and demand, and wastewater flows. The final year of the planning period coincides with the planning horizon of the adopted General Plan for the City of Hollister.

4.3 Land Use

As described in previous subsections, this Master Plan will provide recommendations for the water and wastewater infrastructure needs to serve the growth defined by the City of Hollister and San Benito County General Plans. The fundamental planning basis for the General Plans is proposed land use. The projected land use also provides the basis for projecting water demands and wastewater flows. Land use planning jurisdictions in the Study Area are shown on Figure 4-2. The General Plan land uses utilized in the completion of this Master Plan are illustrated on Exhibit I at the end of this report.

There are a number of specific land use policies that are relevant to the planning of water and wastewater facilities. Some of the pertinent land use policies are summarized in the following subsections.

4.3.1 City of Hollister General Plan

The City General Plan adopted in 2005 includes the following policy in Chapter 5 - Community Services and Facilities Element:

- *CSF1.1 Adequate Capabilities and Capacity of Local Facilities. Ensure that future growth does not exceed the capabilities and capacity of local public services such as wastewater collection and treatment, local water supply systems, fire and police protection, maintenance of streets and roads, local school systems, parks and recreational facilities, and landfill capacity, and ensure that public services meet Federal and State standards and are available in a timely fashion.*

4.3.2 San Benito County Zoning Ordinance No. 784

County Zoning Ordinance No. 784 amended County Zoning Ordinance No. 479 in March 2005 to include the following provisions:

- *Single Family Residential R-1 District. Section 10.4 Site Development Standard. The minimum area of a building site shall be one (1) acre in those portions of the unincorporated area of San Benito County in which septic tanks may be used for sewage disposal and there is a public water supply available. In those areas of the County in which a septic tank may be used for sewage disposal, but where there is no*

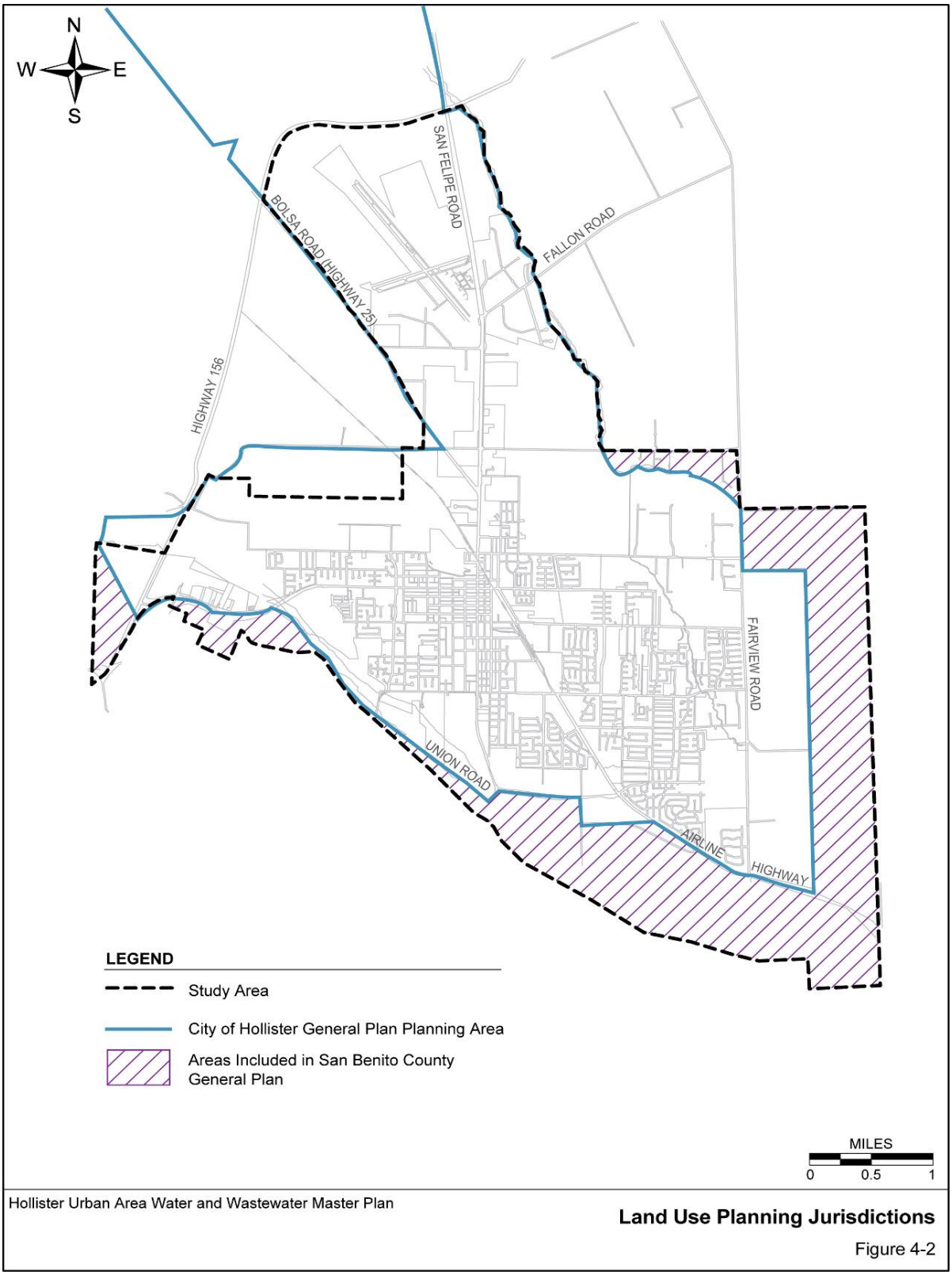


Figure 4-2: Land Use Jurisdictions

public water source, the minimum building site areas shall be 2.5 acres. Where a public sewer and public water supply are available, the minimum building site area shall be five thousand (5,000) square feet. Where public sewer and public water supply are available and the project involves the construction of 5 dwelling units or more, mixed residential development types shall be provided.

- *Residential Multiple (RM) District. Section 11.3 Site Development Standards in the Residential Multiple (RM) District. If the RM District is not served by a public sewer and public water supply, the minimum building area for a single-family dwelling shall be 2.5 acres. In those areas served by public water supply but no sewer, the minimum parcel size shall not be less than one acre. When the RM District is served by both a public sewer and water supply, the intensity of development will be directly proportional to the level and availability of public and private services. A minimum of eight (8) dwelling units per acre and a maximum of twenty (20) dwelling units per acre shall be provided.*
- *Planned Unit Development (PUD) District. Section 25.3 Standards for Planned Unit Development (PUD). Where public sewer and public water supplies are available, mixed residential development types shall be provided with an average parcel size of at least eight (8) dwelling units per acre, and up to 20 dwelling units per acre with a density bonus.*

4.3.3 San Benito County Zoning Change 04-141

The Mitigated Negative Declaration discussed the following water-related issues under the hydrology section:

- *34 Requires evidence of water quality and quantity provided for new development.*
- *30, 31, 32 Require development projects to design drainage and wastewater facilities to ensure water quality, require groundwater studies, and protect and preserve water resources.*

4.4 Population

Based on data from the California Department of Finance, the population of San Benito County was 57,440 in 2005. The Department of Finance projects that the County population will

increase to approximately 76,901 by 2023 (end of the planning period) and nearly double to 105,032 by the year 2050.

Approximately 64 percent of the current County population is located within the City of Hollister. The City has a current population estimated at 37,083. Based upon current planning data, future population growth will continue to be concentrated within the Hollister Urban Area. Population, housing, and employment data from the current City of Hollister General Plan are presented in Table 4-2.

Table 4-2: City of Hollister Population, Housing, and Employment

	2000	2010	2020	2023	% Change 2000 to 2023
Population	34,413	44,790	53,330	55,192	60.4
Housing Units	9,924	12,797	15,237	15,769	58.9
Employment	13,234	16,355	21,034	22,204	67.8

Source: Association of Monterey Bay Area Governments (January 2004) modified to address City of Hollister regional housing needs.

As described in Chapters 2 and 3, SSCWD is an independent public agency that provides water to a portion of the City and to unincorporated areas of San Benito County, generally east and southeast of the City. SSCWD's service is predominately residential and features the planned community of Ridgemark, whereas the City serves a mix of residential, commercial, and industrial customers. SSCWD currently serves water to approximately 5,200 connections and operates wastewater facilities for 1,200 connections.

As described in the following sections, projected water demands were based on land use. However, population projections provide a secondary check on these estimates and on the rate of projected development.

4.5 Projected Water Demands

Demand projections are required to identify Study Area water supply and infrastructure needs for the planning period. Water demand projections were based on 2005 water demand data and patterns, planned land uses, estimated water losses, land use unit demands, and anticipated levels of water conservation. Use of General Plan land uses within the Study Area is a critical aspect for projecting future water demand because the land uses reflect the City and County's plans and policies and the two General Plans have been through public review and the environmental compliance processes.

The water demand planning and projection process relies on the identification of future land uses that require treated water supply. A water use factor or land use unit demand is then applied to these lands. Future demands are added to the existing (2005) demand to determine interim and 2023 demands.

Future land use designations were identified for vacant parcels of one acre or more within the Study Area based on the City and County General Plans. The timing of development of these vacant lands was grouped into the following development horizons by the planning staff of the City and County:

- Phase 1: 2005 through 2013
- Phase 2: 2014 through 2018
- Phase 3: 2019 through 2023
- Buildout: After 2023; no specific year identified

Adjustments were made to account for the existing building moratorium and residential growth limitations described below.

- **Building Moratorium:** Phase 1 is expected to begin in 2008 for lands located within the City, which is delayed until the completion of the new domestic wastewater treatment plant by the building moratorium resulting from the Cease and Desist Order (R3-2002-0105). When additional capacity is available in the City's wastewater treatment and disposal facilities beginning at the end of 2008, the moratorium can be lifted. Growth constraints would then be determined by the City's residential growth management restrictions described below.
- **City Growth Ordinance:** The City of Hollister Growth Ordinance 959 restricts residential growth to 244 dwelling units per year until 2012 (or within 5 years after the moratorium is lifted, whichever is sooner). The proposed phasing of development was reviewed against the growth limitations specified in Ordinance 959. The City tracks the number of units that can be developed when the moratorium is lifted.
- **County Growth Ordinance:** The County Growth Management Ordinance 751 restricts subdivisions to a one percent increase in lots per year for the County as a whole, outside of the Cities of Hollister and San Juan Bautista. The developable County lands within

the project Study Area are outside of the City planning area. Therefore, they are not subject to the City's building moratorium. An analysis was conducted on the phased land use plan for conformance with the County growth limitation. The number of new housing units allowable under each County general plan land use category was extrapolated from the inventory of future areas planned for development. One housing unit per lot was assumed.

Demands based on general plan land uses, unaccounted for water losses, growth restrictions, and the conservation assumptions described below were developed for 2023 conditions and interim periods and are presented in Table 4-3. Due to the over-availability of developable land within the Study Area relative to City and County growth limitations, a significant portion of the water demands will not be realized by 2023. These buildout demands were identified but do not have an associated timeframe. A detailed description of the methodology used to project water demands is included in Appendix D.

The projected water demands in Table 4-3 indicate that water supply needs will increase by 3,875 af/yr, or 48.6 percent, over the planning period. At buildout conditions, water demands will increase to 20,148 af/yr or by approximately 2.5 times the current levels. These estimates are generally consistent with the projected increases in population for the City and County described in the previous section.

Table 4-3: Existing and Projected Water Demand

	Projected Water Demands (ac-ft)				
	2005	2013	2018	2023	Buildout
Hollister Urban Area Water and Wastewater Master Plan	7,965	8,383	10,294	11,840	20,148

ac-ft – acre-feet

The Water Resources Association of San Benito County is a non-profit corporation governed by representatives from the City of Hollister, the City of San Juan Bautista, the Sunnyslope County Water District and the San Benito County Water District. The Water Resources Association of San Benito County is responsible for developing and implementing water conservation programs within the Study Area. The future average annual water demands in the Study Area will be affected by the conservation program established and implemented by the Water Resources Association of San Benito County, of which the water purveyors are

members. A range of conservation savings was established for this demand analysis as described below. The range was applied to the existing and projected water demands and is based on the following assumptions:

- **Leak Detection and Repair and Water Audits:** According to the Hollister Urban Water Management Plan 2000 (July 1999), hereinafter referred to as the 2000 UWMP, four percent of the existing and projected system losses are anticipated to be saved through leak detection and repair and system-wide water audits. Note that the 2000 UWMP is currently being updated through completion of the 2005 UWMP. The 2005 UWMP is currently in draft form as of August 2006. The four percent system loss estimate was applied to unaccounted-for water estimates. Ten percent of the existing large landscaping, commercial, and industrial demands are anticipated to be saved through conservation and repair efforts.
- **Conservation Goals:** According to the 2000 UWMP conservation goals, existing residential demands will be reduced by approximately 400 ac-ft by 2013 and reduced again by 2018. For projected residential demands, a six percent reduction is anticipated in accordance with the 2000 UWMP.
- **New Housing Units:** The existing residential demands will be reduced by one percent per year until 2023 in accordance with the 2003 Groundwater Management Plan Update to account for water use efficiency. The Groundwater Management Plan Update, discussed in the following section, assumed that new housing units would require 312 gallons per day per dwelling unit (gpd/du), a 25 percent reduction from the current 420 gpd/du. Therefore, a 25 percent reduction in projected residential demands was assumed.

These conservation savings were applied to the respective land use-based demands. The low end range resulted in a savings of approximately 7 percent of the total existing and projected demands, before conservation, in the year 2023. The high end conservation range resulted in a savings of approximately 16 percent of the total existing and projected demands before conservation in the year 2023.

The MOU Parties desire to maximize and support water conservation efforts within the Hollister Urban Area. However, for planning purposes, water demands based on a low level of

conservation (7 percent) were used in this Master Plan to be conservative and provide the flexibility to adjust to future unforeseen demands if needed.

4.6 Projected Wastewater Flows

Future wastewater flows were estimated as part of the Long-term Wastewater Management Plan (Draft, December 2005) for the City and Ridgemark service areas. Assumptions used in the projecting wastewater flows were consistent with the City's General Plan. Table 4-4 presents a summary of average dry weather flow (ADWF) projections through the year 2023.

Table 4-4: Summary of Projected Wastewater Flows

Year	Projected ADWF Contribution (mgd)				Total
	City	Ridgemark	Cielo Vista Estates	Septic Systems[a]	
2008	2.72	0.25	0.02	0.08	3.07
2013	3.10	0.31	0.02	0.08	3.51
2018	3.54	0.38	0.02	0.08	4.02
2023	4.04	0.46	0.02	0.08	4.60

ADWF – average dry weather flow
mgd – million gallons per day
(a) Septic flows are estimated at 3 percent of the City's current ADWF.

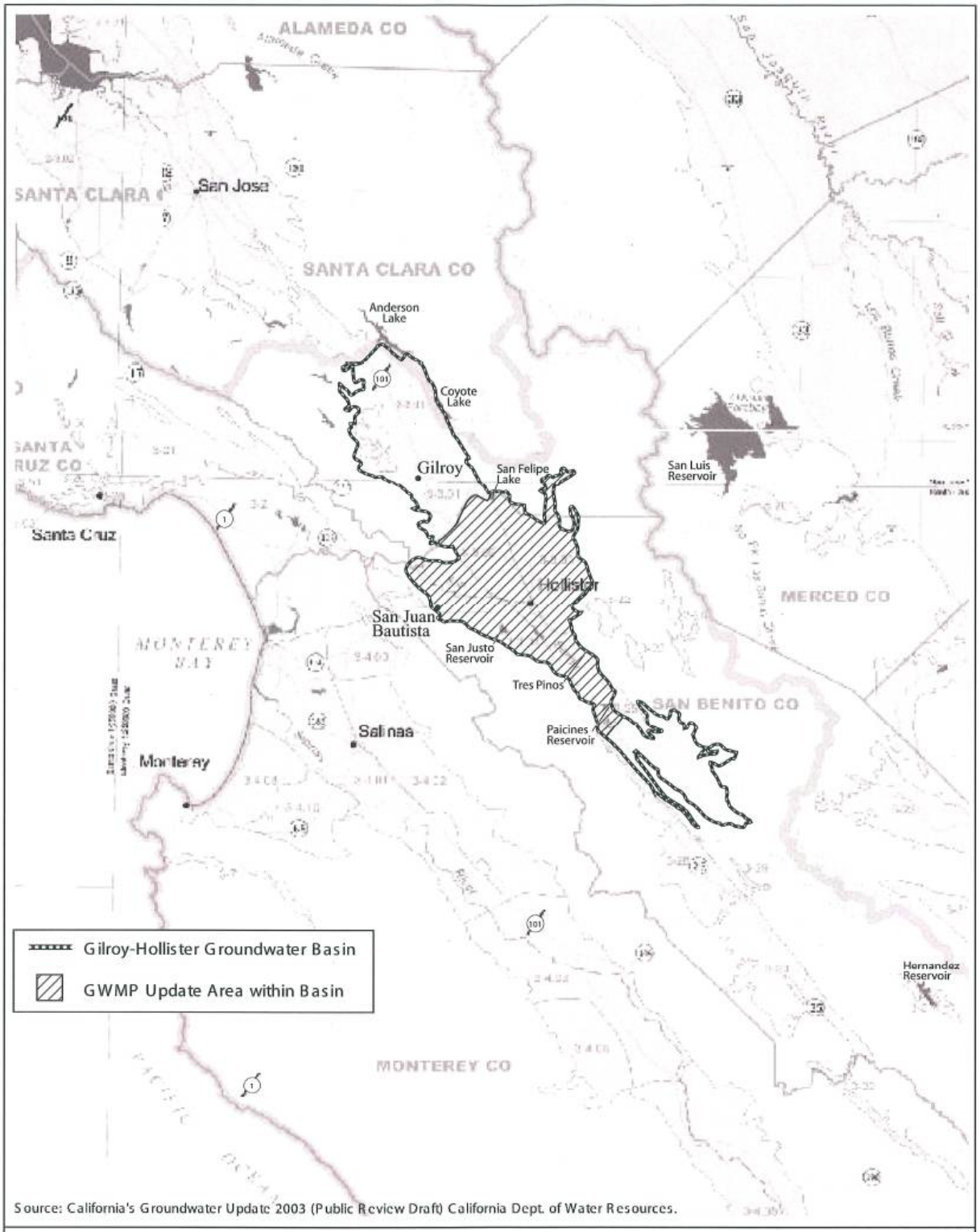
4.7 Groundwater Management Plan

The Groundwater Management Plan Update for the San Benito County portion of the Gilroy-Hollister Groundwater Basin (July 2003), hereinafter referred to as the Groundwater Management Plan (GMP) Update, was prepared to update the 1998 GMP. The purpose of the GMP Update was to build on the previous work to further identify and evaluate alternatives that will define coordinated basin-wide approaches to groundwater management. The area covered by the BMP Update is shown on Figure 4-3.

4.7.1 Problem Statements

The following problem statements regarding the quantity and quality of water in San Benito County are addressed in the GMP Update:

- Existing imbalance of areas of high and low groundwater elevation
- Anticipated imbalance of supply and demand due to planned growth
- Existing and anticipated inability to adequately dispose of wastewater



GILROY-HOLLISTER GROUNDWATER BASIN FIGURE 4-3

Figure 4-3: Gilroy-Hollister Groundwater Basin

- Frequent reduction of long-term imported water supplies and low quality local supplies
- Beneficial use constraints caused by increasing TDS accumulation in the basin
- Urban supplies affected by hardness, leading to use of self-regenerating water softeners that further add salts to the basin
- Beneficial use affected by nitrate accumulation in some groundwater subbasins
- Effective water quality protection is lacking

4.7.2 New Projects and Activities

The overall objective of the GMP Update is to maintain and enhance the agricultural and economic productivity of the County in an environmentally responsible manner. The GMP Update outlines the following new projects and activities that may be used to manage agricultural, municipal, and industrial supplies; groundwater levels; water quality; and/or wastewater effluent disposal. This list of new projects and activities was used as the baseline for preliminary screening and alternatives development described in Chapter 5 of this Master Plan.

- Regional and local conveyance facilities for water supply distribution
- In-basin water banking
- Development or redevelopment of high quality local groundwater and surface water supplies
- Out-of-basin water banking
- Groundwater/surface water blending facilities
- Groundwater treatment
- Use of recycled municipal and industrial wastewater
- Tile drains for groundwater level management
- Tree belt evapotranspiration for groundwater level management or wastewater disposal
- Groundwater pumping for water level/water quality management
- Out-of-basin export of wastewater, concentrate, pumped groundwater, or agricultural drainage water

- Constructed wetlands treatment of tile drainage and agricultural return flows

4.7.3 Water Quality Objectives and Criteria

The GMP Update also established water quality criteria for M&I use. The criteria were to meet primary and secondary drinking water quality objectives with emphasis on achieving the DHS Recommended Limit for Consumer Acceptance of not more than 500 mg/L of TDS and hardness of no greater than 120 mg/L. These are the same objectives contained in the MOU.

4.8 Urban Water Management Plan Update

The City and SSCWD jointly developed the 2008 UWMP Update, which includes water demand projections and estimates of supply reliability. The 2008 UWMP Update is currently in draft form (June 2008) and is expected to be finalized in 2008. These demand projections will be based on population projections and will not be directly associated with planned land uses identified in the City's General Plan that was adopted in December 2005 or the San Benito County General Plan (Land Use Element, adopted by the Board of Supervisors on July 14, 1992).

The draft UWMP water demand projections provided a projection of 2005 water demands for the City and SSCWD which was used as the existing demands for this analysis. The projected future demands, based on population projections, were not utilized because this Master Plan needs to rely on land use based demand projections. It was important for this Master Plan to reflect the land use planning efforts, programs, and policies of both General Plans, as well as reflect public input to the General Plan process and the environmental documentation associated with the development of these lands.

4.9 Long-Term Wastewater Management Plans

The City has developed a draft Long-term Wastewater Management Plan (LTWMP) (Draft, March 2007) for reliably treating and disposing of the City's domestic and industrial wastewaters. The purpose of the LTWMP is to determine the wastewater treatment components and storage and land required to achieve the LTWMP goal for projected growth described in the City's General Plan through 2023. Table 4-4 provides a summary of the projected ADWFs conveyed to the new domestic wastewater treatment plant (DWTP). The total projected ADWF of 4.50 mgd in year 2023 will be treated at the Ridgemark Wastewater

Treatment Facilities and the new DWTP. A more detailed description of the LTWMP is provided in Chapter 8.

The following LTWMP assumptions and recommendations were incorporated into the Master Plan:

- No future flow increase to the IWTP, as no additional industrial dischargers are expected.
- Wastewater from the Ridgemark development will be treated by the SSCWD at the Ridgemark Wastewater Treatment Facilities.
- The new DWTP will consist of an immersed membrane bioreactor with an ADWF design capacity of 5.0 mgd. The new DWTP will be capable of producing disinfected tertiary recycled water as defined by Title 22 and treated effluent nitrate concentrations no greater than 5.0 mg/L measured as nitrogen.
- The new DWTP will be located at the existing DWTP site and will replace the existing plant.

The SSCWD LTWMP was completed in January 2006. This plan identifies several potential alternatives for improvements to the Ridgemark Wastewater Treatment Facilities. The two main alternatives identified were:

- Upgrade the existing wastewater treatment facilities in response to more stringent discharge requirements issued by the Central Coast RWQCB
- Convey raw wastewater to the City's new DWTP for treatment and disposal
- Since the completion of the SSCWD LTWMP, SSCWD has determined that their best course of action is to upgrade the existing Ridgemark Wastewater Treatment Facilities and remain independent of the City's new DWTP. SSCWD will also produce recycled water for beneficial use.

4.10 Recycled Water Feasibility Study

The Water Resources Association of San Benito County (WRA), in partnership with the SBCWD, has adopted the GMP Update. As previously described, this plan identifies water recycling as one of the tools to achieve the goals established in that regional planning effort.

The San Benito County Regional Recycled Water Project was initiated to investigate the feasibility of developing a regional recycled water supply in the northern area of San Benito County. The San Benito County Regional Recycled Water Project Feasibility Study Report (RMC, May 2005) was conducted with interaction with partner agencies, including the Cities of Hollister and San Juan Bautista, the SSCWD, San Benito County, and grower and development interests.

The goals of a regional recycled water project are as follows:

- Enhance water supply and reliability
- Improve water supply quality
- Support wastewater management
- Protect groundwater quality
- Reduce basin salt loading
- Provide a tool to manage groundwater levels

Some of the key issues discussed in the Feasibility Report were:

- CVP water supply and reliability
- Equitable provisions of CVP supply and associated benefits to both agriculture and urban interests
- Wastewater treatment and disposal at the City, SSCWD, and San Juan Bautista wastewater treatment plants - in particular, issues associated with disposal capacity limitations and emerging regulatory challenges

Urban and agricultural water markets were examined and groundwater recharge and environmental enhancement efforts were reviewed to identify recycled water opportunities. Agricultural and urban markets were identified as primary opportunities for recycled water use in the northern part of San Benito County. The following is a summary of key results presented in the feasibility study report:

- Agricultural reuse is the most cost effective because distribution systems are simpler and less extensive than an urban application would be with similar demand. The San

Juan Valley and the Wright and Buena Vista service areas were identified as the most attractive agricultural reuse sites.

- Urban customers located near recycled water supplies may be a cost effective option for distribution of recycled water. Potential urban customers include parks, golf courses, school yards, and several industries.
- Widespread urban recycling appears impractical in Hollister and San Juan Bautista due to the high cost for retrofitting the existing infrastructure with a dual system for water and recycled water service.
- Groundwater recharge requires reverse osmosis and brine disposal, making it less cost effective and heavily scrutinized by regulators.
- Environmental enhancement projects may be feasible in the future. To date, no specific plans have been identified for environmental enhancement recycling opportunities, such as stream flow augmentation, lake recharge, wildlife habit restoration, and wetland enhancement.

Since the original Feasibility Report was completed in 2005, the study has been revisited and a draft Recycled Water Feasibility Study Update was completed in March 2008. The Study Update reflects several significant changes that occurred in the interim, including:

- In 2006 an Escherichia coli (E. coli) outbreak was linked to uncooked spinach originating in San Benito County. Although the spinach was not irrigated with recycled water, the outbreak drew attention to recycled water as an irrigation supply for high value crops. As a result, irrigators in the San Juan Valley, which was the recommended location for recycled water use in the original Feasibility Report, expressed concern with regard to using recycled water originating from the DWTP. Therefore, the ability to use recycled water in the San Juan Valley was in question.
- In 2007, a federal court ruled to protect the Delta smelt, which is facing extinction, by limiting the quantities of water pumped out of the Sacramento-San Joaquin River Delta. Consequently, the reliability of future Central Valley Project (CVP) water supplies is in question.
- The original Feasibility Report focused on areas to the west of the DWTP. Since that time, several new areas had been identified as potential locations for recycled water use.

The recommended alternative and implementation strategy described in the Feasibility Study Update is described below:

- Phase 1 – Construct a regional wastewater treatment facility (new DWTP) and distribute recycled water using a new distribution system serving the Hollister airport area.
  - A recycled water conveyance pipeline would extend from the DWTP to the airport, with a 'tee' located at the intersection of Wright Road and Briggs Road.
  - Phase 1 will provide up to 772 acre-feet per year of recycled water to the airport through 2015.
- Phase 2A – Extend the Phase 1 recycled water conveyance pipeline from the 'tee' to the intersection of McCloskey Road and Fairview Road and distribute recycled water to the Wright Road / McCloskey Road corridor.
  - Phase 2A will provide up to 4,200 acre-feet per year through 2023.
- Phase 2B – Beyond 2023 additional areas for recycled water use will be required. The Phase 2A facilities would provide opportunities for use in the Lone Tree area, Santa Ana Valley, East of Fairview Road or other areas.

The draft Recycled Water Feasibility Study Update is included in Appendix I.

4.11 Pajaro River Watershed Integrated Water Management Plan

The Pajaro River Watershed Integrated Regional Water Management Plan (IRWMP) is an ongoing cooperative effort by the Pajaro Valley Water Management Agency (PVWMA), SBCWD, and Santa Clara Valley Water District (SCVWD) to identify regional and multi-beneficial projects for the Pajaro River Watershed.

Figure 4-4 shows the watershed setting and service areas of these three agencies. On an individual basis, PVWMA, SBCWD, and SCVWD have each investigated and evaluated various resource, environmental, and management options for the overall wealth and well being of the watershed within their jurisdictions. The IRWMP integrates these various efforts and investigates the greater Pajaro River Watershed area to identify and prioritize integrated regional projects for the watershed to maximize benefits to the broadest group of stakeholders in the region.

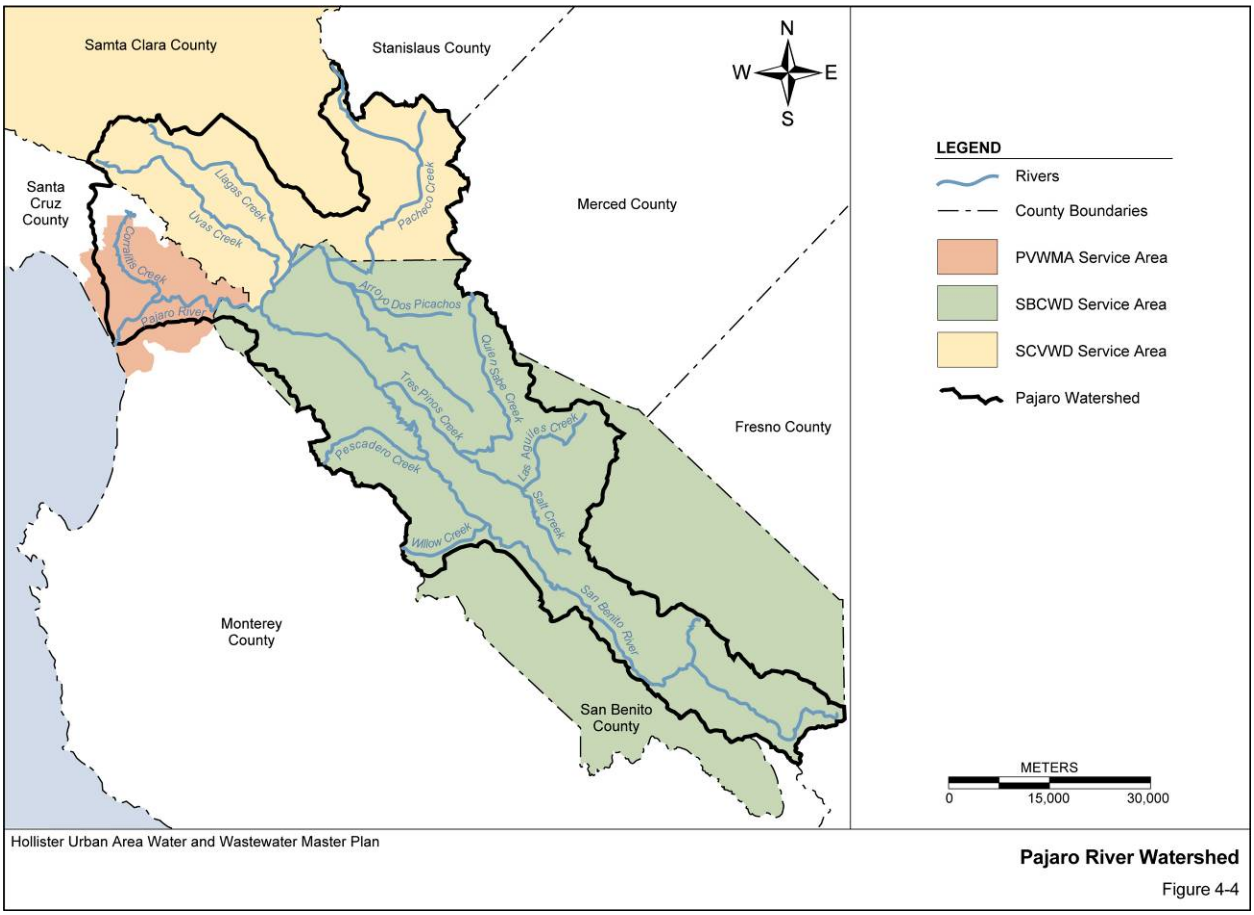


Figure 4-4: Pajaro River Watershed

The mission of the Pajaro River Watershed IRWMP is to preserve the economic and environmental wealth and well-being for the Pajaro River watershed through watershed stewardship and comprehensive management of water resources in a practical, cost effective and responsible manner. This Master Plan for the Hollister Urban Area will be a major component of the IRWMP. Due to the critical needs of improved water quality and water supply reliability for the Study Area, potential regional solutions through the IRWMP will be developed and evaluated.

4.12 Memorandum of Understanding

The following are descriptions of the principles and objectives described in the MOU that was developed by the MOU Parties. The principles and objectives have been grouped according to individual project components. As previously described, these principles and objectives will

form the basis for, and directly impact the development of, the Master Plan. A copy of the MOU is included in Appendix B.

4.12.1 Principles

As described in Section 2.1 of the MOU, the Master Plan shall be based on the following principles:

- 2.1.1 The Hollister Domestic Wastewater Treatment Plant is the primary wastewater treatment plant for the Hollister Urban Area including areas within the County that are designated to be served by that facility.
- 2.1.2 The standards for the quality of wastewater to be discharged (percolated, reused or discharged to surface water) shall be developed and agreed to by the City of Hollister, San Benito County, the San Benito County Water District and the Sunnyslope County Water District and shall include appropriate consideration of regional issues. These standards shall be the most stringent of local standards, state and federal regulations and shall include careful consideration of anticipated future regulation.
- 2.1.3 The selection of wastewater treatment processes and disposal methods shall include careful consideration of future wastewater disposal requirements and provisions for maximum reuse of wastewater. The selection of wastewater disposal options and sites shall be agreed to by the City of Hollister, San Benito County, San Benito County Waster District and Sunnyslope County Water District provided that disposal shall not:
  - Impact drinking water supplies or negatively impact adjacent land uses or property values unless fully mitigated to the satisfaction of the City of Hollister, San Benito County, San Benito County Water District and Sunnyslope County Water District.
  - Be inconsistent with applicable General Plans or Policies including preservation of agricultural land.
  - Be or result in conditions inconsistent with the quantity, quality, or groundwater level objectives of groundwater management plans for the area of disposal.
- 2.1.4 Urban water supply including as appropriate blending of treated surface water and groundwater, removal of hardness and other minerals from groundwater to provide urban water users with uniform water quality, shall minimize the need for water softeners, assure reliability of the urban water supply and support direct use of urban

wastewater. The urban water supply shall include provision(s) for drinking water service to areas in and adjacent to the Hollister Urban Area where Health and Safety issues exist.

- 2.1.5 Surface water and groundwater supplies shall be managed to sustain the area water supply and manage groundwater levels to avoid negative impacts on overlying land uses.
- 2.1.6 The standards for the quality of potable (drinking) water delivered to urban users shall be developed and agreed to by the City of Hollister, San Benito County, the San Benito County Water District and Sunnyslope County Water District and shall include appropriate consideration of regional issues while focusing on economic and health impacts. These standards shall be to the most stringent of local standards, state or federal regulations and shall include careful consideration of anticipated future regulation.
- 2.1.7 The impacts of water supply and treatment and wastewater treatment and disposal including reclamation on the culture, economy and environment of the City of Hollister and San Benito County shall be carefully evaluated and negative impacts minimized. The impacts considered shall include, but not be limited to, impacts on air quality, surface water and groundwater quality and quantity, rates and charges including connection/impact fees, property values, industry and business, preservation of agriculture and agricultural land, and aesthetics.
- 2.1.8 Water and wastewater management to protect and sustain the local surface and groundwater supplies of San Benito County.

4.12.2 Objectives and Assumptions

As described in Section 2.2 of the MOU, the Master Plan shall be based on the following objectives and assumptions:

- 2.2.1 The urban water supply (surface and groundwater) and water system for the Hollister Urban Area shall be capable of meeting 100 percent of the demands during wet, above normal, normal and dry years and in the first year of a critically dry period. That supply shall be consistent with meeting 100 percent of the San Benito County Water District Zone 3 and Zone 6 demands under the same conditions. During the

second and subsequent years of multi-year droughts/water shortages the water supplies (surface and groundwater) shall be capable of meeting 85 percent of the Municipal and Industrial demands and 75 percent of the agricultural demands.

- 2.2.2 Drinking water shall have a TDS concentration of not greater than 500 mg/L and a hardness of not greater than 120 mg/L (Calcium Carbonate).
- 2.2.3 Recycled wastewater shall have a target TDS of 500 mg/L and shall not exceed 700 mg/L TDS. To meet this objective, the wastewater treatment plant(s) shall include provision(s) for demineralization. This objective shall be met first by rigorous source control including, but not limited to, the elimination of on-site regenerating water softeners and second by demineralization. Blending recycled water with San Felipe water is only an interim measure for achieving recycled wastewater quality objectives. The recycled wastewater objective shall be met by the two measures identified above and the objectives of Section 2.2.2 as soon as practical and not later than by 2015.
- 2.2.4 Within the Hollister Urban Area all wastewater shall be treated at a central wastewater treatment plant and implementing Ordinances/Regulations shall be consistent with that requirement. This provision shall not preclude satellite wastewater separation plants for recovery of water for local recycling or the upgrading of the SSCWD Ridgemark Estates Wastewater Treatment Plants for local recycling, including but not limited to the Ridgemark Golf Course.
- 2.2.5 Within the Hollister Urban Area reliable and sustainable water supply shall be provided and maintained. The water conservation goals of the Groundwater Management Plan Update for the San Benito County Portion of the Gilroy-Hollister Groundwater Basin shall be used as the basis for all water and wastewater demand/flow projects. Water supply, treatment, transmission, storage (fire suppression, emergency and operational), and distribution facilities shall meet water industry and regulatory standards for service and reliability. The Master Plan shall include an evaluation of the current systems service and reliability levels. The Master Plan shall include an evaluation of the Hollister Urban Area water supply meeting California Urban Water Management Plan requirements including Chapter 642 and 643 Statues of 2001 (Senate Bill 221 and 610 respectively). It is the intent of the parties that these evaluations be used to determine and define the ability of the Hollister Area water systems to service

additional customers and that these evaluations will be the basis for General Plans and supporting policies and plans including input to LAFCO determinations and that the Master Plan be updated at seven (7) to ten (10) year intervals.

- 2.2.6 Urban Water supply including the treatment of surface and groundwater for wholesale delivery shall be the responsibility of the San Benito County Water District. Continued, managed use of groundwater is necessary to protect portions of the Hollister Urban Area including the City of Hollister Industrial and Domestic Wastewater Treatment Plants and areas susceptible to liquefaction from the adverse impacts of high groundwater. To achieve this continued and managed use of groundwater, groundwater supplies from the existing City of Hollister wells will be made available to SBCWD for water supply purposes only if the City of Hollister consents and agrees to specific terms and conditions for that use. To achieve this continued and managed use of groundwater, groundwater supplies from the existing SSCWD wells will be made available to SBCWD for water supply purposes only if SSCWD consents and agrees to specific terms and conditions for that use.
- 2.2.7 Centralized wastewater treatment including specialized treatment as required to produce reclaimed water for agricultural purposes and disposal by means other than reclamation shall be the responsibility of the City of Hollister.
- 2.2.8 Marketing and distribution of recycled water outside the city limits of Hollister and outside the Sphere of Influence of SSCWD shall be the responsibility of SBCWD. Marketing and distribution of recycled water for M&I use inside the Sphere of Influence of SSCWD shall be the responsibility of SSCWD. The marketing and distribution of recycled water for agricultural use inside the Sphere of Influence of SSCWD shall be the responsibility of SBCWD.
- 2.2.9 Within the Hollister Urban Area dual water supplies and dual distribution systems shall be required for all new development and for new parks, school grounds, cemeteries, and other large landscaped areas. Every reasonable effort shall be made to provide existing park, school grounds, cemeteries and other large landscape areas with supplies separate from the domestic water system. Nothing shall prevent the San Benito County Water District from developing groundwater supplies for parks, school grounds, cemeteries and other large landscaped areas.

4.13 Basis of Cost Estimates

Preliminary cost estimates have been developed for the projects and alternatives identified during the completion of this Master Plan. These preliminary cost estimates include both capital costs and O&M costs.

Capital cost estimates were prepared by applying unit costs and cost curve data to the estimated quantities or capacities for proposed improvement projects. Allowances were added for contingency (30 percent) and engineering, administration, and permitting (25 percent). For projects already in progress, actual bid data or established budgets developed by others were utilized. Construction costs will include water conveyance system pipelines, wastewater interceptors and supporting infrastructure (e.g., pump stations); however, distribution and collection networks within new developments will not be included.

O&M costs include only those costs associated with new facilities. Existing O&M costs were considered a sunk cost and are not relevant to the comparison of alternatives. Estimated annual O&M costs for new facilities were based on historical data from local facilities or a percentage of construction cost based on industry standards.

All preliminary cost estimates have been adjusted to current dollars. The basis for the estimates is the ENR Construction Cost Index for the San Francisco Bay Area for March 2008 which is 9133.

5.0 Development of Alternatives

This chapter provides a summary of the development of alternatives. The alternatives analysis process is described along with the initial screening of alternative concepts. Several feasibility studies are discussed that were completed to narrow the choices of key decisions. The resulting alternatives and the alternatives evaluation are described in Chapter 6.

5.1 Integrated Water Resources Approach

An integrated water resources strategy is required to address the high mineral content of the water supply and future recycled water, the reliability and reduced delivery of imported CVP water during dry years, and the regional wastewater treatment and disposal needs of the Study Area. The principle resource issues that can be addressed with an integrated approach to developing each alternative include the following:

- Quality of drinking water and recycled water
- Reliability of water supply
- Coordination of water and wastewater system improvements
- Regional balance of water resources including high groundwater areas

5.2 Initial Feasibility Studies

Several initial feasibility studies were conducted as a part of this Master Plan to identify the most feasible, long-term solutions to address major project components. These solutions were carried forward into the formulation of alternatives. These components include demineralization of water supply versus wastewater and groundwater demineralization versus softening.

5.2.1 Demineralization Alternatives Analysis

A demineralization alternatives analysis was conducted to determine whether demineralization should be provided for the water supply, recycled water, or both. Selection of the recommended demineralization strategy was based on the lowest overall life cycle cost developed from a net present worth cost analysis and a comparison of relative advantages and disadvantages. A

detailed description of this analysis is provided in Appendix E: Demineralization Alternative Analysis Technical Memorandum.

The net present worth cost analysis included construction, and operations and maintenance (O&M), and avoided consumer costs through 2023. The existing blended groundwater TDS concentration of 875 mg/L was used as the baseline for estimating avoided consumer costs. Avoided consumer cost estimates based on reduced potable water TDS levels included reduced bottled/filtered water use; increased faucet, garbage disposal, clothes and dish washer, water heater, and residential water distribution pipeline service life expectancies; reduced operating expenses for residential water softening systems; and reduced purchase of residential water softening systems. Annual avoided consumer cost estimates ranged between $0.4 and $0.5 per mg TDS/L removed per resident or between $185 to $250 per resident. A summary of the development of estimated consumer costs is included in Appendix E.

To meet the MOU drinking water and recycled water goals, groundwater demineralization and groundwater and recycled water demineralization are essentially equal in cost for the Hollister Urban Area. Groundwater demineralization is the recommended alternative since it limits demineralization and brine disposal operations to a single stream and provides the greatest consumer benefits. This demineralization strategy will be used as the basis for development of the comprehensive alternatives described later in this chapter.

5.2.2 Comparison of Demineralization and Centralized Lime Softening

The MOU Parties have sets goals of reducing TDS and hardness in the drinking water to 500 mg/L and 120 mg/L, respectively. The MOU Parties have set treated wastewater effluent goals of 500 – 700 mg/L TDS. An analysis of the drinking water quality for the City and the SSCWD water systems, as well as the City's wastewater influent indicates that these goals may be achieved with a centralized raw water lime softening. A detailed description of the assumptions, findings, and results of the analysis is provided in a technical memorandum in Appendix F: Technical Memorandum on Softening.

Softening of the raw water will likely result in a drinking water TDS concentration in the range of 485 to 555 mg/L, depending on the blending of the raw water sources and sources to be softened. Hardness is likely to vary between 55 and 70 mg/L as $CaCO_3$ in the softened treated water compared to the maximum goal of 120 mg/L prescribed by the MOU. Additionally,

softening of the raw water may result in wastewater influent concentrations ranging from 735 to 760 mg/L. Therefore, demineralization of the wastewater effluent is needed to meet the MOU water quality goals.

An analysis of costs indicates that both softening and demineralization of the groundwater supply are essentially equal with regard to life cycle cost. However, demineralization offers the following benefits: (1) it will produce higher drinking water quality, (2) it does not require recycled water demineralization, and, (3) it does not require that water supply sources be centralized. Given these advantages and the ability to be implemented facilities incrementally, demineralization is the recommended alternative for TDS and hardness removal and will serve as a preferred treatment technology for the alternatives described in Chapter 6**.**

5.3 Other Programs

There are numerous ongoing programs in the Study Area which provide solutions for the identified water resources issues. These program solutions would be common to any concept or alternative.

5.3.1 Groundwater Management Plan Update

The Groundwater Management Plan Update (GMP Update) (July 2003) included water resource management program and project elements for agricultural and M&I water supplies, groundwater level management, water quality management, and wastewater disposal within the San Benito County portion of the Gilroy-Hollister Groundwater Basin. The GMP Update management measures were divided into three general categories: Institutional Programs, Continuation of Existing Projects and Activities, and New Projects and Activities. The institutional programs relevant to the Master Plan are as follows:

- M&I water conservation
- Salinity education program
- Water softener ordinance
- Industrial salt control in municipal wastewater program
- Nitrate education program
- Well construction and abatement ordinance

- Maintain and enhance strategic data collection and management program
- Continue and expand economic/regulatory water level management tools

These institutional programs will be assumed to start up or continue, for purposes of the Master Plan recommendations. The following current projects and activities are also assumed to continue:

- Groundwater extraction
- Surface water importation and treatment
- Water transfers
- In-basin banking with natural percolation or artificial percolation of imported and/or local surface water
- In-basin water banking, in-lieu banking of imported and/or local surface water

New projects and activities were carried forward into the development of alternatives if they (1) provide benefit to the urban area, (2) meet or contribute to M&I needs, and (3) are technically feasible. New projects and activities that were not carried forward from the GMP Update are listed below:

- Tile drains for localized groundwater level management
- Tree belt evapotranspiration
- Out-of-basin export of wastewater effluent, brine concentrate, and/or agricultural drainage by river discharge or export pipeline
- Wetlands construction for treatment/polishing of wastewater effluent, storm water, and agricultural runoff

The remaining items from the extensive list of projects have been adapted into alternatives for the Hollister Urban Area.

5.3.2 Long-term Wastewater Management Plan

The LTWMP was prepared for the City in March 2007 (Draft). The goals of the LTWMP were to provide high quality wastewater effluent suitable for direct reuse on high value, quality sensitive crops, and dispose of all treated effluent through some form of recycled water

irrigation such as crop and spray field irrigation. The key elements of the recycled water plan are as follows:

- Effluent applied to percolation beds is to be limited to not more than current levels by spray fields with the remainder disposed of via irrigated pasture.
- Effluent salinity levels to be reduced by 2015 through a combination of source control, water treatment, and water softener ordinance.
- The Phase 2 Recycled Water project is to be implemented in 2015, designed to provide adequate reuse capacity through 2023.

The LTWMP provides for specific wastewater treatment, storage, and land requirements to achieve these goals. It was assumed that wastewater from the SSCWD will be treated at the new DWTP starting in 2008. The new DWTP will be designed to produce Disinfected Tertiary Recycled Water, as defined by Title 22 of the California Code of Regulations. Specific components of the LTWMP are being incorporated into each of the Master Plan alternatives.

The LTWMP for SSCWD was completed in January 2006. Goals for the plan include meeting the RWQCB requirements through the construction of an enhanced wastewater treatment plan, demineralization of drinking water and reuse of reclaimed water.

5.3.3 Recycled Water Feasibility Study Update

The purpose of the Recycled Water Feasibility Study Update (Draft March 2008) was to investigate the feasibility of a regional recycled water supply in northern San Benito County. Urban and agricultural water markets, groundwater recharge, and environmental enhancements were considered when identifying opportunities. Agricultural and urban markets were determined to be the primary opportunities for recycled water. The recommended project is a phased approach that will serve recycled water to the Wright Road / McCloskey Road corridor in the first phase (Phase 2A) and then be extended to additional areas to the west of the City as demand increases (e.g., Lone Tree Road area, Santa Ana Valley, areas east of Fairview Road). Various alternatives for interim effluent disposal were evaluated. The preferred alternative was spray field application at the Hollister Municipal Airport. A portion of the infrastructure required to convey recycled water to the Hollister airport will be utilized for the recycled water project along the Wright Road / McCloskey Road corridor.

5.3.4 Water Conservation

The Water Resources Association of San Benito County is responsible for developing and implementing water conservation programs within the Study Area. As described in Chapter 4, a range of water conservation savings was established for the water demand projections. The range of water conservation savings is from a low of 7 percent to a high of 16 percent. Specific water conservation methods to achieve this range of water savings are described in detail in the Hollister Area 2008 Urban Water Management Plan (Final Draft, June 2008).

The MOU Parties desire to maximize and support water conservation within the Study Area. However, for planning purposes, water demands based on a low level of conservation were used in this Master Plan. The impact of a higher level of conservation would be to extend the time required for the construction of new facilities.

5.3.5 Water Softener Ordinance

The Water Resources Association of San Benito County is completing a technological and economic feasibility study of alternatives to an ordinance, that would limit the availability, or prohibit the installation, of residential water softening or conditioning appliances that discharge to the sewer system of the City of Hollister, Ridgemark Estates/Sunnyslope County Water District, and Cielo Vista Estates in accordance with section 116786 of the Health and Safety Code (H&SC).

The purpose of the feasibility study is to:

1. Provide the assessment by the local agency of the technological and economic feasibility of alternatives to the ordinance, H&SC 116786(a)(1)(A) and H&SC 116786(b)(1)(A).
2. Provide the assessment by the local agency of the potential saline discharge reduction of the ordinance, H&SC 116786(a)(1)(B) and H&SC 116786(b)(1)(B).
3. Substantiate the findings of the local agency so that they may issue an Ordinance prohibiting the installation of brine discharging water softeners, H&SC 116786(c).

The local agency is the agency responsible for the sewer system. Therefore, there are three responsible local agencies: Hollister for those connected to the sewers in Hollister, SSCWD for

Ridgemark Estates, and San Benito County for Cielo Vista Estates. The impact of the ordinance would be to reduce the discharges of salinity to the sewer system and improve effluent water quality for recycled water.

5.3.6 Salinity Education

Source control for municipal and industrial users will primarily occur through implementation of a Water Softener Ordinance. Additional source control measures are also being implemented in the Hollister Urban Area, including a salinity education program for agricultural, municipal, and industrial users.

The salinity education program includes assisting agricultural water users in managing salt infiltration to the local groundwater basin. An additional program will involve working cooperatively with food processors and other industrial dischargers. Salts could be reduced through operational changes that reduce the use of salts or pretreatment processes that remove salts prior to discharging wastewater to the collection system. The impact of these source control measures would be to further reduce salt in the effluent of the City and SSCWD wastewater treatment plants.

5.3.7 Dual Distribution Systems

Section 2.2.9 of the MOU states that "within the Hollister Urban Area dual water supplies and dual distribution systems shall be required for all new development and for new parks, cemeteries, and other large landscaped areas." Additional institutional work will be required to connect these new dual distribution systems to the wastewater treatment plant recycled water supply, and extend the duel system to include existing uses. The impact of the use of dual distribution systems and separate water supplies would be to reduce the capacity requirements of new water treatment facilities.

5.3.8 Special Study Areas

As shown in Figure 4-1, there were ten special study areas identified for this Master Plan. Specific information for each of these special study areas is summarized in Table 4-1.

These special study areas are generally outside the primary Study Area but may require water and/or wastewater service from the MOU Parties in the future. These special study areas range from approximately 20 residences up to 250 residences.

Due to the potential need for future water and/or wastewater service, these areas need to be monitored by the MOU Parties and SSCWD. The proposed water and wastewater facilities in the Hollister Urban Area need to provide sufficient flexibility to serve these areas if required in the future. The impact of providing water and/or wastewater service to these areas would be to increase water demands and wastewater flows to the Hollister Urban Area. However, these increased wastewater flow contributions and water demands would only result in a reduction in the reserve capacity of existing and new facilities; the increases would not require the recommended improvements described later in this report to be altered.

The intent of the MOU Parties is to consider individual groundwater or mutual water systems or septic systems (satellite systems) with regard to their consistency with the MOU goals and objectives. As part of this master planning project, the MOU Parties desire to develop an institutional strategy for monitoring these areas for potential service needs in the future. Specific water supply, water and wastewater treatment, and recycled water improvements and infrastructure needs for these special study areas have not been identified in the Master Plan. The MOU also provides for the use of satellite wastewater systems for local water recycling (Article 2.2.4 of MOU).

5.3.8.1 Satellite System Management Categories

The following are three potential categories of satellite system management services that pertain to the Hollister Urban Area:

- **Ownership:** Satellite management ownership exists when water or wastewater services are physically separated from one another, but owned by a single entity. Ownership assumes responsibility for all aspects of water and wastewater system functioning and development. Ownership of an existing water or wastewater system may be transferred to the MOU Parties through the system sale, trade, gift, etc. A satellite management agency may own more than one water or wastewater system and many also provide management and operations and/or contract services to other systems.

- **Management and Operations:** Satellite management and operations exist when water or wastewater systems are physically separated from one another, but are comprehensively managed and operated by a single entity which does not own the water or wastewater systems' physical components. In conducting satellite management and operations, an entity is responsible for all day-to-day responsibilities. Management responsibilities include planning and policy decision making. Operational responsibilities include normal day-to-day operations, preventative maintenance, water quality and regulatory monitoring, troubleshooting, emergency response, response to complaints, and public relations including contact and record keeping. Satellite management and operations does not include addressing legal issues, financing or rate setting.

- **Contract Services:** Contract services are services provided by an entity to water and wastewater systems through a written agreement (contract) for specific tasks. Types of contract services vary with the specific needs of the systems and the capabilities of the service provider. Types of contract services may include water quality monitoring, billing, emergency response, record keeping, meter reading, operations, maintenance, etc. Each of these services may be provided by separate entities under separate contracts. An example of this type of contract operations is the current operation of the Cielo Vista Estates wastewater facilities by a private contractor.

5.3.8.2 Considerations for Category Determination

Each of the satellite management types has benefits and limitations for both the system being served and the service provider. Levels of responsibility, liability, the ability to affect change or maintain system stability, cost, and political considerations, are a few of the issues to be raised and discussed when determining how services will be provided. The decision making process should include factors such as long term goals of the MOU Parties, its responsibility and liabilities, and its capacity to provide the service. Table 5-1 is a summary of the characteristics typically achieved with each satellite management type.

5.3.8.3 Recommended Monitoring Elements

The following elements are essential for the successful operation of water and wastewater systems. It is recommended that the MOU Parties begin monitoring these elements for each special study area.

Table 5-1: Typical Satellite Management Characteristics

Issues	Management Type		
	Ownership	Operations	Contract Services
Complete control of the system	●		
Limited control of the system		●	●
Does not require SMA approval			●
Must prepare system master or facility plans	●		
Possible access to public funding	●		
Distribution of costs (economics of scale)	●	●	●
SMA may limit the services it chooses to provide			●
Contracts may be developed on a case by case basis			●

SMA = Satellite Management Agency or in this case the MOU Parties or one of the MOU Parties

- **Management Capability.** The managers of successful water and wastewater systems are dedicated to providing the best possible service for their customers. This dedication may take many forms, such as an entrepreneurial spirit or aggressive pursuit of information and funding. These managers are active participants in local and regional activities and understand the importance of maintaining communication with their customers, and with state, regional, and local agencies.
- **Ability to Respond Quickly.** Effective water and wastewater systems are quick to respond to problems, adapt to external influences and take risks with new ideas. They are continually applying improvements without need of a formal program prior to implementation.
- **Financial Viability.** A key factor for a water and wastewater system to achieve or retain viability is to adopt and use business principles to guide their financial practices. Some of these financial practices include: (1) developing and using a system operating budget, (2) guarding against cash flow fluctuations (shortfalls) by funding a reserve account, and (3) guaranteeing their ability to finance and make emergency and routine repairs or replacement of system components by completing capital improvement planning.

5.4 Alternatives Analysis Process

Alternative concepts were identified through a series of workshops with the Management Committee and the Governance Committee. Initial screening criteria were developed and

applied to the alternative concepts for the purpose of identifying fatal flaws and screening out infeasible options. The screening criteria were applied in a pass/fail analysis. The intent was to carry forward to the evaluation process a focused list of reasonable alternatives reflecting a wide range of viable solutions.

5.4.1 Evaluation Process

As shown in Figure 5-1, a two-step evaluation process was utilized focusing on developing and screening initial alternative concepts followed by the refinement and evaluation of more specific alternatives.

The alternative concepts were developed in parallel with the preliminary screening criteria. After screening the concepts during a Management Committee workshop, initial concepts were reformulated to reflect new information and more feasible components. These concepts and supporting components were screened again. The process and results are described in this chapter. The alternative concepts which appeared to be most feasible were then developed in more detail with specific facilities and costs identified, while evaluation criteria were finalized. Chapter 6 presents the alternatives analysis and the resulting preferred alternative.

5.4.2 Project Objectives

As presented previously in this report, the problem definition was determined based on issues and concerns with the Hollister Urban Area water and wastewater resources (e.g., water quality, reliability, system improvements, and regional water resources balance). The MOU provides principles, objectives, and assumptions. These guidelines form the basis of the Master Plan screening and evaluation criteria and were used in the development of alternatives to ensure that they contributed to resolving the identified problems. These project objectives were focused on achieving the following goals:

- Improve municipal, industrial, and recycled water quality
- Increase the reliability of the water supply
- Coordinate infrastructure improvements for water and wastewater systems
- Implement the goals of the Groundwater Management Plan

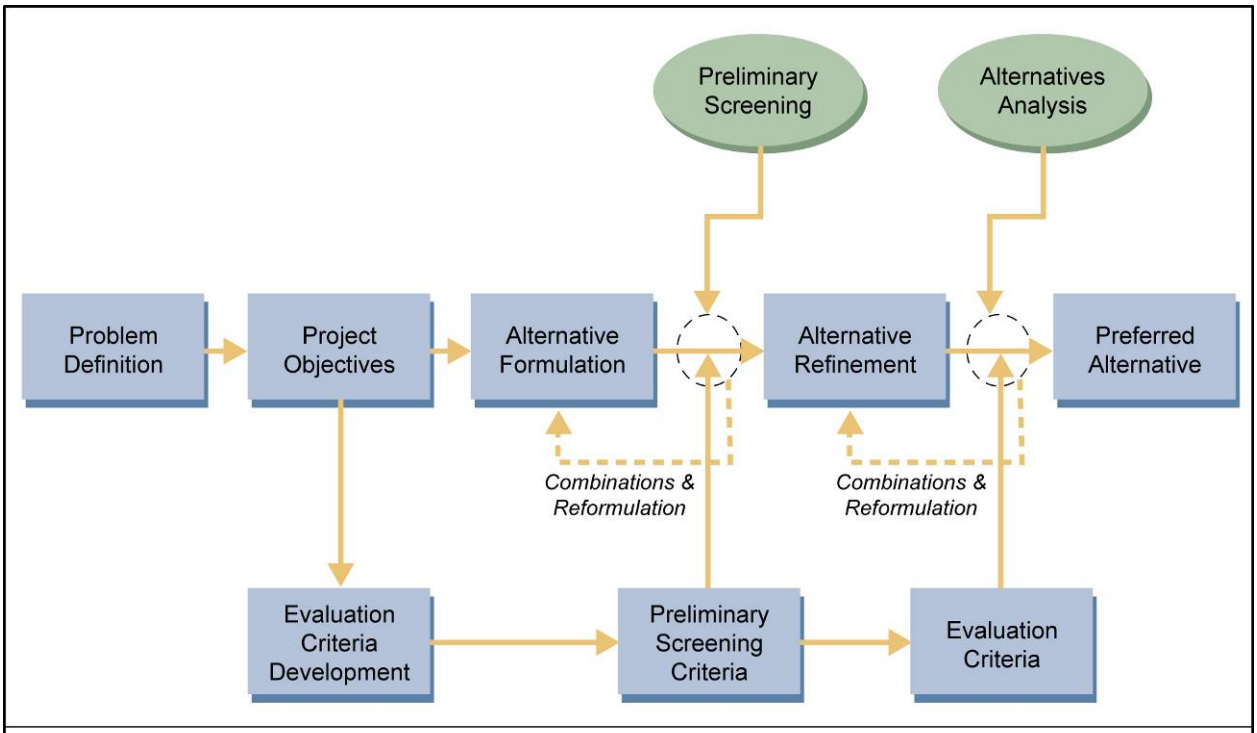


Figure 5-1. **Alternative Development and Evaluation Process**

Figure 5-1: Alternative Development and Evaluation Process

- Implement the recommendations of the LTWMP and integrate the recommended strategies into the Master Plan
- Support economic growth and development consistent with the City and County General Plans and Policies
- Consider regional issues and solutions that provide benefits to multiple agencies and their constituents

Specific MOU objectives and assumptions that reflect these goals are incorporated into the initial screening criteria described below and in the evaluation criteria presented in Chapter 6.

5.4.3 Preliminary Screening Criteria

Preliminary screening criteria were developed to reflect the project goals. These criteria were used to evaluate the alternative concepts based on the following minimum criteria:

- Measurable benefit to TDS and hardness levels
- Measurable increase in dry year reliability

- Minimum implementation risks associated with technical feasibility, institutional constraints, high costs, and environmental permitting
- The ability to be combined with other concepts

5.5 Description and Screening of Alternative Concepts

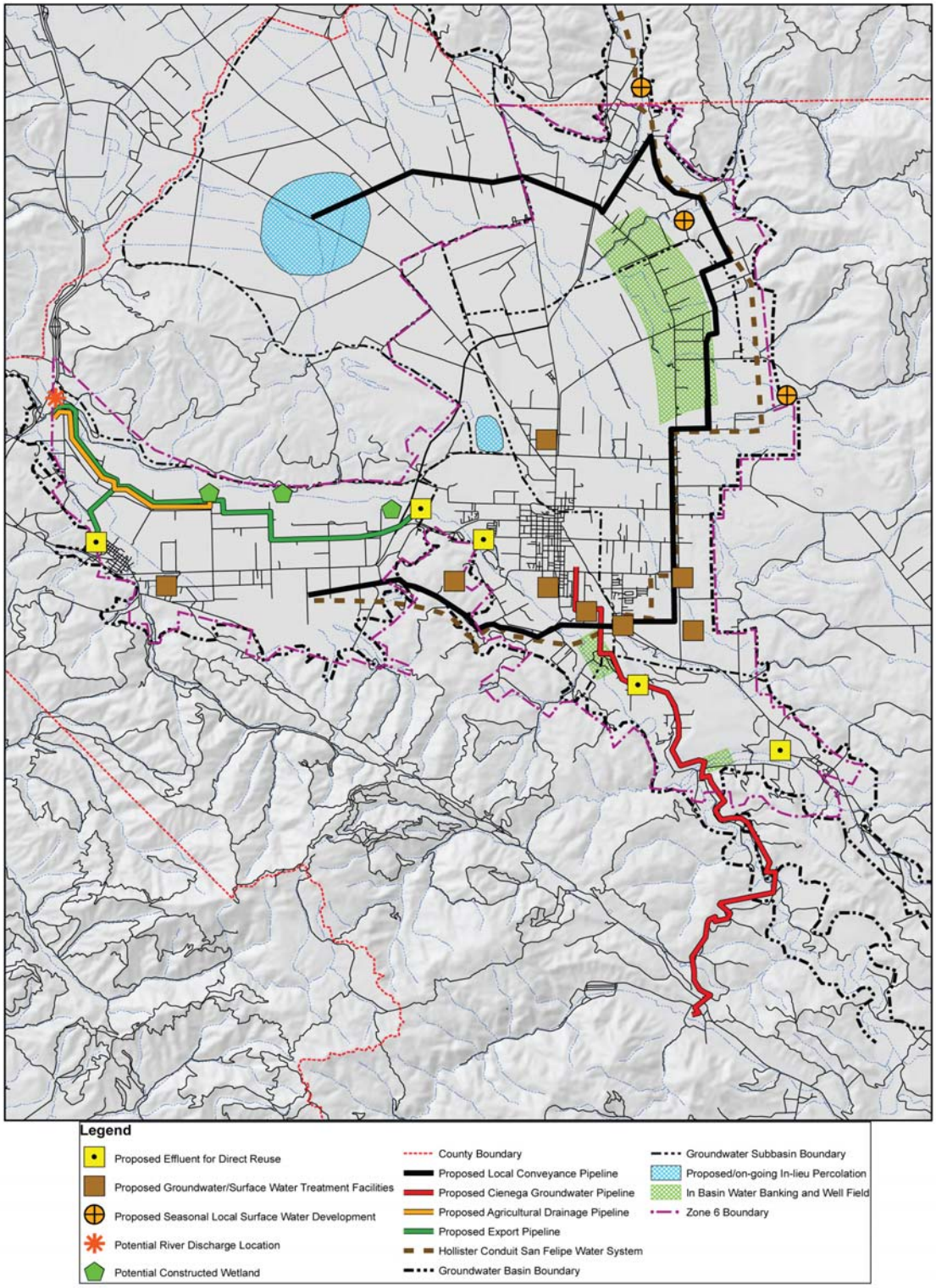
Five overall concepts were developed to meet the goals of this Master Plan. The alternative concepts were developed through the evaluation of previous and ongoing projects, initial feasibility evaluations of major components described in Section 5.2, and workshops conducted with the Management Committee, the Governance Committee, and the public. The concepts were centered on the water supply and water quality aspects of the problem definition. Solving the water supply and water quality issues allows for implementation of wastewater management and water recycling. Figure 5-2 illustrates many of the facilities and locations included in the concept descriptions.

For each concept, a range of alternative configurations was assumed and is generally described in the following subsections. The results of the preliminary screening process are described at the end of each alternative concept or alternative component within a concept, and are summarized in Table 5-2 at the end of this chapter. In addition to the development and preliminary screening of the concepts, a baseline case has also been developed representing current and expected programs. A description of the baseline case is provided together with the results of the preliminary screening process.

The alternatives selected to carry forward to the alternatives evaluation are identified, numbered, and described in more detail in Chapter 6.

5.5.1 Base Case – Continuation of Current Programs

Alternative Description. This alternative represents the baseline case in which the MOU Parties would continue forward with only their existing facilities, projects currently in progress, and projects which are reasonably expected to occur in the foreseeable future. This alternative has been included to provide a common baseline by which all other alternatives can be compared and measured.



Hollister Urban Area Water and Wastewater Master Plan

Groundwater Management Plan Update
Project Elements

Figure 5-2

The existing facilities in the baseline case include all existing water and wastewater facilities. The existing water facilities, as described in greater detail in Section 2 of this Master Plan, include existing groundwater wells, the Lessalt WTP, the City's four storage reservoirs and SSCWD's three reservoirs, two pressure reducing pressure sustaining stations in the City and seven in SSCWD, and the existing water transmission and distribution systems. The existing wastewater facilities, as described in Section 3 of this Master Plan, include the collection systems, the five wastewater treatment plants and their respective disposal facilities.

The following projects or studies, which are included in the baseline case, are currently in progress:

- Construction of DWTP. The DWTP is currently under construction and is expected to be operational in late 2008 or early 2009. The DWTP will have a capacity of 5 mgd, which will be sufficient through 2023. The DWTP will provide tertiary treated, Title 22 unrestricted use, recycled water.
- Seasonal Storage Reservoir. A seasonal storage reservoir with a capacity of 800 ac-ft is currently under construction at the DWTP. This facility will provide seasonal storage for recycled water during the winter months.
- Phase 1 Recycled Water. Construction of the Phase 1 recycled water facilities is expected to begin in mid-2008 and be operational in late 2008 or early 2009. The Phase 1 facilities will convey recycled water from the DWTP to the Hollister airport where it will be used for turf irrigation.
- Upgrade of Lessalt WTP. The Lessalt WTP was originally designed to treat 3 mgd of imported CVP water using microfiltration and chlorine disinfection. The plant has been unable to achieve its design capacity due to hydraulic constraints and treated water capacity issues related to the Stage 2 Disinfectant/Disinfection Byproducts Rule (Stage 2 D/DBP). Hydraulic and process improvements will be completed allowing the Lessalt WTP to operate at its rated capacity of 3.0 mgd.
- SSCWD WWTP Upgrades. As previously described, SSCWD will upgrade their existing wastewater treatment plant in order to be compliant with the WDR Order R3-2004-0065 issued by the RWQCB and provide reclaimed water.

- SSCWD Demineralization Project. SSCWD has initiated a demineralization study to determine the most economic means of reducing the TDS concentration in the potable water supply. It is expected that SSCWD will implement some combination of demineralization and/or softening of its wells as a result of the study.

In addition to the existing facilities and the projects which are currently in progress, there are additional projects which can reasonably be expected to occur between now and 2023, including the following:

- Development of new wells. As the City of Hollister and County of San Benito grows as in conformance with their respective General Plans, water demands will continue to exacerbate the overdrafted groundwater basin conditions. It is expected that wells will continue to be drilled to provide additional water supply to support new development.
- Water distribution and wastewater collection systems pipelines. Similar to water supply, as development occurs in the Study Area, new water distribution and wastewater collection systems pipelines will be installed.
- Phase 2A recycled water infrastructure. The draft Recycled Water Feasibility Study Update included an implementation plan to have the Phase 2A recycled water program in operation in 2015. Even if the TDS goal of 500 – 700 mg/l for recycled water is not reached by 2015, there would be opportunities for blending that could sustain the feasibility of the Phase 2A infrastructure.

Preliminary Screening. The continuation of existing programs will exacerbate existing problems with respect to TDS loadings in the groundwater basin. The study area will become evermore dependant on groundwater, which has high TDS concentrations in most areas. Since no demineralization is included in the baseline case, it can be expected that residents would continue to use softeners to combat high TDS concentrations leading to high TDS in the wastewater effluent. Although the new DWTP will produce Title 22 unrestricted use recycled water, the TDS in the recycled water will be high (e.g., 1200 – 1500 mg/l). Without implementation of demineralization, the recycled water program would be limited by the ability to blend with higher quality water. Any application of recycled water or other supply with similar or worse water quality will continue to degrade the groundwater basin by increasing salt loadings, particularly TDS levels.

Continuation of existing programs would not result in a measurable increase in reliability of water supply during drought years. Again, this baseline concept is provided in this analysis as a point of comparison and measurement for alternative solutions to the Hollister Urban Area water and wastewater challenges.

5.5.2 Concept 1 – Increase Use of Imported Surface Water

5.5.2.1 Purchase, Exchange, or Transfer Imported Supplies

Alternative Description. Currently, imported CVP M&I supplies are often reduced to 86 percent of contract amounts and can be as low as 50 percent during critically dry years as was illustrated in Figure 2-3. The reliability of the existing CVP supply is expected to decrease further over time, therefore requiring supplemental supplies to maintain the current level of reliability.

This concept includes a long-term transfer and/or purchase of additional imported CVP and/or a new State Water Project (SWP) supply. A significant quantity of new supply would be needed to augment the existing supplies on an average annual basis to meet the TDS and hardness goals uniformly throughout the M&I system.

This concept is a supply option; storage is needed to make it into a feasible alternative. The water could be stored (banked) outside the County and made available during times of reduced CVP deliveries. The water could be banked in the Kern Water Bank, Semitropic Water Bank, or an equivalent basin managed for this purpose. Banking of this water outside of the basin allows for the purchase of wet year or above average year water that is more readily available, which is then stored for extraction or in-lieu delivery during dry years when it is needed by the Hollister Urban Area. Even though the quality of the new imported water (and current CVP supply) is good, demineralization of wastewater would be needed to meet the recycled water quality goals due to residential and wastewater treatment contributions.

Institutional arrangements are needed with the SCVWD and USBR (and the Department of Water Resources (DWR) if a state contractor is transferring its supply), along with the contractor (or a contracting wholesale agency). Wheeling charges would be imposed by the USBR, south of Delta transfer fees are administered by the State, and the contractors would need to be compensated.

This alternative could also incorporate water management strategies being developed for the Pajaro River Watershed IRWMP as described in Chapter 4. The IRWMP is considering the export of San Benito County groundwater in exchange for PVWMA CVP supply. Different arrangements are also being considered with SCVWD. This regional option is discussed in more detail as part of Concept 4.

Preliminary Screening. This option would provide a measurable benefit to TDS levels and some level of increase in dry year reliability. A transfer alternative would be institutionally complex, but is being carried forward to the alternatives evaluation as Alternative 1A. A purchase arrangement with a non-CVP/SWP contractor with the water wheeled through the federal facilities may be feasible, but is more complex than a transfer arrangement. Banking out of the area is the most feasible storage option for the newly obtained supplies. It is not recommended that this water be stored in–basin because of the risk of water quality degradation. Transfers, purchases, and out-of-area banking would involve significant institutional arrangements and costs to purchase, store, extract, treat, and deliver the water when needed. More detailed information is also required on the capacity constraints of the Hollister Conduit shown on Figure 5-2. A study is currently in progress by the SBCWD to evaluate the conduit capacity.

5.5.2.2 Exchange Imported Agricultural Water for Municipal Use

Alternative Description. Buy-in from current agricultural CVP users would be required to fallow land, take delivery of recycled water from the City wastewater treatment plant, or take delivery of groundwater. All options would rely on a similar quantity of CVP agricultural contract water being offered in exchange as an M&I supply.

The reliability of the allocations for CVP agricultural contractors differ from M&I allocations and have typically been 65 to 70 percent of the contract amount with zero percent of the entitlement available during critically dry years as shown on Figure 2-3. This supply is not currently available at the required quantities as an agricultural supply due to the higher level of curtailment required during shortages. If possible the supply would be converted to an M&I supply with its more favorable curtailment schedule. However, the existing shortage schedule is being reviewed by USBR.

Current agricultural CVP users could take recycled water in exchange for CVP agricultural contract water, or the two source waters could be blended. Likewise, groundwater could be blended with CVP water, which would result in a lower TDS than just groundwater. As yet another option, CVP water could be blended with both recycled water and groundwater and used for agricultural purposes. In all cases, the quantity of CVP water being replaced with recycled water and/or groundwater could be reallocated for M&I use. Long-term blending of recycled water would require that the MOU Parties relax the MOU blending objectives as blending is currently only permitted as a short-term solution.

This concept involves reallocation of existing CVP entitlements from agricultural water. Any such reallocation would be subject to approval of the SBCWD Board of Directors. This concept would also require the addition of new surface water treatment capacity.

Preliminary Screening. This option would provide a measurable benefit to TDS and hardness levels and some level of increase in dry year reliability. The negotiations to complete an in-County transfer, particularly with a fallowing alternative, are anticipated to be complex and protracted. The concept of fallowing agricultural lands to free up CVP water for M&I needs is not considered further.

Reallocating CVP water for M&I use in exchange for the agricultural use of recycled water, alone or blended, reflects the LTWMP recommendations and the Master Plan water quality goals. This option will be carried forward as Alternative 1B. Up to 4,200 af/yr of recycled water may be available for exchange with CVP supplies in 2023.Reallocating CVP water for M&I use in exchange for blended groundwater and CVP water would result in a measurable benefit to TDS and hardness levels. This concept provides some level of increase in dry year reliability for agricultural users due to the increased reliability of groundwater, but not for M&I which would become more dependent on the less reliable CVP supply.

5.5.2.3 Reallocate Municipal Supply

Alternative Description. As described in Chapter 2, current entitlements for domestic and municipal accounts total 9,763 af/yr which is greater than the 8,250 af/yr USBR contract amount. However, user requests, allocations, and usage are less than the CVP contract amount. One of the biggest differences is for the Domestic Small User Accounts. These accounts are for parcels less than 10 acres and have an entitlement of 1.2 af/acre/yr. However, this amount

is not fully utilized. Therefore, there is the potential to free up some CVP M&I supply if approved by the SBCWD Board of Directors. The estimated quantity of water could be up to 1,253 af/yr based on the current entitlement of 1,579 af/yr and a current usage of 126 af/yr. With the continuing development of five acre parcels within the San Felipe Distribution System, this over-commitment of CVP water will increase in the future. Moreover, recycled water from the future SSCWD wastewater treatment plant could be supplied to the Ridgemark and San Juan Golf Courses, thereby reducing their dependence on CVP water. The residual CVP supply could then be reallocated for other municipal uses. This would need to be further evaluated to determine the timeframe and quantities of CVP water that could be reallocated.

This concept involves reallocation of existing CVP entitlements from domestic and municipal water. Any such reallocation would be subject to approval of the SBCWD Board of Directors. This concept would also require the addition of new surface water treatment capacity.

Preliminary Screening. Reallocation of CVP entitlements for domestic and municipal accounts would provide a measurable benefit to TDS and hardness levels but does not increase dry year reliability.

5.5.3 Concept 2 – Utilize Local Surface Supplies

Capturing intermittent creek flows within the County could contribute additional supplies to the Hollister Urban Area. Utilizing existing reservoirs, reclaiming quarries for storage, managing in-basin aquifer storage and recovery (ASR) or recharge facilities, and constructing a new reservoir were all considered for providing storage for new and existing water supplies. The concept of utilizing local surface supplies requires the combining of various supply, storage, and treatment options to create a viable alternative. The location of the supplies and facilities included in this concept are shown on Figure 5-2.

5.5.3.1 Capture Intermittent Creek Flows

Alternative Description. Local surface waters are only available in the winter and late spring. These local supplies include SBCWD's Arroyo Dos Picachos surface water right, and a new surface water right needed on Arroyo Los Viboras and Pacheco Creek. The supplies may be developed using seasonal diversion dams (e.g., inflatable dams, rehabilitation of an existing structure) along with earthwork to create a small impoundment upstream of the diversion structure or traditional wells adjacent to the streams. In-stream collectors (e.g., Ranney

collector wells or infiltration galleries) are not likely to be feasible due to unfavorable creek bed conditions of the local streams for this purpose. Potential environmental impacts to in-stream and riparian areas may be associated with the construction of facilities.

These supplies would be directed to a recharge area (in-stream recharge or ASR), conveyed to the Hollister Conduit or new conduit due to capacity limitations for delivery to a new WTP for treatment before delivery to M&I users, or conveyed in the Hollister Conduit to San Justo Reservoir. A pump station is needed to lift the supply into a new conveyance facility.

The Arroyo Dos Picachos and Arroyo Los Viboras are located northeast of the study area as shown on Figure 5-2; they are tributaries of Tequisquita Slough which drains to the Pajaro River. According to 1954 data, TDS levels in Arroyo Dos Picachos may be 500 mg/L. SBCWD holds an existing water right to divert up to 4.75 cfs from December 1 to May 1 from Arroyo Dos Picachos. If the 4.75 cfs were available for the full period, a total of up to 1,422 af/yr may be available. According to the GMP Update, the SBCWD's 1,422 af/yr water right may be available during most wet and above normal years.

Based on 1954 data, TDS levels of Arroyo Los Viboras may be 360 mg/L. According to the GMP Update, there may be up to 1,377 af/yr of unadjudicated seasonal water rights available during an average year from Arroyo Los Viboras. Use of the unadjudicated wet season water would require coordination with Pacheco Pass Water District (PPWD) and development of any institutional arrangements for the use of an existing diversion structure. A water right filing for any remaining quantity would be required.

According to the GMP Update, Pacheco Creek, shown on Figure 5-2, may have an average of 25,551 af/yr supply available. According to 1954 data, TDS levels may be 235 mg/L. Use of the unadjudicated wet season water would require coordination with PPWD and development of any institutional arrangements for the use of an existing diversion structure (located just north of the Santa Clara County line). A Hollister Irrigation District water right would need to be reviewed and evaluated for transferability to the SBCWD, and/or a water right filing for any available quantity would be required. The Pacheco Subbasin currently has a high water table with additional natural recharge currently being rejected; the supply could not be percolated in place. Steelhead could also be present in Pacheco Creek. If channel diversions occur, steelhead could become stranded and activities in channels could result in direct take of fish. Additional

environmental analyses are needed to determine the implementation risks associated with this concept.

Preliminary Screening. This option would provide a measurable benefit to TDS and hardness levels. The Arroyo Dos Picachos and Arroyo Los Viboras options do not provide an adequate supply under normal years, dry years, nor multiple dry years, therefore they must be combined with each other and/or Pacheco Creek supplies as well as a storage component. There appears to be an adequate unadjudicated seasonal supply from Pacheco Creek. The local supplies are not likely feasible to be percolated in-place due to its distance to beneficial urban area wells and aquifer storage capacity restrictions. For Alternative 2A, it will be assumed that a diversion facility is developed on all three of the streams, the supply conveyed to a new WTP during the winter with the excess treated supply stored in an aquifer proximate to the urban demands using ASR. This stored water would be demineralized when pumped from the groundwater basin. This option has implementation risks associated with water rights, high costs, and environmental permitting, and must be further studied.

5.5.3.2 Utilize Existing Reservoirs

Alternative Description. The SBCWD operates Hernandez and Paicines Reservoirs in the San Benito River watershed to store runoff and release it during the dry season to augment groundwater recharge. Hernandez Reservoir is located on the San Benito River, 43 miles south of the City. Paicines Reservoir is located near Tres Pinos and stores water diverted from the San Benito River for percolation releases to Tres Pinos Creek as shown on Figure 5-2. The diversions consist of natural flow in the river and augmented flows released from storage in Hernandez Reservoir. According to the GMP Update, the bottom of the Paicines Reservoir is permeable and seepage losses are significant (approximately 80 percent of the total reservoir outflow is to evaporation and seepage).

More local or CVP supply may be captured by better utilizing the existing reservoirs. These concepts include reoperating Hernandez Reservoir and rebuilding Paicines Reservoir to capture and/or retain more local supply and use this supply to recharge the groundwater basin. SBCWD has modified its operation of Hernandez and Paicines Reservoirs in recent years to avoid excessive percolation along the San Benito River below Hospital Road when groundwater levels are high. It is effective to store water until dry periods when water levels are

somewhat lower and additional percolation is beneficial. The local supplies contributing to these reservoirs have TDS levels of approximately 700 to 800 mg/L.

The 10,300 ac-ft San Justo Reservoir, shown in Figure 5-2, is used exclusively to store and regulate imported CVP water. San Justo Reservoir has seepage losses estimated to be approximately 3,000 af/yr. Modifying and reoperating this reservoir to capture more high quality CVP water when it is available would provide better water quality than that provided by the Hernandez and Paicines Reservoirs. Additional studies are needed to assess the potential increase in reliability by modifying reservoir operations.

Preliminary Screening. Because of the amounts of water needed to meet the reliability and water quality goals, the storage options relying on runoff do not provide an adequate supply under normal years, dry years, nor multiple dry years. In addition, Hernandez and Paicines Reservoirs are not located close to an imported supply or other higher water quality source. Therefore, these options are not considered further. San Justo Reservoir, if rehabilitated and reoperated, could store additional imported supplies from the Hollister Conduit if conduit capacity constraints do not exist when the water is available. The San Justo Reservoir storage option could provide a measurable benefit to TDS levels if combined with a high quality supply option, but will not be carried forward as a stand-alone alternative.

5.5.3.3 Reclaim Quarries for Storage

Alternative Description. Reclaiming sand and gravel extraction quarries for use as storage facilities is a storage option. More information is needed on the storage capacity potential, impacts to groundwater quality, and the timing of availability (end of extraction period).

Preliminary Screening. According to the Groundwater Management Plan Update, the quarries may not be available for approximately 100 years. There are no anticipated TDS benefits associated with this concept if local supplies were to be stored. This option is not considered further.

5.5.3.4 In-Basin Aquifer Storage and Recovery

Alternative Description. This is a storage and treatment option without a supply. ASR facilities are specially designed wells that operate as both injection and extraction wells. ASR could be located in or near the Hollister Urban Area in areas of potential overdraft, but would

require additional studies to determine appropriate locations with aquifer conditions which allow for injection and extraction.

Using ASR would require treatment of the source waters, injection into a groundwater basin, and extraction. Demineralization or softening of the extracted water is required prior to distribution if the injected waters blend with a lower quality water during storage. A 1999 SBCWD study indicated that the San Juan Creek vicinity may be an appropriate location for ASR with benefits to the Hollister Urban Area. Because treatment of the supply prior to injection is required, proximity to a WTP is important. Land acquisition may be required to accommodate new facilities at existing wells.

Preliminary Screening. Although this option requires a supply, it provides a measurable increase in dry year reliability. It may be a feasible component in combination with other options if the water quality of the provided supply is not significantly degraded during storage. It has some implementation risks due to the lack of information on a suitable site. ASR will therefore be included with Alternative 2A, utilization of local surface supplies. It is recommended that an ASR pilot study be conducted if this alternative/component is recommended for implementation.

5.5.3.5 In-Basin Artificial Recharge

Alternative Description. This is a storage and treatment option without a supply. A new unidentified water supply would be obtained and percolated in artificial recharge basins and stored in an ASR facility located in or near the Hollister Urban Area. This option requires extraction wells and the demineralization or softening of the pumped water prior to distribution to its overall water quality. A significant amount of land would be required for construction of the artificial recharge basins. Siting facilities to recharge groundwater aquifers that supply the urban area provides the greatest benefit to M&I pumping.

Preliminary Screening. This option has a high risk associated with implementation due to the technical feasibility requirements of siting, as described above, and the minimal benefit to water quality, and is therefore not considered further. However, it may be combined with other options in the future.

5.5.3.6 New Off-Stream Reservoir

Alternative Description. This is a storage option without a supply. The GMP Update recommended a new seasonal storage reservoir on Pacheco Creek, as shown on Figure 5-2; however, this perennial stream may have a variety of environmental concerns. A new pumped storage reservoir on Arroyo Dos Picachos near Lone Tree Way may also be considered. Stored surface water would be treated at a new WTP prior to integration into the potable distribution system. Storing a local supply with higher TDS levels than Pacheco Creek would not improve TDS levels without adding demineralization or softening to the surface water treatment process.

Preliminary Screening. The institutional constraints (implementation risk) with developing a new dam and reservoir eliminate this option from further consideration. These constraints may include high costs which cannot be phased, environmental and other permitting requirements, and risk of delays associated with public concerns over building new dams on perennial streams.

5.5.4 Concept 3 – Demineralization of Urban Wells

Alternative Description. With this concept, groundwater would be demineralized or softened to reduce TDS and hardness levels. Individual wellhead treatment is a viable concept for the demineralization option. Softening of the groundwater could also be utilized as a treatment process instead of demineralization. Softening, however, requires centralized treatment similar to a surface water treatment plant which would increase costs. Softening the water supply also requires demineralizing the wastewater effluent to meet recycled water quality objectives, thus also increasing costs. Moreover, preliminary analyses indicate that softening, alone, does not achieve the hardness goals. However, it should be noted that a combination of softening and demineralization could potentially be used to achieve hardness and TDS goals.

The treated supply would be blended with the existing CVP and remaining groundwater supplies in a the distribution system. Demineralization could be implemented at many wells sites to deliver uniform water quality by the 2015 target date.

As an alternative to meeting the water quality goals in 2015, and to reduce infrastructure requirements, one or more wells could be selected for an initial demineralization program. This approach would require that the MOU Parties relax the MOU objective to provide uniform water quality.

Brine concentrate is a byproduct of the demineralization process which must be disposed of. Approximately 10 to 20 percent of the demineralized supply becomes brine. Brine would be collected from the wells with demineralization treatment and conveyed to evaporative drying beds or deep injection wells. The finished product would be removed from the beds for land disposal.

Preliminary Screening. Conveying groundwater from existing wells located throughout the City and SSCWD distribution systems would require extensive piping to implement the softening option. The demineralization option provides a measurable benefit to TDS and hardness levels and a measurable increase in dry year reliability. Given the City's and SSCWD's existing water supply infrastructure, demineralization appears to be a more appropriate treatment process than softening and will be carried forward as Alternative 3A. Because of the higher costs associated with softening, the uncertainty of implementation of softening as a regional solution increases; therefore a regional softening solution was not considered further. If, during implementation of a demineralization solution, softening becomes more cost effective, it should be reconsidered.

Initial demineralization at a limited number of wells would provide a similar benefit to TDS and a measurable increase in dry year reliability and would require less extensive conveyance piping to meet the uniform water quality goal and will be carried forward as Alternative 3B. Brine disposal is an implementation risk that must be studied further.

5.5.5 Concept 4 – Utilization of Water from High Groundwater Basins

The Bolsa Subbasin shown on Figure 5-2 has groundwater levels that vary throughout the area. High water levels are found in the northeast and low levels to the south. This area is predominately agricultural and does not receive imported surface water. TDS levels are approximately 600 to 800 mg/L.

The Pacheco Subbasin also shown on Figure 5-2 also has high water levels and TDS levels of approximately 600 mg/L or lower. Flowing wells have been present along Lovers Lane and Shore Road (Pacheco Subbasin and part of the Bolsa Subbasin east of the Calaveras Fault) since the late 1990's and poor drainage conditions have posed problems for septic systems. This area receives imported surface water.

As imported CVP water was introduced and used in the San Juan Subbasin, there was continued percolation from wastewater treatment plant effluent and applied water and insufficient pumping of the groundwater to keep groundwater levels below the surface. The soil structure, clay layers existing at 3 to 12 feet below the ground surface, results in poor soil drainage. The San Juan Subbasin has very high water levels and TDS levels of approximately 1,200 mg/L with some wells with concentrations of 1,500 mg/L.

Alternative Description. One option for the utilization of water from high groundwater basins would require groundwater conveyance from existing or planned wells in the Bolsa, Pacheco, or San Juan Subbasins to a centralized location for treatment, then export to the Hollister Urban Area. Construction of new well(s) or purchase of existing agricultural wells is required to meet capacity needs. Centralized treatment could be located prior to or during conveyance to the urban area. Since the number of wells would be minimized and the source imported to the urban area through one transmission facility, centralized softening treatment would be feasible for this option; however, demineralization could also be considered for treatment.

Another option for the utilization of water from high groundwater basins is to use the groundwater in these basins as exchange water with other CVP contractors or users. CVP water users such as individuals in the Pacheco area or CVP contractors such as SCVWD, and future water contractors such as the Pajaro Valley Water Management Agency (PVWMA), could receive this high groundwater supply in exchange for providing a portion of their CVP supply to San Benito County. This option includes negotiating an exchange agreement with PVWMA, pumping from wells to be located near Lovers Lane, and conveying the water through Pacheco Creek to Miller Canal then to the Pajaro River. PVWMA would then provide its CVP allocation for a similar quantity for M&I use in the Hollister Urban Area.

As an alternative to demineralization of water from the high groundwater basins, the groundwater could be blended with recycled water. Groundwater would be conveyed from existing or planned wells in the Bolsa Subbasin south along Business Highway 156 to Flynn Road. A blending and storage facility would be located in this vicinity. The Phase 1 recycled water transmission system is planned to terminate along Wright Road; this line would be extended north along Business Highway 156 to the blending facility. Blended Bolsa groundwater and recycled water would be distributed through a dual water system in new

commercial and industrial developments in the airport business park, along Business Highway 156, and in the vicinity of the merging of Business Highway 156 and State Route 25.

Preliminary Screening. The concept of utilizing groundwater from high water basins provides a measurable increase in dry year reliability and the treated groundwater provides a measurable increase in water quality. However, the substantial costs associated with constructing a transmission pipeline to convey groundwater from the high water basins to Hollister make this alternative less desirable and more difficult to implement than pumping groundwater from urban wells (as described in Concept 3). Therefore, this option is not carried forward. However, this option should be considered as part of a long term water supply program. The exchange option provides a measurable benefit to TDS levels and a measurable increase in dry year reliability, but has significant risks associated with implementation due to the complexity of working with other agencies.

The alternative of blending groundwater with recycled water for municipal non-potable use supports the City's plan to use recycled water as a non-potable supply. However, it is not cost effective within the planning horizon of this master plan compared with Concept 1, using recycled water to offset CVP supplies. Nonetheless, in conjunction with Concept 1, as some of the agricultural lands utilizing recycled water convert to urban uses per the General Plan, the recycled water would continue to be used, but for outdoor urban irrigation and indoor industrial applications. The concept provides a highly reliable dry year water supply which also benefits the Bolsa groundwater basin and reduces the increase in pumping requirements within the overdrafted Hollister West basin. There are no costs associated with additional treatment of these supplies, although facilities are needed for blending, storing, and conveyance. This concept may be best utilized beyond the planning horizon of the master plan as the non-potable demands increase in these areas and agricultural lands are converted to urban uses.

5.6 Preliminary Screening Results

The application of the preliminary screening criteria was described above for each alternative concept. A summary of the preliminary screening results is shown in Table 5-2. The alternatives to be carried forward to the alternatives analysis described in Chapter 6 are based on the reformulation or combining of alternative concepts or components analyzed and described above. The alternatives carried forward include the following:

- Alternative 1A – Exchange agricultural CVP supply with recycled water
- Alternative 1B – Reallocate Unused CVP M&I Entitlements
- Alternative 2A – Capture intermittent creek flows
- Alternative 3A – Demineralization to meet MOU goals
- Alternative 3B – Phased demineralization of urban wells

Table 5-2: Preliminary Screening of Alternative Concepts

Initial Screening of Alternatives					
Concepts/Alternatives	Measurable TDS Benefit	Measurable Increase in Dry Year Reliability	Minimize Implementation Risk	Viable as a Component with other Options	Notes
Baseline Concept. MAINTAIN CURRENT PROGRAMS					
Continue Current Programs	✗	✗	✓	Y	Does not meet preliminary screening criteria for TDS improvement or increase in dry year reliability. Carried forward only to serve as point of comparison for other alternatives.
Concept 1. INCREASE IMPORTED SURFACE WATER					
Purchase or Transfer Imported Supplies					
Purchase Imported Supplies	✓	✓	✗	N	Needs significant quantity of dry year supply to meet reliability goals
Exchange Imported Agricultural Supply for Municipal Use					
Retire Agricultural Land	✓	✗	✗	N	Requires significant fallowing to meet dry year reliability goals; negotiations complex
Use Recycled Water for Agricultural Supply	✓	✓	✓	Y	Supports LTWMP plan to reuse wastewater
Blend Recycled Water with CVP Water	✓	✓	—	Y	Supports LTWMP plan to reuse wastewater; more information needed on institutional risks associated with blending
Blend Groundwater with CVP Water	✓	✓	—	Y	More information needed on institutional risks associated with blending
Blend CVP Water with Groundwater and Recycled Water	✓	✓	—	Y	Supports LTWMP plan to reuse wastewater; more information needed on institutional risks associated with blending
Reallocate CVP M&I Supply					
Reallocate Unused CVP M&I Entitlements	✓	✓	—	Y	More information needed on risks associated with reallocation

Initial Screening of Alternatives					
Concepts/Alternatives	Measurable TDS Benefit	Measurable Increase in Dry Year Reliability	Minimize Implementation Risk	Viable as a Component with other Options	Notes
Concept 2. UTILIZE LOCAL SURFACE SUPPLIES					
Capture Intermittent Creek Flows					
Arroyo Dos Picachos and Los Viboras	✔	—	—	Y	Dry year supply inadequate to meet reliability goals; facilities, storage, and institutional information needed
Pacheco Creek	✔	—	—	Y	Quantity and institutional information needed
Utilize Existing Reservoirs					
Hernandez Reservoir	✕	✕	✔	N	Poor water quality; minimal reliability benefit; not carried forward
Paicines Reservoir	✕	✕	✕	N	Poor water quality; minimal reliability benefit; construction may have environmental and permitting constraints; not carried forward
San Justo Reservoir	—	✔	✔	Y	Could be combined with a storage option; more information needed on modifications and reoperation
Reclaim Quarries for Storage	✕	—	—	N	Timing of availability makes this storage option infeasible
In-Basin ASR	✔	✔	✔	Y	This is a storage option; carried forward combined with a supply option
In-Basin Artificial Recharge	✔	—	✕	N	Lack of available sites in the urban area makes this storage option technically infeasible; not carried forward
New Off-Stream Reservoir	✕	—	✕	N	This storage option has significant institutional constraints; not carried forward
Concept 3. DEMINERALIZATION OF URBAN WELLS					
Demineralize Existing and New City and SSCWD Wells	✔	✔	✔	Y	Demineralization at several well sites
Phased Demineralization of Existing and New City and/or SSCWD Wells	✔	✔	✔	Y	Initial demineralization at one or more sites requires relaxing of uniform water quality objective
Softening of Existing and New City and SSCWD Wells	✔	✔	✕	N	Softening at centralized facility is not as attractive as demineralization. Preliminary analyses indicate that softening will not meet hardness goal.
Concept 4. UTILIZATION OF WATER FROM HIGH GROUNDWATER BASINS					
Demineralize or Soften Groundwater and Import to Urban Area	✔	✔	✕	N	
Exchange Groundwater for CVP Supply	✔	✔	✕	N	More information needed on institutional risks
Blend Groundwater with Recycled Water for Agricultural and Municipal Turf Use	—	✔	✕	N	Supports LTWMP plan to reuse wastewater; but timing of availability makes this option infeasible during the planning horizon.

Legend: ✔ Meets Screening Criterion
— Needs More Information
✕ Does Not Meet Criterion and Option is Eliminated
Y Yes
N No

6.0 Evaluation of Alternatives

This chapter presents the results of the alternatives analysis including more detailed development of the alternatives that passed the initial screening, developing evaluation criteria for the alternatives analysis, and evaluating the alternatives against the criteria.

6.1 Formulation of Alternatives

6.1.1 Alternatives Resulting from Screening Process

The initial screening of alternative concepts, presented in Chapter 5, resulted in five alternatives for further consideration and analysis. Each of the alternatives builds upon the Base Case described in Chapter 5, which includes existing facilities, projects currently in progress such as the DWTP and Seasonal Storage Reservoir, and projects which are reasonably expected to occur in the foreseeable future such as new wells, the Lessalt WTP upgrades and the DWTP expansion and Phase 2A Recycled Water facilities. The Base Case projects which are reasonably expected to occur in the future are presented in Table 6-1, and have been included as a base line cost for each of the alternatives.

The five alternatives identified for further consideration and analysis are listed below and a more detailed description is provided in the following subsections.

- 1A. Exchange agricultural CVP supply with recycled water
- 1B. Reallocate unused CVP M&I entitlements
- 2A. Capture intermittent creek flows
- 3A. Demineralization to meet MOU goals
- 3B. Phased demineralization of urban wells

6.1.2 Alternative 1A. Exchange Agricultural CVP Supply with Recycled Water

Alternative 1A involves the reallocation of agricultural CVP water from current users in San Benito County to M&I use. In exchange, the agricultural contractors would take delivery of recycled water from the City's new DWTP. This alternative relies on a similar quantity of CVP agricultural contract water being offered in exchange for the recycled water supply.

Table 6-1: Alternative Facility Requirements for 2023

	Units	Base Case	Alternatives				
			1A	1B	2A	3A	3B
Raw Water Storage and ASR Facilities							
Aquifer Storage and Recovery (ASR)	ac-ft				6,580		
Water Supply Facilities							
10-in Supply Pipelines	lf				10,960		
14-in Supply Pipelines	Lf				45,000		
16-in Supply Pipelines	Lf				1,000		
CVP Water Transfer	ac-ft		4,200	1,200			
Pumping Station	hp				751		
New Wells	gpm	417	0	0	4,075	1,320	1,320
SSCWD New Well	gpm	2,000	2,000	2,000	2,000	2,000	2,000
Seasonal Dam - Arroyo Dos Picachos	ac-ft				1,420		
Seasonal Dam - Arroyo Los Viboras	ac-ft				1,380		
Seasonal Dam - Pacheco Creek	ac-ft				3,780		
Water Treatment Facilities							
Lessalt WTP Hydraulic Upgrades	mgd	3	3	3	3	3	3
Lessalt Expansion (3 to 4 mgd)	mgd			1.1			
Surface Water Treatment Plant	mgd		3.7				
Treatment For ASR System	mgd				5.9		
Demineralization	mgd		8.2	9.9	7.5	16.0	7.1
SSCWD Softening at Well #8	gpm	1,300	1,300	1,300	1,300	1,300	1,300
SSCWD Softening Plant	gpm	3,800	3,800	3,800	3,800	3,800	3,800
SSCWD Demineralization Project	gpm	2,000	2,000	2,000	2,000	2,000	2,000
SSCWD Deep Well Injection	na	X	X	X	X	X	X
Treated Water Reservoirs							
Storage to Meet Existing Demands	MG	5	5	5	5	5	5
Storage to Meet Future Demands	MG		6	6	6	6	6
Wastewater Treatment							
DWTP Expansion (4 to 5 mgd)	mgd	5	5	5	5	5	5
SSCWD Ridgemark WWTP	mgd	0.5	0.5	0.5	0.5	0.5	0.5
Recycled Water							
Phase 2A Recycled Water Project	na	X	X	X	X	X	X
SSCWD Recycled Water Project	na	X	X	X	X	X	X

The Base Case facilities are common to all alternatives.

It is assumed that the CVP agricultural supply allocated as an M&I supply would experience the same levels of curtailment as existing agricultural CVP supply. Table 6-1 presents the quantities of water required for the reallocation. A maximum of 4,200 acre-feet is available for exchange based on the recycled water effluent production anticipated for 2023. It is not expected that conveyance through the Pacheco and Hollister Conduits would pose a problem for this alternative, since CVP supply is used as a baseload supply as opposed to a peaking supply. However, the recently updated USBR hydraulic model would be used to confirm that no additional improvements would be required to eliminate capacity constraints. It is assumed that this alternative would be too costly if capacity in the Pacheco or Hollister Conduit or substantial upgrades of these conduits is required.

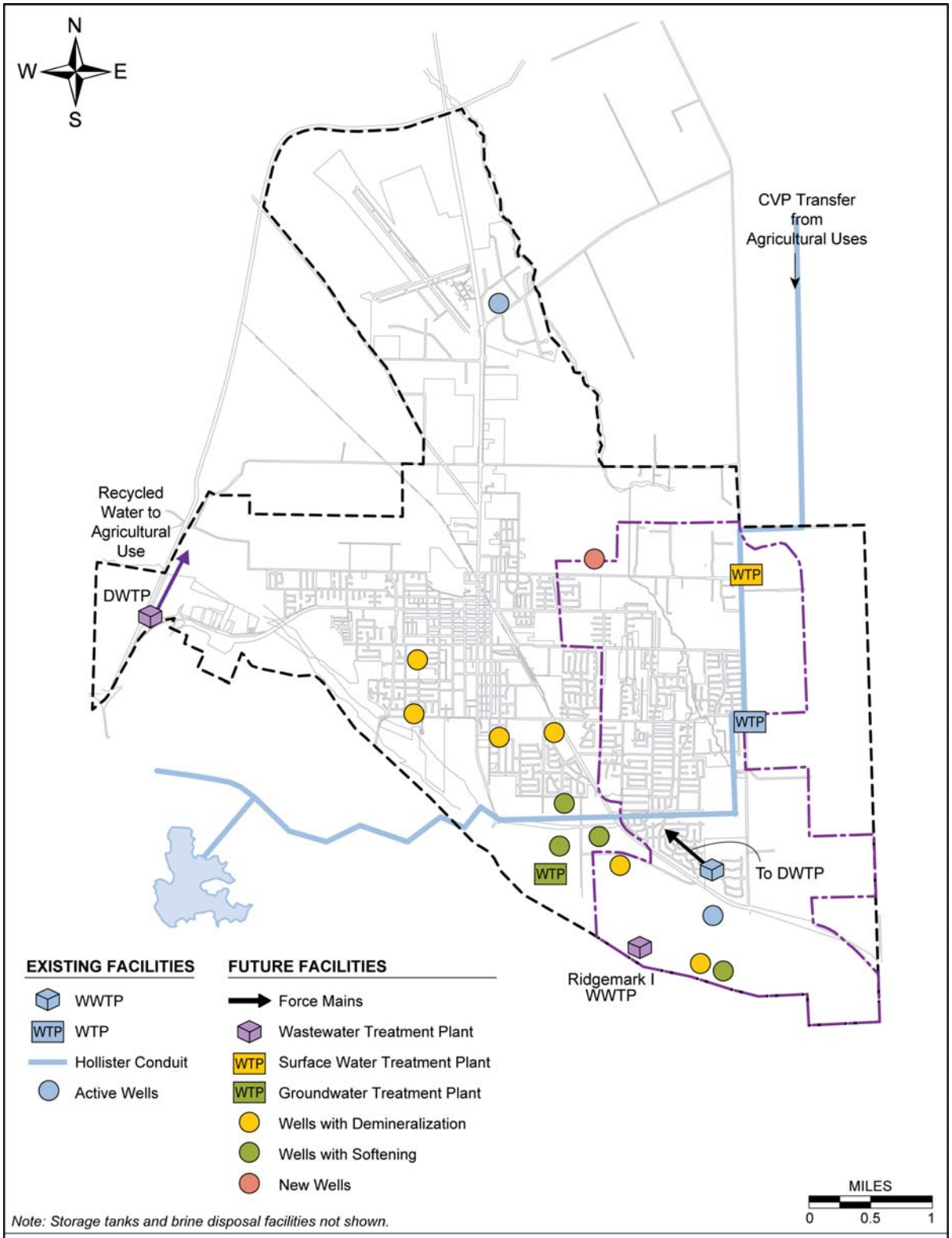
The imported water would be conveyed to the Lessalt WTP with a new WTP required for the additional supply. The Lessalt WTP would treat a portion of the new supply to use its full capacity, with the balance of the supply being treated at a new WTP. This new treatment facility may be located adjacent to the Lessalt WTP or at another location along the Hollister Conduit. Figure 6-1 presents the preliminary location of new facilities needed for this alternative.

Demineralization of the surface water is not needed due to the expected adequacy of CVP TDS and hardness levels. However, demineralization of some urban wells within the Study Area will be needed to meet the drinking water quality goals, particularly during peak demand months. This alternative will likely require lining of the recycled water storage ponds to minimize pond losses and maximize recycled water availability.

Conveyance and treatment facilities associated with Alternative 1A are presented in Table 6-1. The water supplies proposed to meet the monthly demands are presented in Figure 6-2.

6.1.3 Alternative 1B. Reallocate Unused M&I CVP Entitlements

Alternative 1B involves the reallocation of existing unused M&I CVP entitlements from domestic and municipal users in San Benito County. As described in Chapter 5, an estimated 1,253 af/yr currently allocated to Domestic Small User Accounts may be available for reallocation. It is assumed that the reallocated CVP supply would experience the same levels of curtailment as existing M&I CVP supply. Conveyance capacity constraints in the Pacheco and Hollister Conduits are similar to those described for Alternative 1A above.



Alternative 1A - Agricultural CVP Exchange

Figure 6-1

Hollister Urban Area Water and Wastewater Master Plan

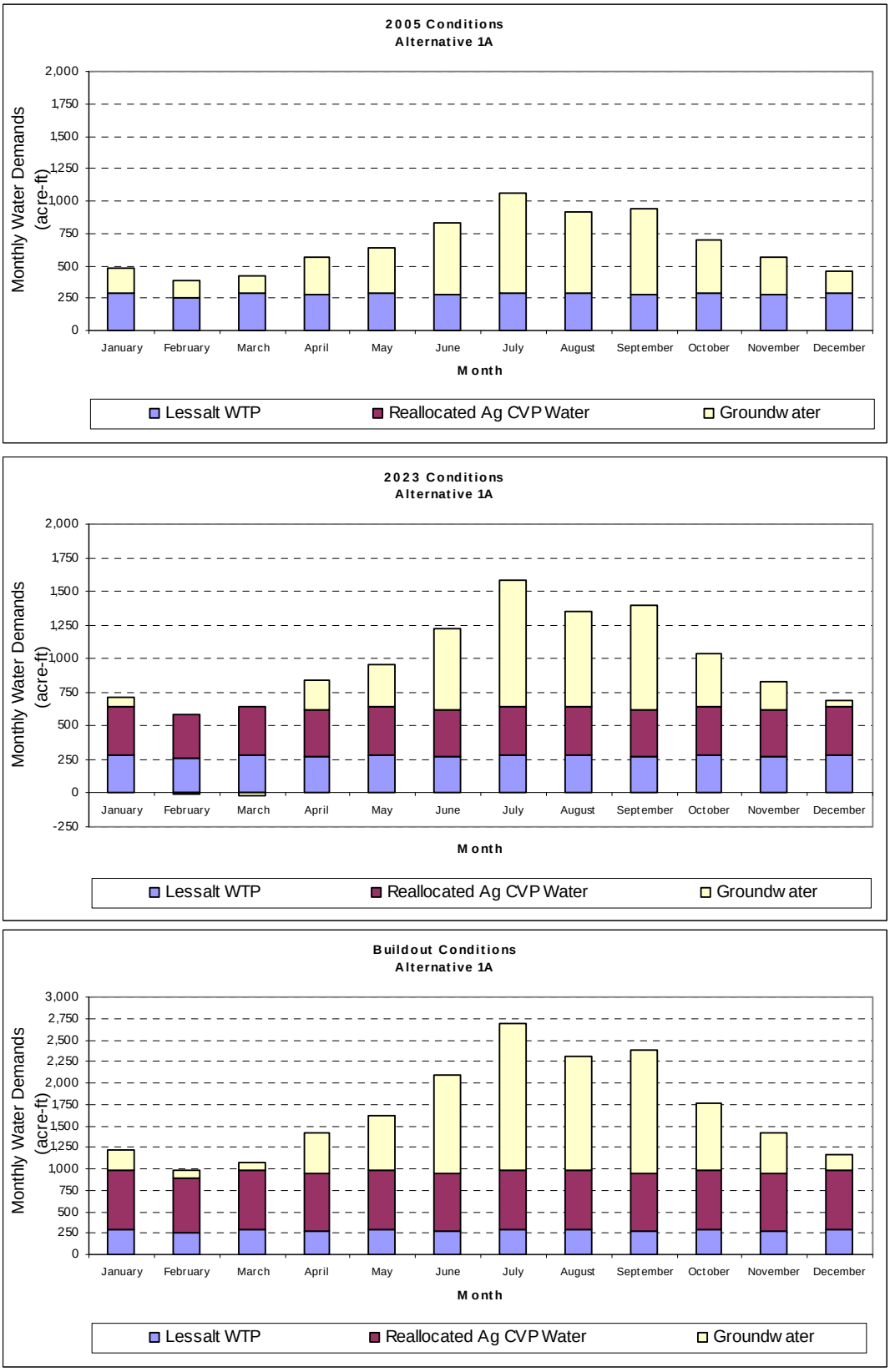


Figure 6-2: Alternative 1A. Water Supplies Proposed to Meet Monthly Demands

The reallocated water would be conveyed to and treated at the Lessalt WTP. The Lessalt WTP would require an expansion to treat the reallocated water. Alternatively, a new treatment facility could be located adjacent to the Lessalt WTP or at another location along the Hollister Conduit. Figure 6-3 presents the preliminary location of new facilities needed for this alternative.

Demineralization of the CVP water is not needed due to the expected adequacy of TDS and hardness levels. Similar to Alternative 1A, demineralization of some urban wells within the Study Area will be needed to meet the drinking water quality goals during peak demand months.

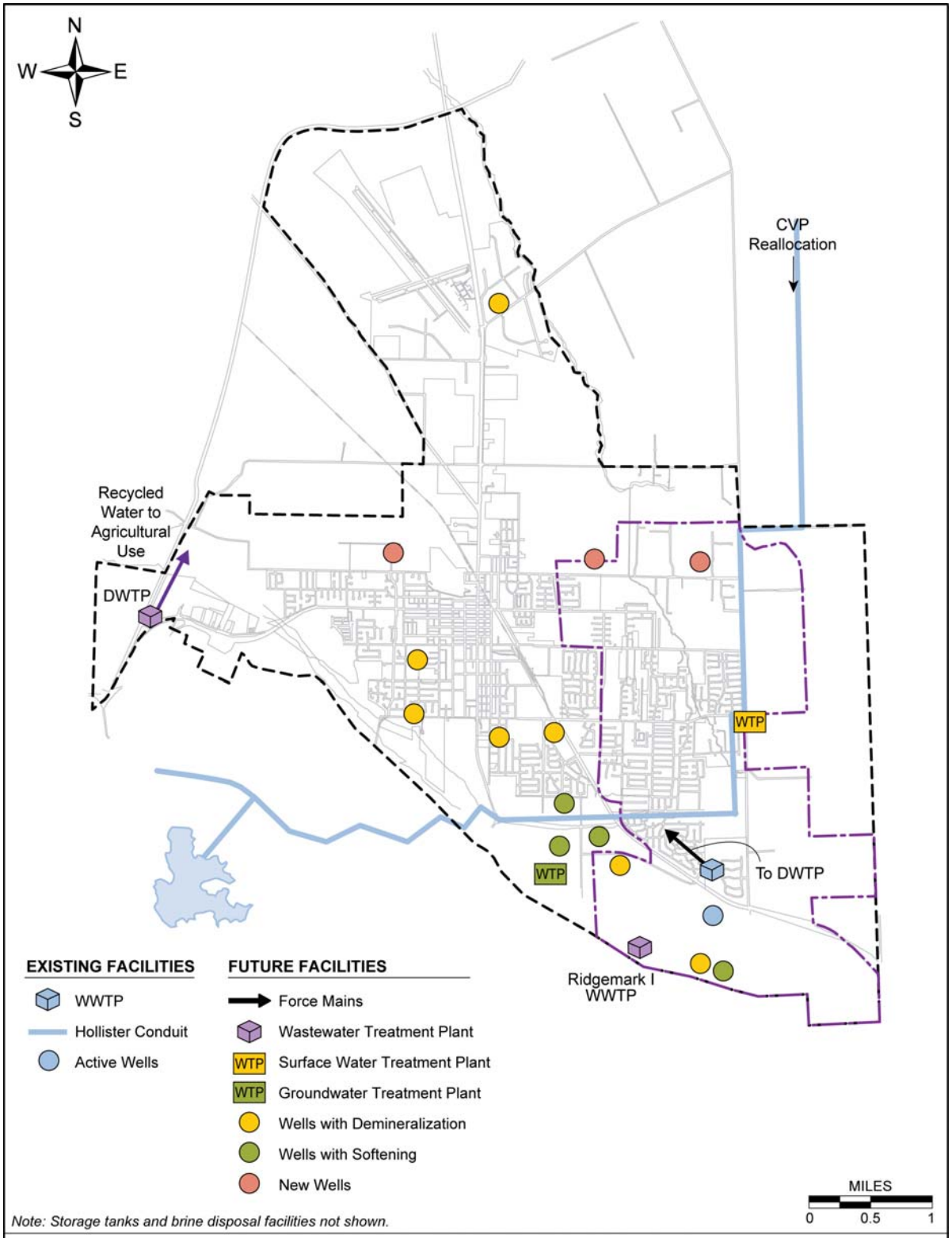
The treatment facilities associated with Alternative 1B are presented in Table 6-1 and the water supplies proposed to meet the monthly demands are presented in Figure 6-4.

6.1.4 Alternative 2A. Capture Intermittent Creek Flows

Alternative 2A relies on the development of the local streams: Arroyo Dos Picachos, Arroyo Los Viboras, and Pacheco Creek. Table 6-1 presents the quantities of water required from the local streams.

Utilizing an existing SBCWD water right to Arroyo Dos Picachos, obtaining new water rights to Arroyo Los Viboras, and transferring a water right on Pacheco Creek would be required. There are diversion dam-type facilities on Arroyo Dos Picachos and Arroyo Los Viboras which may be utilized if agreements are reached with the owners and rehabilitation or reconstruction conducted. The diversion facility on Arroyo Los Viboras may be able to store a limited quantity of water if reconstructed for this purpose. Storing local water would also require a water rights permit.

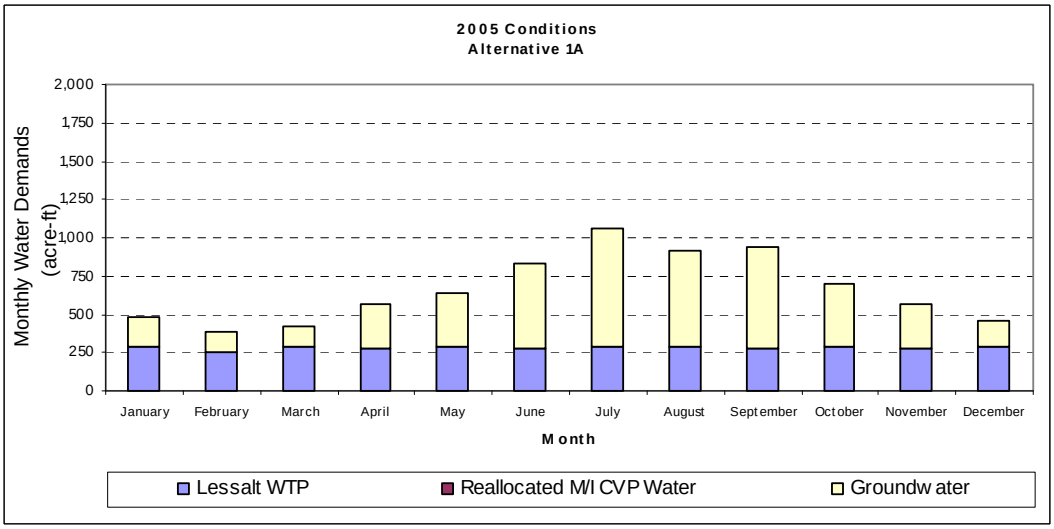
Intake, pumping, and conveyance facilities would be constructed on each stream to convey the supply for treatment. These intake and conveyance facilities would be oversized to capture supply when it is available (during the wet season, depending on the water rights obtained). The Lessalt WTP would treat a portion of the new local supply to its full capacity, with the balance being treated at a new WTP. The new WTP would likely be located between the local streams and an aquifer storage and recovery (ASR) facility located near Santa Ana Creek. Figure 6-5 presents the preliminary location of new facilities needed for this alternative.

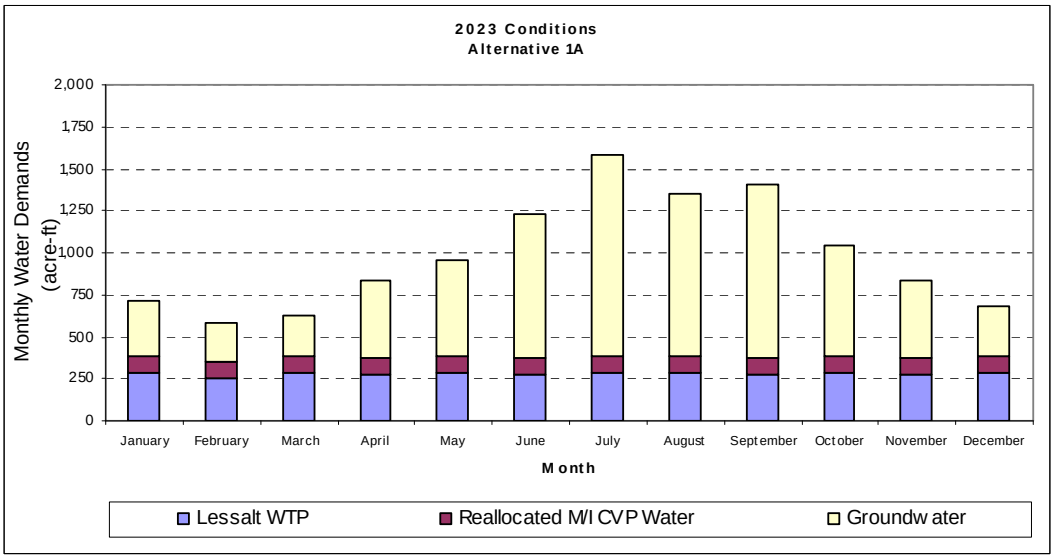


Alternative 1B - Reallocate Unused M/I CVP Entitlements

Figure 6-3

Hollister Urban Area Water and Wastewater Master Plan





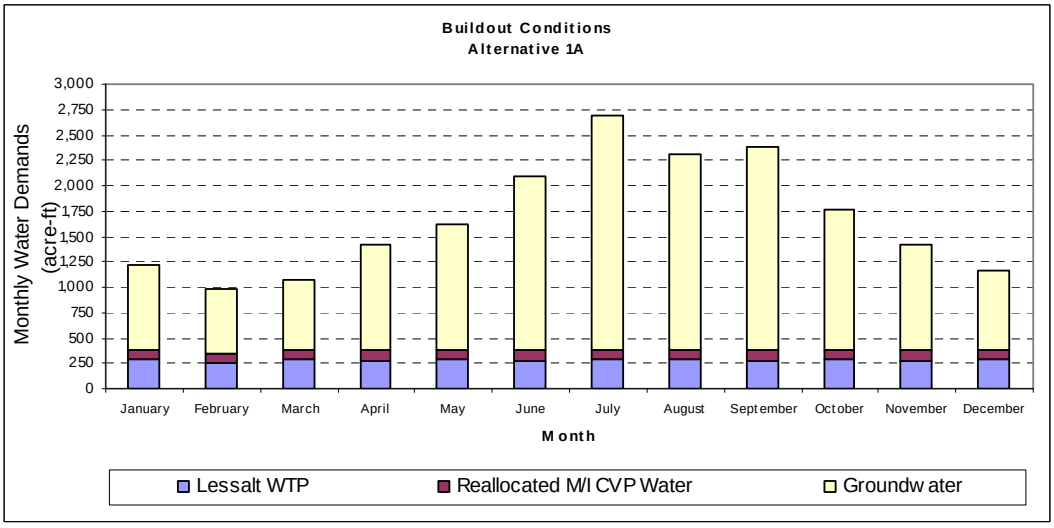
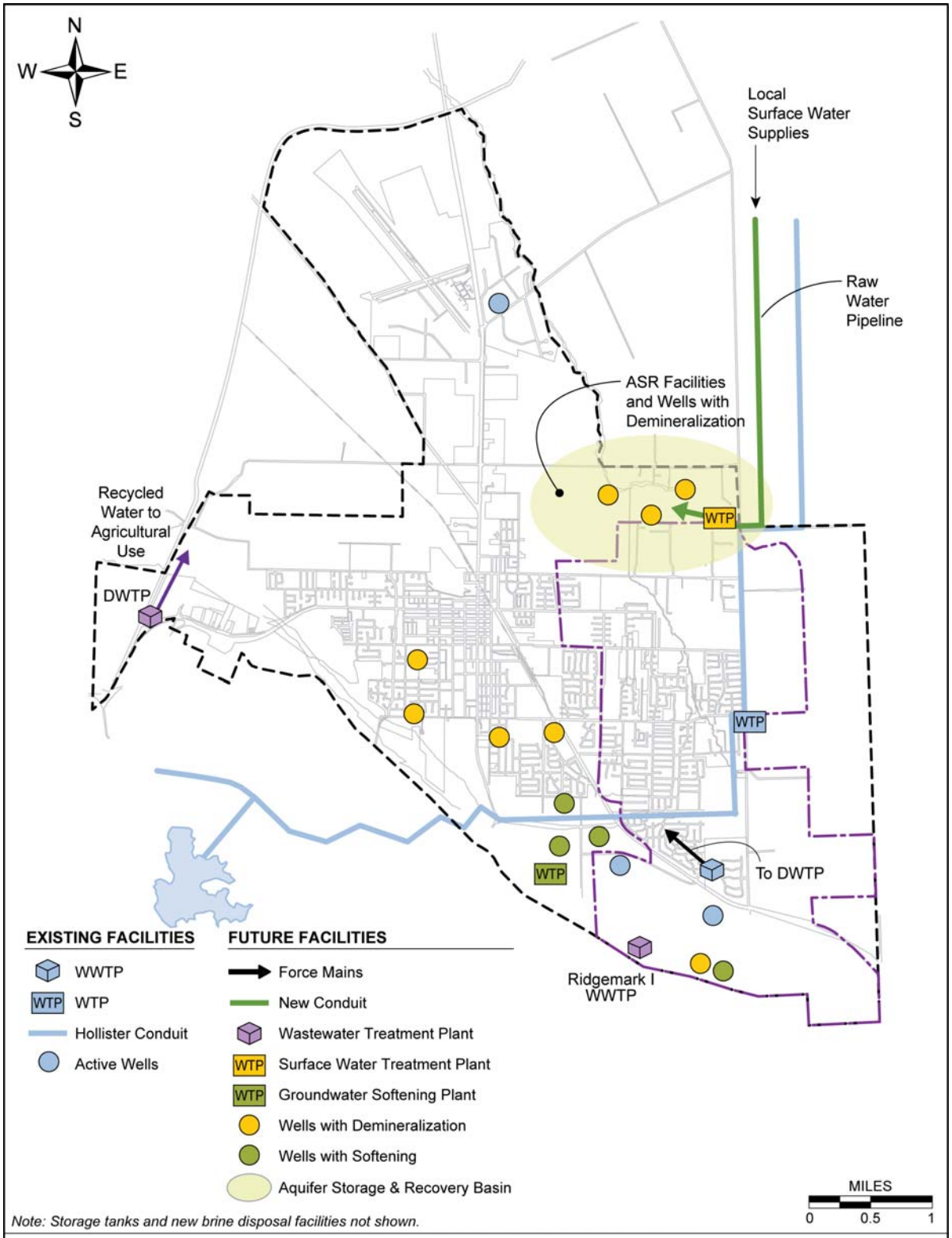


Figure 6-4: Alternative 1B. Water Supplies Proposed to Meet Monthly Demands



Alternative 2A - Local Surface Water Supplies

Figure 6-5

Hollister Urban Area Water and Wastewater Master Plan

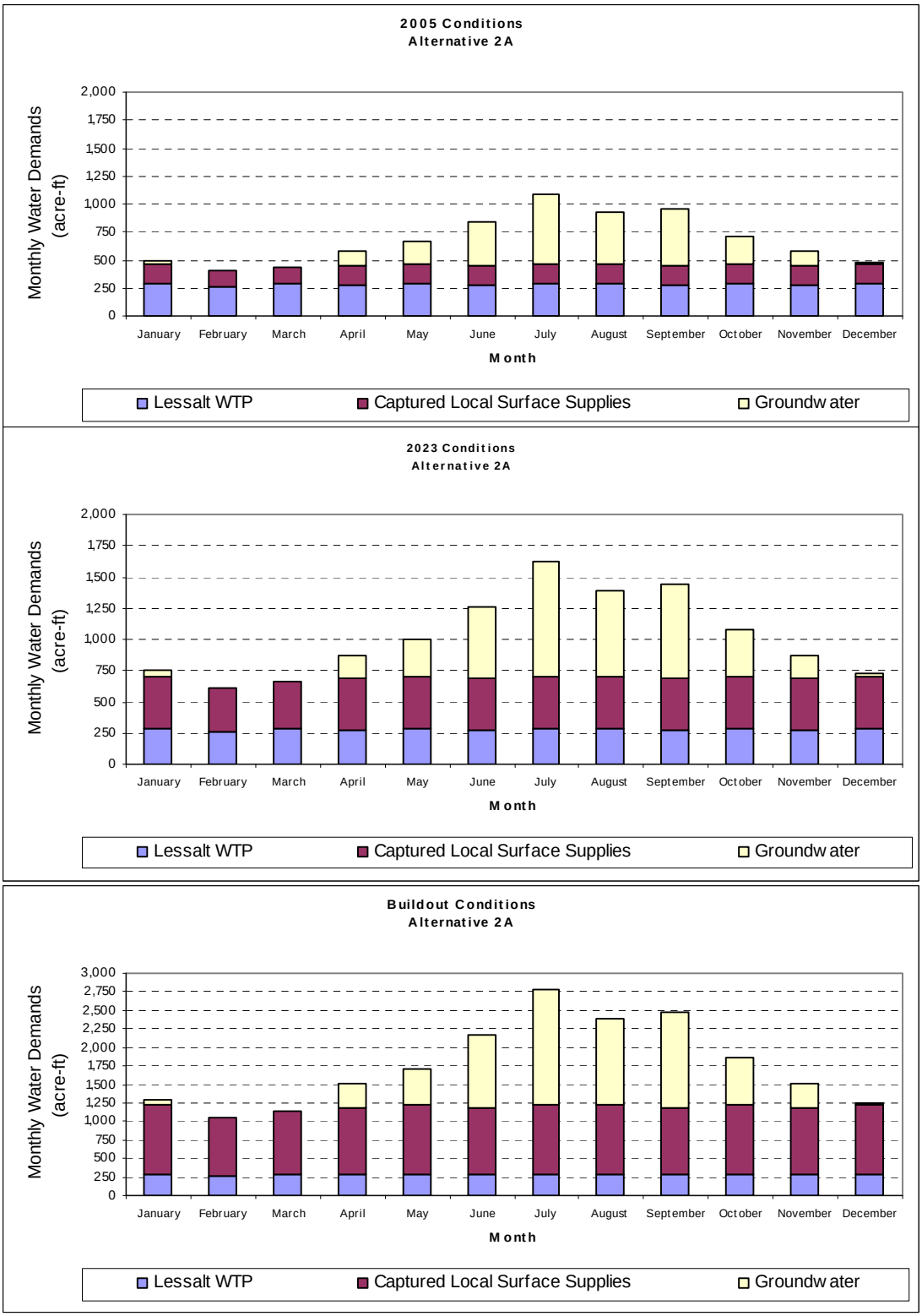


Figure 6-6: Alternative 2A. Water Supplies Proposed to Meet Monthly Demands

Treated water would be conveyed from the new supplies to the new ASR facility. Groundwater pumped from the ASR facility would be demineralized and conveyed to the City and SSCWD distribution systems. Similar to Alternative 1A, demineralization of urban wells within the Study Area will be needed to meet the drinking water quality goals during peak demand months.

Conveyance and treatment facilities associated with Alternative 2A are presented in Table 6-1. The water supplies proposed to meet the monthly demands are presented in Figure 6-6.

6.1.5 Alternative 3A. Demineralization to Meet MOU

Alternative 3A involves demineralizing the majority of the urban groundwater supply to reduce TDS and hardness levels throughout the City and SSCWD distribution systems to meet the MOU water quality goals. Table 6-1 presents the quantities of water and facilities required for demineralization. Individual wellhead treatment will be provided on existing wells and the new wells constructed for future demands. Figure 6-7 presents the preliminary location of new facilities needed for this alternative. A brine pipeline from the individual wells would be required to convey the brine to evaporation ponds.

Conveyance and treatment facilities associated with Alternative 3A are presented in Table 6-1. The water supplies proposed to meet the monthly demands are presented in Figure 6-8.

6.1.6 Alternative 3B. Phased Demineralization of Urban Wells

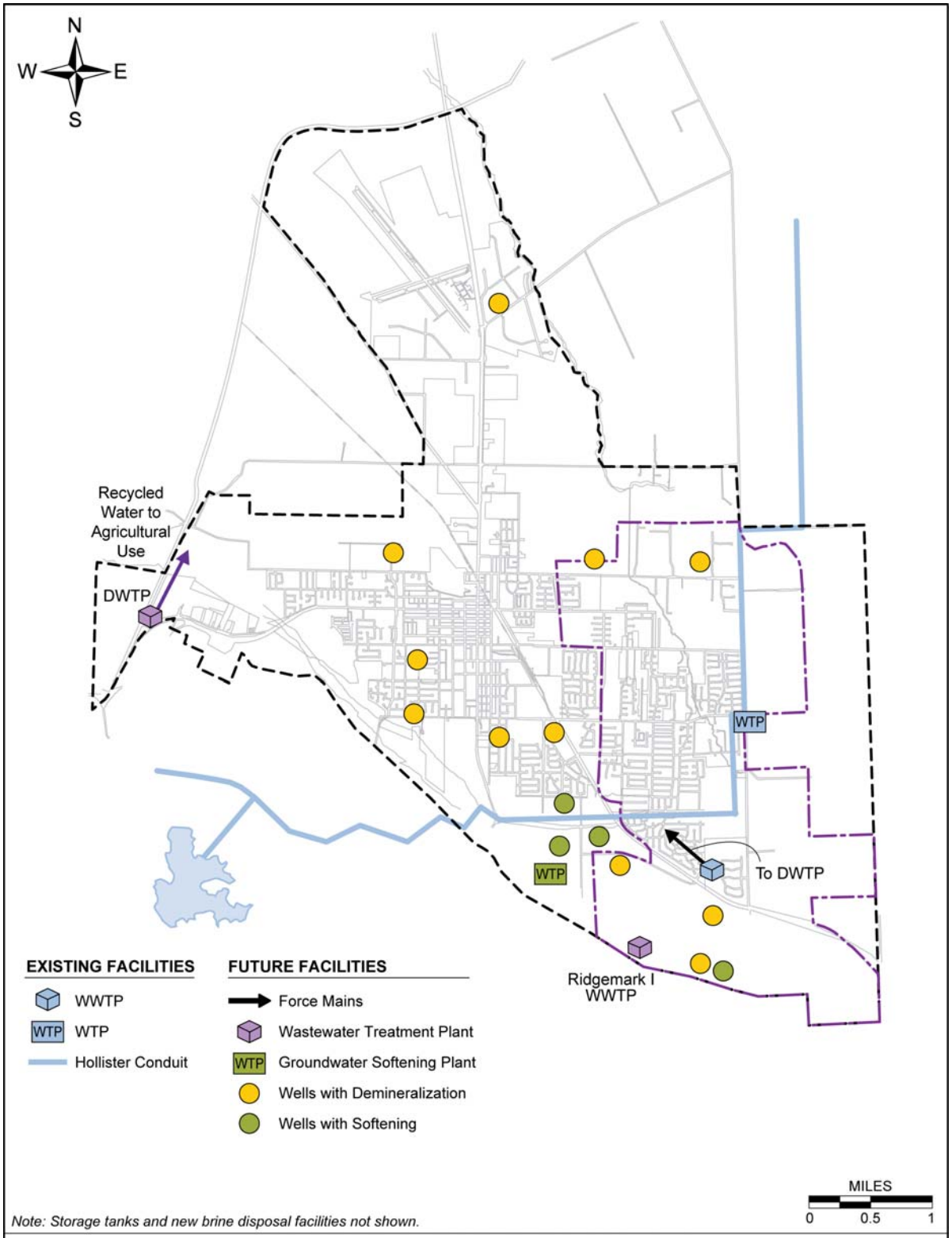
Similar to Alternative 3A, Alternative 3B involves demineralization of the urban groundwater supply to reduce TDS and hardness levels in the City and SSCWD distribution systems. Table 6-1 presents the quantities of water and facilities proposed for this alternative. In an initial phase, to be completed by 2015, three existing wells in the south-western area of the City would be equipped with wellhead demineralization. Figure 6-7 presents the preliminary location of new facilities needed for this alternative.

Alternative 3B does not meet the MOU drinking water quality goals by 2015. However, the three initial wells proposed for demineralization predominantly serve the western side of the City's distribution system while treated water from the Lessalt WTP predominantly serves the eastern side of the City and SSCWD's distribution system. Thus, while this alternative does not meet MOU goals by 2015, it does provide a more uniform water quality in the distribution

system. Moreover, while the drinking water quality goals are not met, drinking water quality is significantly improved. The estimated average annual hardness concentration in drinking water for 2005 is 304 mg/l (see Figure 6-11). The demineralization facilities proposed for Alternative 3B would reduce the average annual hardness for 2023 projected demands to approximately 126 mg/l, with a peak month hardness of approximately 177 mg/l. Similarly, the demineralization facilities would reduce the average annual recycled water TDS concentration from 944 mg/l to approximately 544 mg/l, as shown in Figure 6-12.

In addition to the demineralization facilities, brine disposal pipelines from the individual wells would be required to convey the brine to evaporation ponds.

The supply and treatment facilities associated with Alternative 3B are presented in Table 6-1. The water supplies proposed to meet the monthly demands are presented in Figure 6-8.



Alternative 3A - Demineralize Urban Wells to Meet MOU Goals

Figure 6-7

Hollister Urban Area Water and Wastewater Master Plan

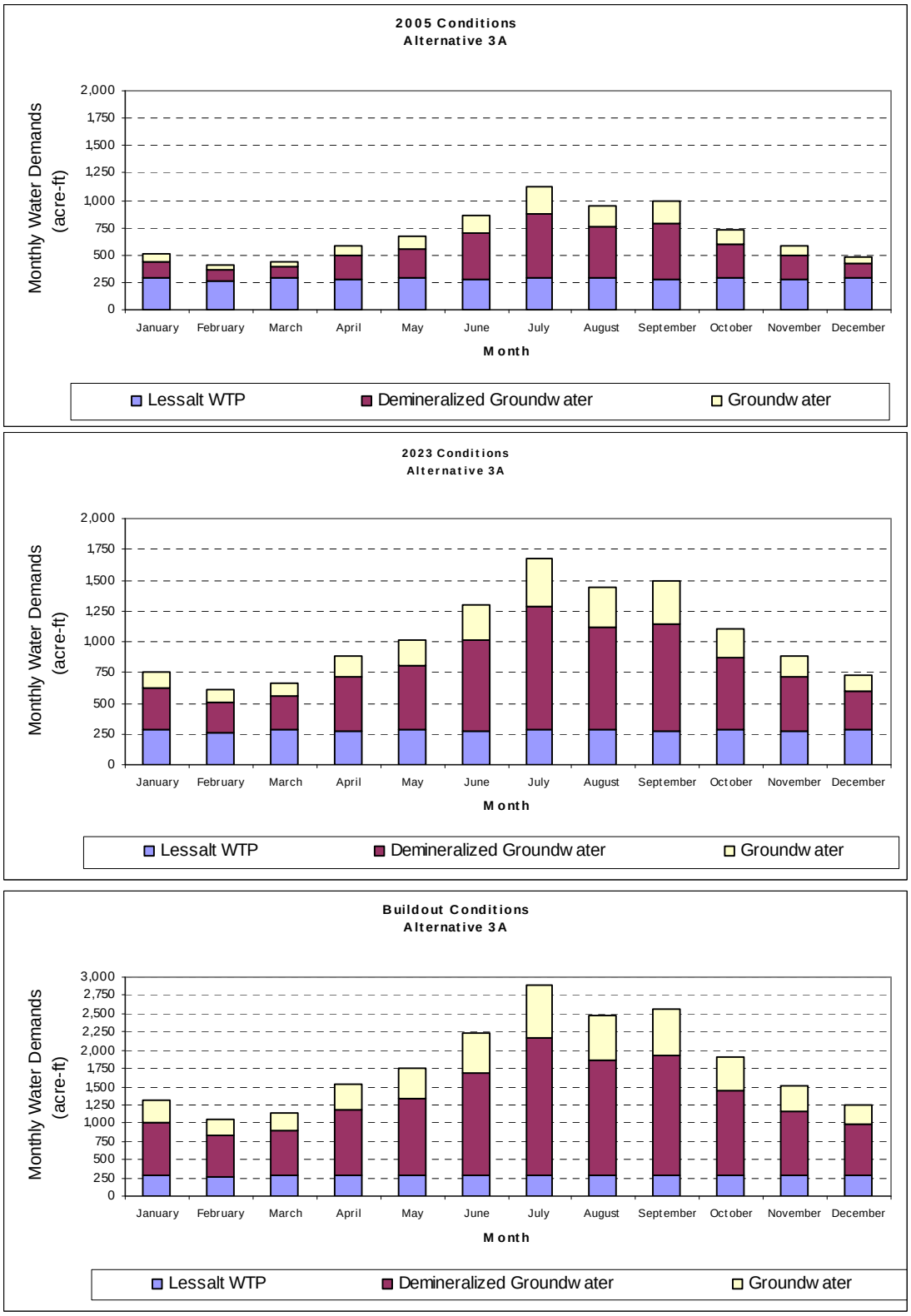
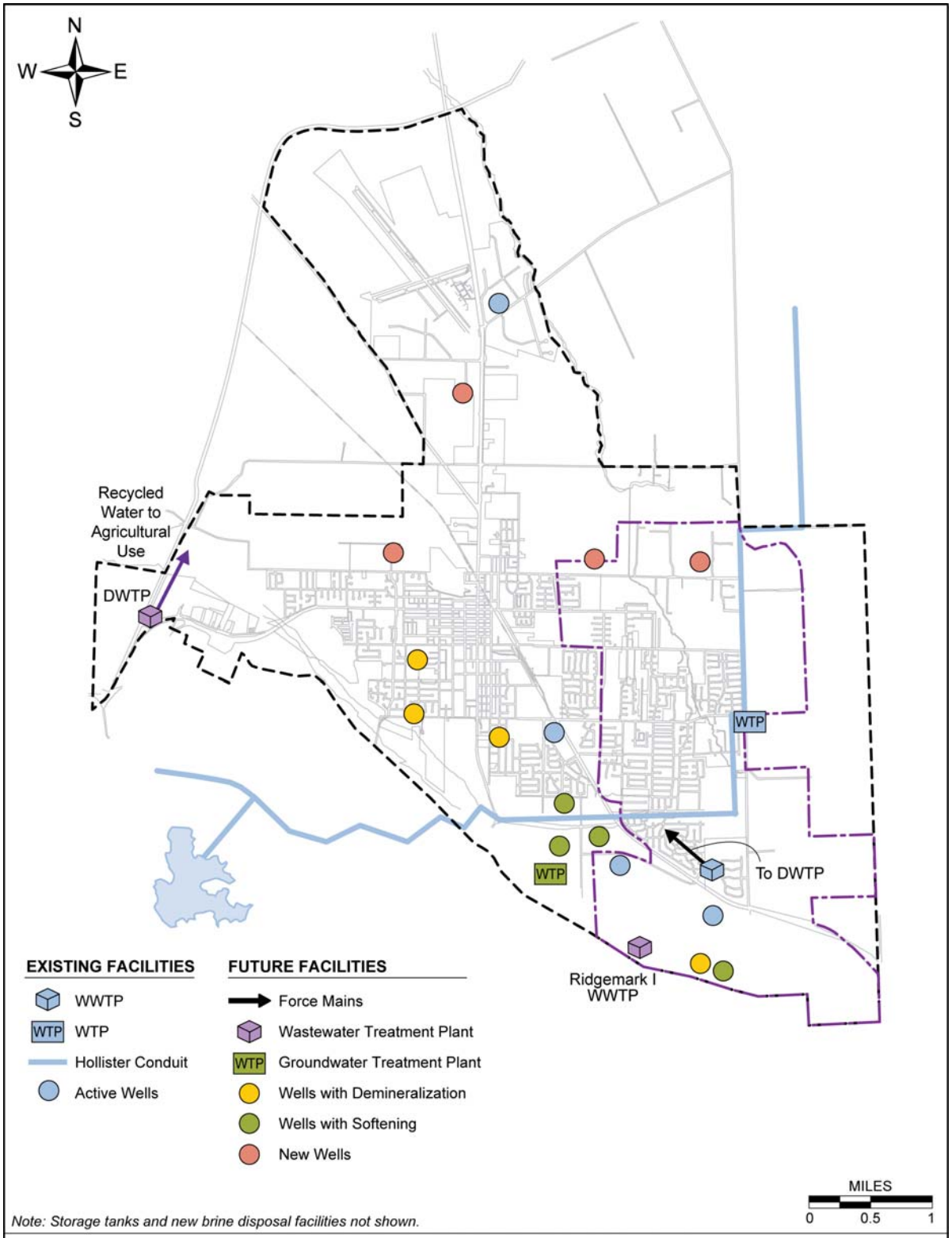


Figure 6-8: Alternative 3A. Water Supplies Proposed to Meet Monthly Demands



Alternative 3B - Phased Demineralization of Urban Wells

Figure 6-9

Hollister Urban Area Water and Wastewater Master Plan

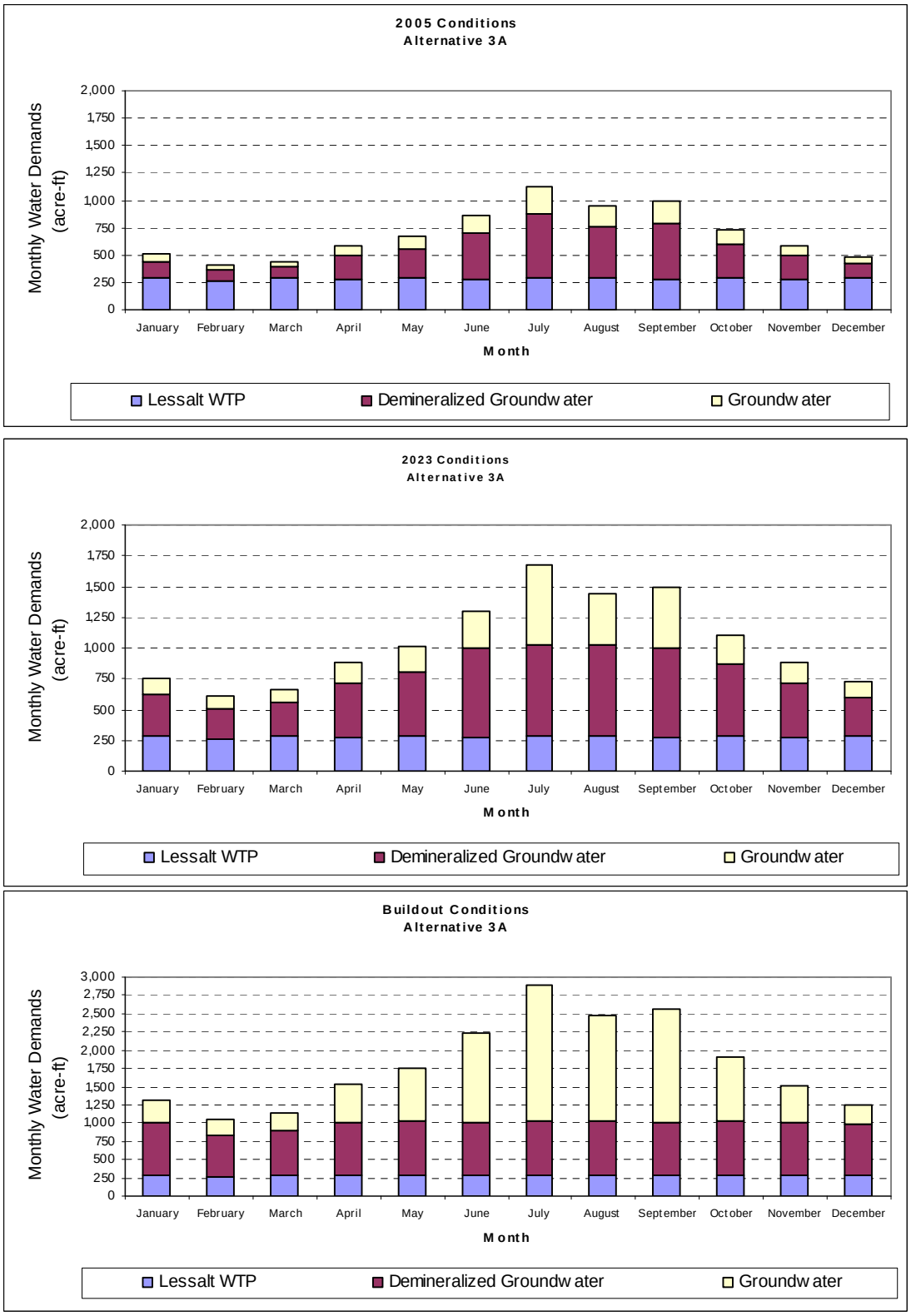


Figure 6-10: Alternative 3B. Water Supplies Proposed to Meet Monthly Demands

6.2 Evaluation Criteria

A preliminary set of evaluation criteria were developed based on the principles and objectives in the MOU described in Chapter 4. The final evaluation criteria were developed through workshops with the Governance Committee, the Management Committee, and the public. The criteria listed below were applied to the alternatives described in the previous sections.

Evaluation Criteria

- Criterion 1: Minimize Costs
- Criterion 2: Meet Drinking Water Quality Goals
- Criterion 3: Meet Recycled Water Quality Goals
- Criterion 4: Balance Water Supply for Enhanced Reliability
- Criterion 5: Maximize Availability of Supplies
- Criterion 6: Maximize Opportunities for Regional Solutions
- Criterion 7: Minimize Environmental Impacts
- Criterion 8: Provide Flexibility for Phased Implementation
- Criterion 9: Minimize Risk of Implementation

Alternatives were ranked for how they meet each criterion. A "moderate" ranking is used for those alternatives that do not fully meet the highest or lowest description of the criteria provided below.

6.2.1 Criterion 1: Minimize Costs

6.2.1.1 High

- The alternative has low capital costs (in 2008 dollars).
- The alternative has low O&M costs (labor, energy, chemicals, and maintenance).
- The alternative has a high level of consumer benefits or avoided consumer costs.

6.2.1.2 Low

- The alternative has high capital costs.
- The alternative has high O&M costs.
- The alternative has a high level of consumer costs.

6.2.2 Criterion 2: Meet Drinking Water Quality Goals

6.2.2.1 High

- The alternative is able meet the drinking water TDS and hardness goals of not greater than 500 mg/L and not greater than 120 mg/L, respectively.
- The alternative will provide uniform water quality throughout the drinking water system and minimize the need for water softeners.

6.2.2.2 Low

- The alternative is not able to meet the drinking water TDS and hardness (measured as calcium carbonate) goals of not greater than 500 mg/L and not greater than 120 mg/L, respectively.
- The alternative will not provide uniform water quality throughout the drinking water system and will not minimize the need for water softeners.

6.2.3 Criterion 3: Meet Recycled Water Quality Goals

6.2.3.1 High

- The alternative will meet the recycled wastewater TDS target of 500 mg/L and shall not exceed 700 mg/L.

6.2.3.2 Low

- The alternative will not meet the recycled wastewater TDS target of 500 mg/L and shall not exceed 700 mg/L.

6.2.4 Criterion 4: Balance Water Supply for Enhanced Reliability

6.2.4.1 High

- The alternative is able to support the groundwater management plan goals of increasing reliability for multiple dry years. The alternative will ensure that 100 percent of M&I demands will be met during wet, above normal, and dry years, and in the first year of critically dry year periods. The alternative will ensure that 85 percent of M&I demands will be met during the second and subsequent years of multi-year droughts.
- The alternative will contribute to the balancing of local supplies by reducing overdraft and high groundwater levels.

- The alternative will maximize the use of recycled water.

6.2.4.2 Low

- The alternative will not be able to support the groundwater management plan goals of increasing reliability for multiple dry years. The alternative will not ensure that 100 percent of M&I demands will be met during wet, above normal, and dry years, and in the first year of critically dry year periods. The alternative will not ensure that 85 percent of M&I demands will be met during the second and subsequent years of multi-year droughts.
- The alternative will not significantly reduce groundwater overdraft or high groundwater levels.
- The alternative does not maximize the use of recycled water.

6.2.5 Criterion 5: Maximize Availability of Supplies

6.2.5.1 High

- The alternative will provide salt management benefits by decreasing groundwater TDS and hardness levels.
- Water supply systems could be repaired relatively quickly after earthquake damage.

6.2.5.2 Low

- The alternative has detrimental impacts to salt management; groundwater TDS and hardness levels are expected to increase over time.
- Water supply system repairs would require a substantial amount of time and effort to repair if and earthquake were to damage the supply system.

6.2.6 Criterion 6: Maximize Opportunities for Regional Solutions

6.2.6.1 High

- The alternative provides sufficient capacity and flexibility to accommodate water and wastewater needs of the study area.
- The alternative has the potential to accommodate the needs of the ten “special study areas.”

- This alternative provides potential for regional partnering and benefits outside of the study area.

6.2.6.2 Low

- The alternative does not provide sufficient capacity and flexibility to accommodate water and wastewater needs of the study area.
- The alternative does not have the potential to accommodate the needs of any of the ten special study areas.
- This alternative does not provide the potential for regional partnering and benefits outside of the study area.

6.2.7 Criterion 7: Minimize Environmental Impacts

6.2.7.1 High

- The alternative avoids or minimizes potential environmental impacts, assuming feasible mitigations are incorporated into the project.

6.2.7.2 Low

- The alternative may have adverse impacts to biological, cultural, aesthetics, and air quality resources; or may impact the preservation of agriculture and agricultural land, or other resources which cannot be mitigated.

6.2.8 Criterion 8: Provide Flexibility for Implementation

6.2.8.1 High

- This alternative provides the ability to phase a project to ensure affordability.
- The alternative provides a high level of flexibility to manage the Hollister Urban Area water resources to meet changing conditions (e.g., increased demands, future reductions in supply, new regulations, new technology).

6.2.8.2 Low

- This alternative does not provide the ability to phase a project to ensure affordability.
- This alternative provides limited flexibility to manage the Hollister Urban Area water supplies to meet changing conditions.

6.2.9 Criterion 9: Minimize Risk of Implementation

6.2.9.1 High

- The alternative ensures minimal risk of implementation delays due to institutional barriers such as regulatory or permitting obstacles, legal challenge, potential partners' uncertainty, long construction timeframe, or other non-MOU Party (City, County, SBCWD, SSCWD) controls or influence.
- The alternative will be financially feasible.
- The schedule associated with this alternative meets the intent of the MOU.

6.2.9.2 Low

- High likelihood of delay associated with this alternative.
- The alternative is not financially feasible.
- Project schedule for the alternative does not meet the intent of the MOU.

6.3 Evaluation of Alternatives

Table 6-2 presents a summary of the alternatives evaluation. As shown in Table 6-2, and described below, alternatives were ranked for how they meet each criterion. A "moderate" ranking is used for those alternatives that do not fully meet the highest or lowest description of the criteria. In addition to the Highest/ Moderate/ Low rankings, a plus (+) and minus (-) sign were used to distinguish or compare between ranked groups of alternatives, as needed.

Information used in assigning the rankings included results of previous studies, technical and economic analyses completed for development of this Master Plan, water distribution system modeling of flows and water quality, and groundwater modeling. The following subsections describe the ranking rationale for the economic and non-economic factors.

Table 6-2: Summary of Alternatives Analysis

Alternatives	Evaluation Criteria								
	Minimize Costs	Meet Drinking Water Quality Goals	Meet Recycled Water Quality Goals	Balance Supply for Reliability	Maximize Availability of Supplies (i)	Maximize Opportun-ities for Regional Solutions	Minimize Environmen - tal Impacts	Provide Flexibility for Phased Implementa-tion	Minimize Risks of Implementa-tion
1A – Exchange Recycled Water for Ag CVP Supply	L	H	H	L (c)	M	L	M	L	L
1B – Reallocate Unused CVP M&I Entitlements	L	H	H	L- (d)	M	L	M	L	L
2A – Develop Local Surface Water	L- (a)	H	H	L+ (e, f)	M	L	M-	L	L
3A – Demineralization to Meet Water Quality Goals	L-	H	H	H	H	M	M	H	M
3B – Phased Demineralization of Urban Wells	M	M (b)	M (b)	H	H	M	M	H+	H

Note: H/M/L = High/Moderate/Low ranking of alternative to criterion.

(a) Diversion and storage costs obtained from the Groundwater Management Plan and updated to reflect current dollars

(b) Water quality goals are not met in peak summer months. Recycled water quality goals may be achieved through blending with water from the Seasonal Storage Reservoir

(c) Exchanged CVP supply would be subject to same level of curtailment as agricultural CVP supply

(d) CVP deliveries from USBR are based on historical use

(e) Out of basin storage or in-basin ASR storage must be expanded to meet dry year reliability goals

(f) Additional water needed to meet dry year supply needs which may result in significantly increased costs

(g) Long-term availability based on salt management benefits and seismic reliability

6.3.1 Economic Analysis

A present worth analysis was developed for each of the alternatives to compare relative lifecycle costs. Present worth costs are based on estimated capital, operation, maintenance, and avoided consumer cost estimates, and the following economic parameters:

- Costs based on 2008 dollars
- Discount rate of 3 percent
- 20 year analysis period

Table 6-3 presents a summary of the net present worth analysis for each of the alternatives as well as the base case. Project elements reflect the required improvements to serve the Hollister Urban Area through the year 2023. Annual costs are based on operating and maintaining proposed improvements and do not include O&M costs of any existing facilities.

Avoided consumer cost estimates were developed to reflect the monetary benefit associated with reduced drinking water TDS concentrations as compared to the current average TDS concentration of 875 mg/L. These avoided costs are based on a review of current relevant analyses (e.g., City of Davis, California; Central Arizona Salinity Study; Metropolitan Water District of Southern California and US Bureau of Reclamation; and CALFED Economics Workshop) which addressed reduced bottled/filtered water use; increased faucet, garbage disposal, clothes and dish washer, water heater, and residential water distribution pipeline service life expectancies; reduced operating expenses for residential water softening systems; and reduced purchase of residential water softening systems.

The net present worth of the projects included in the base case is $173 million. As these costs are common to all alternatives, the marginal increase in present worth costs was used to compare and evaluate the alternatives.

The marginal present worth costs shown in Table 6-3 range between $116 and $222 million; which is equal to a 91 percent differential. Typically the level of accuracy for planning level costs estimates is between +/- 15 and 30 percent. Thus, it is clear that Alternative 3B – Phased Demineralization of Urban Wells is the lowest cost alternative. Due to the magnitude of costs, the remaining alternatives were assigned a Low (L) ranking for the cost criterion in Table 6-2.

Table 6-3: Net Present Worth Cost Comparison for All Alternative Elements

	Alternatives						
	Units	Base Case	1A – Exchange Recycled Water with Ag CVP	1B- Reallocate Unused M/I CVP Entitlements	2A -- Local Surface Water Supplies	3A -- Demineralization to Meet MOU Goals	3B – Phased Demineralization of Urban Wells
Water Supply Facilities							
Capital Costs	$	1,660,000	800,000	800,000	36,680,000	2,530,000	2,530,000
O&M Costs	$	170,000	50,000	50,000	642,000	170,000	170,000
Water Treatment Facilities							
Capital Costs	$	36,300,000	123,740,000	117,550,000	77,460,000	151,100,000	93,700,000
O&M Costs	$/yr	2,530,000	10,330,000	10,110,000	5,776,050	11,870,000	8,540,000
Treated Water Reservoirs							
Capital Costs	$	6,950,000	11,730,000	11,730,000	11,730,000	11,730,000	11,730,000
O&M Costs	$/yr	110,000	182,000	182,000	182,000	182,000	182,000
Wastewater Treatment							
Capital Costs	$	10,720,000	10,720,000	10,720,000	10,720,000	10,720,000	10,720,000
O&M Costs	$/yr	110,000	182,000	182,000	182,000	182,000	182,000
Recycled Water							
Capital Costs	$	14,395,000	14,395,000	14,395,000	14,395,000	14,395,000	14,395,000
O&M Costs	$/yr	3,968,000	3,968,000	3,968,000	3,968,000	3,968,000	3,968,000
Totals							
Capital Costs	$	70,025,000	176,045,000	162,885,000	397,200,000	190,475,000	133,075,000
O&M Costs	$/yr	6,888,000	15,592,000	14,872,000	12,722,870	16,372,000	13,042,000
Avoided Consumer Costs	$/yr	0	-2,620,000	-2,650,000	-2,850,000	-2,670,000	-2,580,000
Net O&M Costs	$/yr	6,888,000	12,972,000	12,222,000	9,872,870	13,702,000	10,462,000
Present Value Net O&M (3%, 20 yr)	$	102,480,000	192,990,000	181,830,000	146,880,000	203,850,000	155,650,000
Present Worth Costs	$	172,505,000	346,835,000	340,835,000	544,080,000	394,325,000	288,725,000
Less Base Case	$	172,505,000	172,505,000	172,505,000	172,505,000	172,505,000	172,505,000
Marginal Present Worth of Alternative	$	0	173,550,000	168,330,000	208,870,000	221,820,000	116,220,000

Note: Capital costs do not include projects currently under construction, estimated at $100,000,000. These projects include the DWTP, Seasonal Storage Reservoir, Phase 1 Recycled Water facilities, and two SSCWD wells. O&M costs do not include costs to operate these facilities.

6.3.2 Non-Economic Analysis

The following are descriptions of the rational used to rank each alternative relative to the non-economic evaluation described in Section 6.2.

6.3.2.1 Meet Drinking Water Quality Goals (Criterion 2)

Alternatives 1A, 1B, 2A and 3A were configured to meet the drinking water quality TDS, hardness, and uniform water quality goals defined in the MOU and were therefore assigned a High (H) ranking. To achieve the goals, these alternatives required additional treatment of urban groundwater wells. Alternative 3B (Phased Demineralization of Urban Wells) does not meet drinking water quality TDS, hardness, and uniform water quality goals in all months. However, it is expected that water quality goals could be met in all but three months in 2023. Therefore, Alternative 3B was assigned a Medium (M) ranking.

6.3.2.2 Meet Recycled Water Quality Goals (Criterion 3)

Alternatives 1A, 1B, 2A and 3A meet the recycled water quality TDS target defined in the MOU and used for Criterion 3 and were therefore assigned a High (H) ranking. Alternative 3B does not meet the recycled water quality TDS target in summer months. Therefore, Alternative 3B was assigned a Medium (M) ranking. To attain adequate TDS levels for recycled water utilization, high TDS water produced in the summer could be blended with lower TDS water stored in the Seasonal Storage Reservoir. Further analysis would be required to confirm the feasibility of this blending strategy.

6.3.2.3 Balance Water Supply for Enhanced Reliability (Criterion 4)

The MOU goal regarding increasing the reliability of the supply for multiple dry years will be difficult to achieve. Alternatives 3A and 3B meet Criterion 4 better than the remaining alternatives because they rely on the utilization of groundwater located within the Hollister urban area without overdrafting the groundwater subbasins. Groundwater is a more reliable supply than surface water because it is not as sensitive to weather conditions and the operational and administrative constraints of the CVP supply; therefore, Alternatives 3A and 3B were assigned a High (H) ranking.

Alternatives that rely on the CVP supply (Alternatives 1A and 1B) are subject to the reliability of the imported surface water supply which is anticipated to continue to decline in the future.

As described in the 2001 USBR Draft M&I Water Shortage Policy, in years of average or below average precipitation or drought, full deliveries of imported surface water may not be possible. In either the case of a one-year shortfall, or in a period of multiple dry years, the 2001 USBR Draft M&I Water Shortage Policy indicates the following impacts to reliability of this supply.

- Any reduction of M&I water made available to the District shall be no greater than the percentage reduction applied to any other CVP M&I user.
- No reduction shall be made to M&I water made available to the District until agricultural users' allocations have been reduced to 75 percent; after this, both agricultural and M&I users' allocations are reduced equally to 50 and 75 percent, respectively; then agricultural users face cutbacks to 25 percent; at this point, agricultural allocations are cut back to 0 percent, while M&I allocations are reduced to 50 percent.
- In no year of shortage will the USBR reduce the quantity of M&I water made available to the District to less than the public health and safety water supply level.
- The quantity of water to be made available to the District shall be based on the District's historical use. The water requirements shall be the average quantity of water put to beneficial use within the service area during the last three years of water deliveries, unconstrained by the availability of CVP water.

The 2001 USBR Draft M&I Water Shortage Policy was finalized through the acceptance of a final Environmental Assessment and a Finding of No Significant Impact in December 2005. Since that time, two significant developments have occurred which significantly affect the reliability of both CVP and SWP deliveries in the State and which were addressed in the California Department of Water Resources' 2007 Final State Water Project Delivery Reliability Report. The first is climate change, which is altering hydrologic conditions in the State. The second is associated with a December 2007 federal court decision to protect the delta smelt by imposing interim rules that will significantly restrict the operations of the CVP. Based on this decision, the future reliability of CVP water is in question.

The SBCWD's full M&I entitlement is 8,250 af/yr. However, the average historical M&I use, including transfers, is about 6,976 af/yr. It is expected, as reported in the 2008 Final UWMP,

that this amount will be subject to the USBR M&I deficiency criteria, which will likely result in deliveries of 75 percent of historical use.

The alternatives relying on an imported surface water supply, Alternatives 1A and 1B, were therefore ranked low. Alternative 1A maximizes the use of recycled water and provides a higher level of reliability for the current CVP contractor who would receive recycled water in exchange for their allocation, but it does not improve the reliability of the urban area imported supply, without additional, more reliable supplies. Moreover, the exchanged CVP water would be subject to the same level of curtailment in dry years as agricultural CVP supply. Based on this assessment, Alternative 1A was assigned the Lowest (L) ranking. Since CVP deliveries are based on historic use, as opposed to entitlements, Alternative 1B would be subject to a significant lag period before it could be realized, particularly if the interim rules restricting CVP operations remain in place. Additionally, Alternative 1B would require additional, more reliable supplies. Based on this assessment, Alternative 1B was assigned a Low minus (L-) ranking.

Alternative 2A relies on the development of ASR storage facilities near the urban area; further analyses would be necessary to determine the feasibility and location of this type of storage. Due to the uncertainties associated with the implementation of in-basin ASR, this alternative was assigned a Low plus (L+) ranking.

6.3.2.4 Maximize Availability of Supplies (Criterion 5)

This criterion addresses supplies that will increase salt levels in the groundwater basin, thus reducing the availability of the groundwater supply in the future. It also addresses the availability of the supply following a significant seismic event. The alternatives that rely on the utilization of groundwater (Alternatives 3A and 3B) rank higher than the remaining alternatives relying on imported or local surface supplies. This ranking is due to the removal of highly mineralized groundwater and ultimate salt removal. The groundwater alternatives would also have a supply available following a seismic event, sooner than the imported supplies. This difference between groundwater and surface water supplies is due to the ability to fix wells, pump stations, and smaller diameter pipelines more easily and with local labor, without trying to compete for large diameter pipeline supplies and specialized labor following a major seismic event.

6.3.2.5 Maximize Opportunities for Regional Solutions (Criterion 6)

Demineralization of urban wells associated with Alternatives 3A and 3B would improve the salt balance in the groundwater basin for all users, not just the City and SSCWD. These alternatives also have the advantage of benefiting the region because they provide capacity and flexibility to accommodate water needs of the entire Study Area. Therefore, Alternatives 3A and 3B were assigned a medium (M) ranking. The remaining alternatives were assigned a Low (L) ranking.

6.3.2.6 Minimize Environmental Impacts (Criterion 7)

Developing detention and diversion facilities to convey local stream flows (Alternative 2A) may impact riparian vegetation and habitat at the construction sites as well as downstream due to reduced flows. Therefore, this alternative was assigned a Medium minus (M-) ranking.

Construction in urban areas is generally considered to have less of an environmental impact than construction in rural undeveloped or agricultural areas. Improvements associated with Alternatives 3A and 3B are generally more urban in nature, except for the brine disposal facilities, depending on the technology used.

6.3.2.7 Provide Flexibility for Implementation (Criterion 8)

Alternatives 3A and 3B, relying on the demineralization of groundwater, rank the highest for this criterion because implementation can be phased over time to ensure affordability. Since Alternative 3B is purposefully designed to be phased, it provides the highest level of flexibility to manage the HUA's water resources to meet changing conditions. Based on this analysis Alternative 3A was ranked High (H) and Alternative 3B was ranked High plus (H+).

Alternatives relying on a new or expanded water treatment plant (Alternatives 1A, 1B and 2A) have less flexibility with regard to phasing, as well as in meeting changing conditions over time (e.g., increased demands and further reductions in surface supplies).

6.3.2.8 Minimize Risk of Implementation (Criterion 9)

Alternatives 3A and 3B provide more local control over implementing the demineralization of urban wells than the other alternatives. There are less stringent permitting requirements and institutional arrangements with adding demineralization treatment to wells than with constructing new water treatment plants, expanding the capacity of the San Felipe Division

facilities including the Hollister Conduit, or obtaining new water rights and negotiating storage options.

6.4 Preferred Alternative

Based on the evaluation of alternatives summarized in Table 6-2, groundwater demineralization, Alternatives 3A and 3B, best meets the evaluation criteria.

Since Alternative 3B is a subset of Alternative 3A, Alternative 3B is a logical first step toward demineralization of urban wells to meet MOU water quality goals. Figure 6-11 illustrates the difference between the base case, Alternative 3A and Alternative 3B for average monthly drinking water hardness concentrations based on 2023 conditions. Similarly, Figure 6-12 illustrates the differences among the alternatives for the average monthly recycled water TDS concentrations. Based on initial analyses, it was determined that hardness, not TDS, was the most difficult goal to achieve. In a normal year, Alternative 3B would meet hardness goals in all but three months and would exceed the recycled water TDS limit in the month of July.

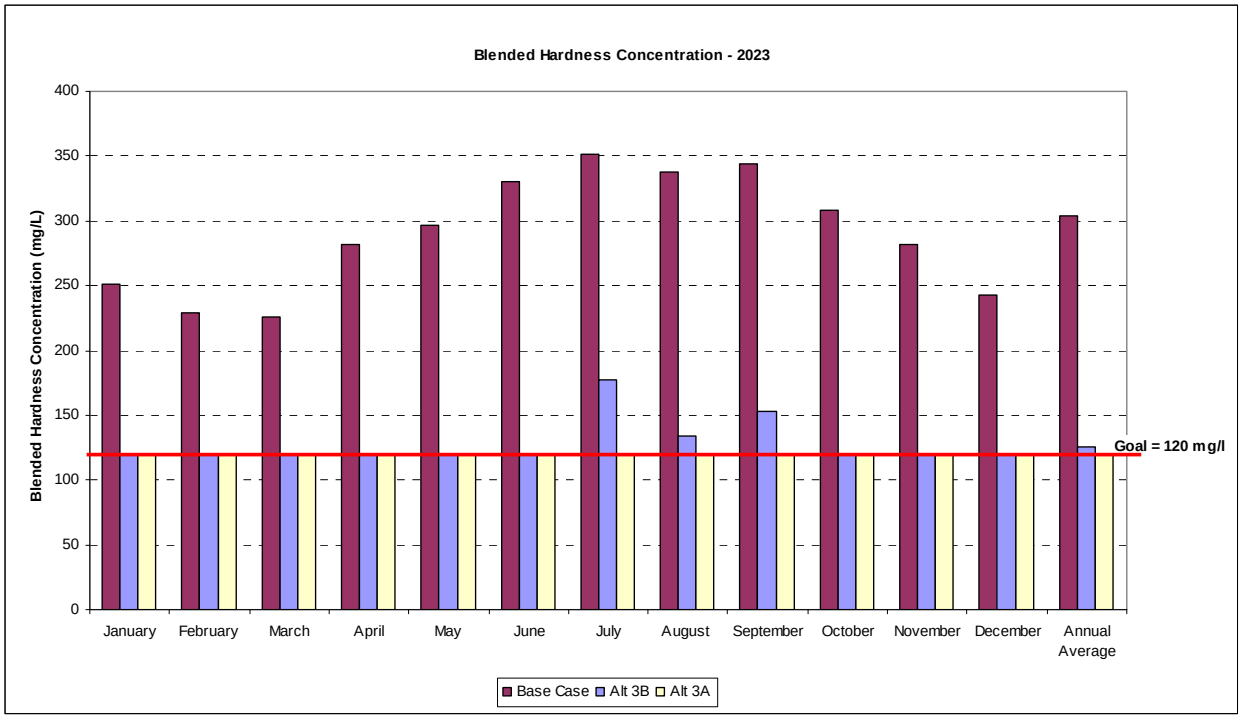


Figure 6-11: Blended Hardness Concentration, Drinking Water for 2023 Conditions

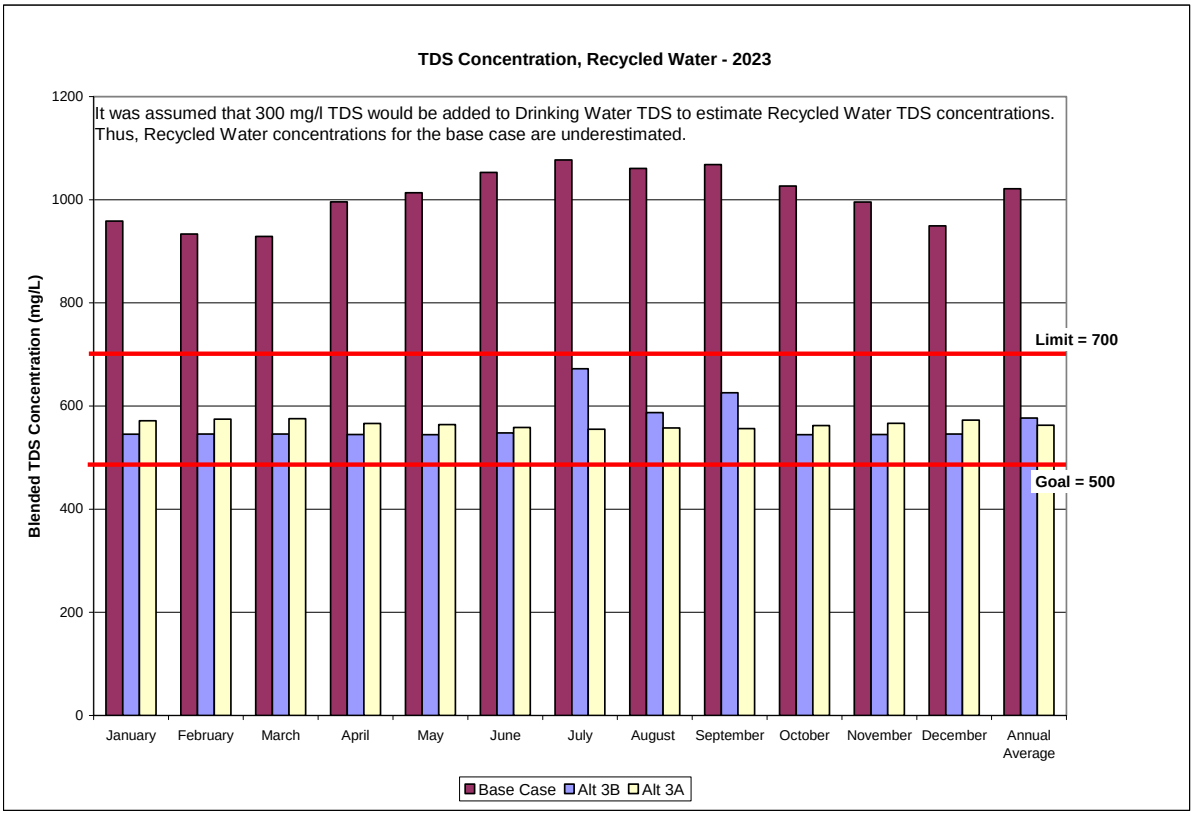


Figure 6-12: Blended TDS Concentration, Recycled Water for 2023 Conditions

The hydraulic distribution system model for the City and Sunnyslope distribution systems was also used to examine the distribution of drinking water hardness and TDS throughout the system for the existing conditions, Alternative 3B and Alternative 3A. The results, described in detail in Appendix H, indicate that Alternative 3B provides significant improvement over existing conditions with respect to the distribution of drinking water meeting both TDS and hardness goals. However, during peak demand months, there remain some hot spots where water from wells without demineralization facilities enters the system. These hot spots are eliminated in the Alternative 3A scenario.

The marginal present value of Alternative 3B, shown in Table 6-3, is approximately $116 million compared to $222 million for Alternative 3A. The difference is attributed to more demineralization facilities which are required in Alternative 3A to overcome the hot spots in the distribution system where water quality is not meeting the MOU goals for hardness and TDS.

In addition to being the lowest cost alternative, Alternative 3B also has the following major benefits:

- Providing a reliable water supply for average, dry, and multiple dry year events without significantly impacting long-term groundwater levels within the subbasins.
- Providing a reliable water supply for agricultural users.
- Providing improved drinking water quality and consumer cost savings.
- Reducing the annual salt load entering the groundwater basin.
- Improved effluent quality facilitating the implementation of recycled water use in the Wright Road / McCloskey Road corridor.
- Reducing percolation to groundwater basin and related contributions to localized high groundwater conditions.

Additionally, the recommended alternative provides the opportunity to evaluate the performance of initial demineralization facilities and the flexibility to add additional demineralization facilities as necessary. The phased approach also presents opportunities for cost savings as demineralization technology improves with time and capital costs are reduced.

The facilities required to implement this preferred alternative are described for water and wastewater in Chapters 7 and 8, respectively. Chapter 9 provides an implementation program including benefit and cost allocation, institutional arrangements, engineering, CEQA compliance, permitting, financing, coordination with ongoing programs, stakeholder outreach, and an implementation schedule.

7.0 Water Master Plan

This chapter presents the recommended improvements required to accommodate planned growth, improve water quality, and ensure long-term water supply reliability through the year 2023. The existing water system facilities were described in detail in Section 2. Recommended improvements described in this chapter were developed based on the hydraulic distribution system model and application of industry standards for a reliable level of performance.

7.1 Water Supply

As described in Chapter 6, the recommended water supply plan is a phased solution which builds upon the Base Case and includes an initial phase of demineralization of select urban wells, continued use of imported CVP supplies treated at the Lessalt WTP, and groundwater softening of several SSCWD wells. This plan provides flexibility to meet the reliability criteria for dry year and drought conditions defined by the MOU. Additionally, this plan provides the water supply and water quality for an integrated plan including wastewater disposal and water recycling.

7.1.1 Existing Urban Groundwater

The City and SSCWD own and operate the existing urban wells described in Chapter 2. These wells would continue to be utilized in the recommended plan. However, four of the wells would be equipped with wellhead demineralization. Water from as many as four SSCWD wells would be conveyed to a softening plant. The remaining wells would be used as needed to meet peak demands; however, in the initial phase, using these wells will result in hot spots which do not meet the MOU goals for water quality. Additional modeling and cost studies will be required during facilities planning and predesign to optimize system operation, determine if additional piping could be used to eliminate or minimize hot spots, and whether or not water from one or more of the wells could be treated at a single demineralization treatment plant to minimize both construction and operation costs.

7.1.2 Imported Surface Water

Imported surface water from the CVP will continue to be a key component of the water supply system. Currently, imported surface water is treated at the Lessalt WTP. However, as described in Chapter 2, the Lessalt WTP has not been able to operate at its design capacity

since it was placed in operation in January 2003. Therefore, the plant is an under utilized asset which could be a cost-effective source of additional high quality drinking water. A predesign report (Kennedy/Jenks, Draft May 2006) has been completed to provide the hydraulic and treatment process improvements to allow the facility to operate at its design capacity of 3.0 mgd. These improvements would allow the Lessalt to provide a treated water supply of up to 3,360 af/yr.

7.1.3 Preliminary Operational Plan

Additional modeling and system optimization studies will be required to evaluate various operating scenarios. However, a preliminary plan for use of the recommended water supply sources is presented in Table 7-1.

Table 7-1: Existing and Projected Annual Water Requirements and Sources of Supply (Acre-Feet/Year)

	100% CVP M&I Deliveries		50% CVP M&I Deliveries	
	2005	2023	2005	2023
Water Requirement	7,965	11,840	7,965	11,840
Sources of Supply				
Lessalt WTP (CVP)	2,375	3,360	1,187	1,680
Urban Groundwater	5,590	8,480	6,778	10,160
Total	7,965	11,840	7,965	11,840

As shown in Table 7-1, existing urban groundwater use will increase by approximately 3,000 af/yr over the planning period with full CVP deliveries. However, under extreme dry weather conditions, imported surface water for M&I use could be reduced to only 50 percent of historic use as described in Chapter 2 and illustrated in Figure 2-3. Under those dry year or drought conditions, additional urban groundwater would be pumped to offset the reductions in imported surface water from the CVP. Recovery of the groundwater basin would occur in wet years and/or through recharge from releases from CVP or Hernandez Reservoir water supplies to the San Benito River.

7.2 Water Production Requirements

Water production requirements should be planned to provide maximum day demand (MDD). The projected MDD and the existing and proposed water production facilities are shown in Figure 7-1 and summarized in Table 7-2. Since City Well No. 6 has had problems with pumping sand and water quality issues, it was not included in the existing production capacity.

To meet the projected MDD, new well capacity in the urban area will be required with a total capacity of between 2 and 4 mgd. The final sizing and timing of these new wells will be based upon the results of additional modeling, final operational plans, and the actual rate of growth in water demand.

To provide a reliable level of service for a system with multiple wells, production facilities should be capable of supplying the MDD with the largest single unit out of service. The largest production facilities are the City Well No. 5 (2.63 mgd) and the Lessalt WTP (3.0 mgd). Table 7-2 shows that sufficient surplus exists to provide for the largest unit out of service at current demand levels. However, as demands increase additional reserve capacity will be needed. This reserve capacity could be provided by rehabilitating some of the existing inactive wells or drilling one or more new wells in the urban area. These options should be evaluated during facilities planning and predesign work to determine the most cost-effective and operationally sound approach.

As described previously in Chapter 2, the Lessalt WTP requires improvements to produce its design capacity of 3.0 mgd. Once these improvements are in place, the Lessalt WTP should be operated as a baseload plant producing 3.0 mgd on an annual basis. Additional production requirements and summer peaks would be met with wells. In dry years or drought conditions, operation of the Lessalt WTP would be modified to treat the available imported CVP supplies and still meet the summer peaks. This modified operation would require more well pumping during the non-peak (winter) periods to offset the reduced production from the Lessalt WTP during those periods. This method of operation is typical of other conjunctive use systems utilizing a combination of surface water and groundwater supplies.

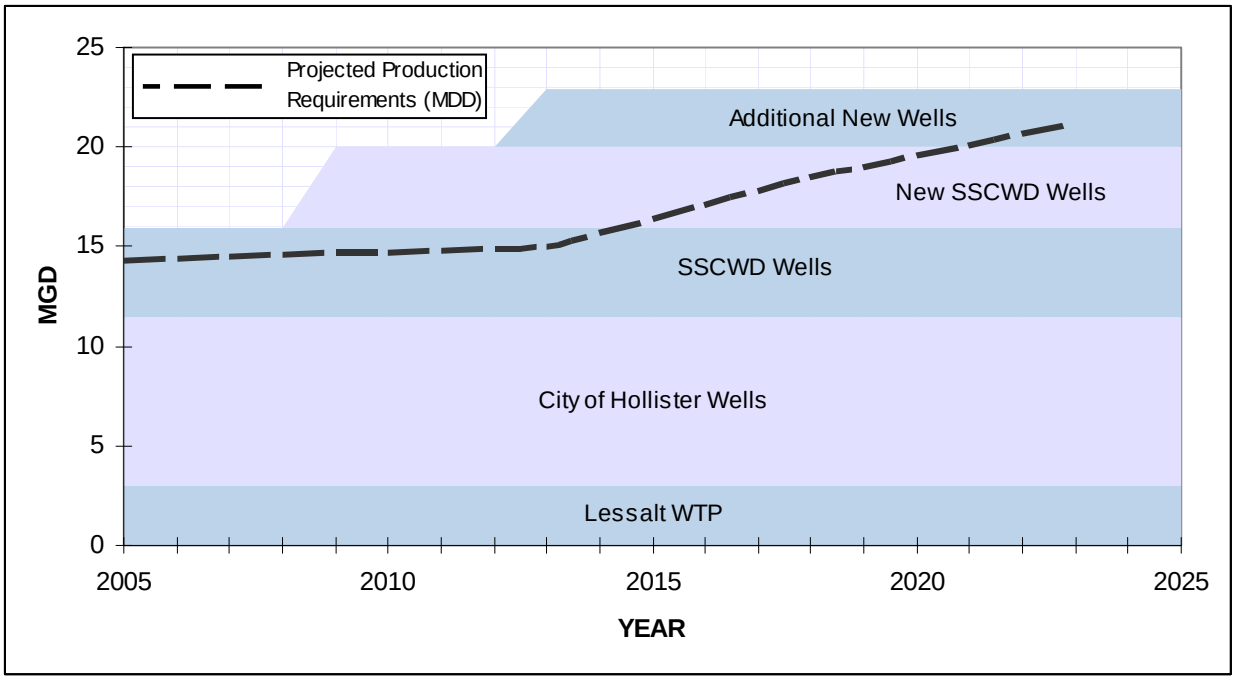


Figure 7-1: Projected Water Production Requirements and Sources of Supply

Table 7-2: Evaluation of Full System Source Adequacy

	Year				
	2005	2013	2018	2023	Buildout
Projected Demands (mgd)					
Average Day	7.1	7.5	9.2	10.6	18.0
Maximum Day	14.2	15.0	18.4	21.1	36.0
Available Source (mgd) [(a)]					
LESSALT (3.0 mgd)	3.00	3.00	3.00	3.00	3.00
Well No.2 Bundeson (1,425 gpm)	2.05	2.05	2.05	2.05	2.05
WellNo.3 Fallon (930 gpm)	1.34	1.34	1.34	1.34	1.34
Well No.4 South Street (1,670 gpm)	2.40	2.40	2.40	2.40	2.40
Well No.5 Nash (1,825 gpm)	2.63	2.63	2.63	2.63	2.63
Southside Well No.2 (950 gpm)	1.37	1.37	1.37	1.37	1.37
Ridgemark Well No.5 (850 gpm)	1.22	1.22	1.22	1.22	1.22
Enterprise Well No.7 (550 gpm)	0.79	0.79	0.79	0.79	0.79
Ridgemark Well No.8 (800 gpm)	1.15	1.15	1.15	1.15	1.15
Lico Well No. 11 (1,300 gpm) [(b)]	-	1.87	1.87	1.87	1.87
Bray Well No. 12 (1,500 gpm) [(b)]	-	2.16	2.16	2.16	2.16
Total Available Source (mgd)	16.0	20.0	20.0	20.0	20.0
Source Surplus/(Deficiency) (mgd)	1.8	5.0	1.6	(1.2)	(16,0)

(a) Available source assumes 24 hour operation.
(b) SSCWD is currently installing the Lico and Bray wells. Well capacity is estimated.

7.3 Water Treatment

The recommended plan includes continued treatment of imported surface water at the Lessalt WTP, demineralization of groundwater and groundwater softening.

7.3.1 Lessalt Water Treatment Plant

The existing and proposed processes for the Lessalt WTP are described in Chapter 2 and are shown on Figures 2-7 and 2-8, respectively.

7.3.2 Groundwater Demineralization

The recommended water supply plan is phased demineralization of urban groundwater. The first phase includes demineralization at three City wells and one SSCWD well. Additional water distribution system modeling and economic analyses are required to optimize the location and operation of the demineralization facilities and determine whether one or multiple demineralization treatment plants will be constructed for the City's wells. These additional studies will be conducted as part of facilities planning and predesign. The SSCWD demineralization treatment plant is expected to be constructed at a new well in the Ridgemark area.

At a minimum, bench-scale tests should be conducted as part of engineering predesign to identify the necessary pretreatment requirements and select potential membrane technologies and manufacturers. The bench-scale tests would consist of groundwater sampling and water quality laboratory analyses to identify and quantify specific constituents known to impact membrane selection, performance and operation. Due to relatively high membrane and operating costs, it may be prudent to conduct pilot testing to identify and provide a means of quantifying long-term treatment efficiency and operating costs (e.g., chemical cleaning, TMP, etc.), and familiarize City, SSCWD, and SBCWD staff with this technology and its associated operational and maintenance requirements.

A brine management assessment is being conducted as part of a joint study between SBCWD and the Santa Clara Valley Water District. The brine management alternatives considered in the assessment include evaporation ponds, deep well injection, ocean outfall disposal, product recovery, zero liquid discharge, vibratory shear processes (VESP), and a combination of individual management alternatives. Preliminary results indicate that a combination of the

alternatives is the most attractive since it provides significant salt management benefits at relatively low life cycle costs. The combination solution is comprised of a VESP system followed by evaporation ponds and eventual land disposal of the dried solids.

7.3.3 Groundwater Softening

SSCWD is planning to construct two groundwater softening plants. The first softening plant would be located in the Ridgemark area and would treat water from Ridgemark well No. 8. The second plant is expected to be constructed in the middle pressure zone and treat water from up to three wells, including the Lico well No. 11, Bray well No. 12, and the Southside well No. 2. A fourth well (Campisi) on the proposed site for the softening plant could be used in lieu of the Southside well.

SSCWD has initiated a jar testing study to evaluate both traditional lime softening and pellet softening processes. It is anticipated that the study results, in combination with construction, operation, and maintenance cost estimates will be used as the basis for process selection and design.

The softening plants are expected to produce a water quality that meets the MOU goal for drinking water hardness. However, some demineralization (or blending with demineralized water) will be required to meet the MOU TDS goals for drinking and recycled water.

7.4 Water Distribution System Criteria

Criteria used to evaluate the condition of the existing water system and to plan new facilities are described in the following subsections. Specific criteria have been established based on industry standards and the level of service recommended for a reliable water system. Existing and proposed facilities were evaluated using the hydraulic model described in Appendix H. Facilities that do not meet the minimum criteria have recommended improvements to mitigate the deficiency.

7.4.1 Pipeline Criteria

Distribution and transmission pipelines should be sized for a maximum velocity of 6 feet per second (fps) during peak hour demands. Maximum velocities of 8 fps or more may occur

under fire flow conditions for short sections of mains or for piping within pump and valve station facilities.

7.4.2 System Pressure Criteria

The water system should provide peak hour demand (PHD) at a pressure no less than 30 psi at all service connections throughout the distribution system. To address fire suppression events, the system must be able to provide 20 psi minimum pressure at ground level at all points along the pipeline throughout the distribution system under fire flow conditions plus the maximum day demand.

7.4.3 Storage Volume Criteria

Public water systems are required to provide sufficient storage to meet daily variations in demand, fire flows, and emergency demands such as during power outages and equipment failures. This Master Plan utilizes the following criteria for determination of recommended treated water storage required in each pressure zone.

For reservoir sizing and design, each of the three storage components listed below must be considered:

- Operational storage
- Emergency reserve storage
- Fire suppression storage

Only effective storage may be used in determining actual available or design storage volume. Effective volume is equal to the total volume minus the dead storage built into the reservoir. Total storage volume required has been interpreted as the sum of equalizing storage, fire suppression storage, and emergency reserve storage at an elevation sufficient to provide 20 psi (static) to the highest customer in any pressure zone. In addition, equalizing storage is evaluated with respect to providing 30 psi (static) at the highest customer in a pressure zone.

7.4.3.1 Operational Storage

Operational storage capacity is utilized to meet the daily (diurnal) variations in demand. Peak use periods typically occur during the morning and evening hours, especially during the breakfast and dinner hours. Water is typically withdrawn from storage during these peak

demand periods and replenished during low demand periods during late evening and early morning hours.

For the purposes of this Master Plan, a value of 33 percent of the maximum day demand (MDD) is used to determine the volume of operational storage. This value is based upon a review of available operational data and is consistent with the City's previous Master Plan.

7.4.3.2 Emergency Reserve Storage

The purpose of emergency reserve storage is to provide reliability should sources fail or when unusual conditions impose higher demands than anticipated. The volume of emergency reserve storage required is dependent upon the reliability of the source of supply and the ability to provide an alternative supply. If the system or zone has multiple sources of supply, placing the largest supply source out of service and calculating the volume of water that could be provided by the remaining supply sources can reduce the emergency reserve storage requirement.

For this analysis, the required volume of emergency reserve storage is assumed to be equal to 50 percent of the projected MDD. This emergency reserve storage is also equivalent to 100 percent of the demands for an average day. Since the City and SSCWD water system have multiple wells and sources of supply, this level of service is considered adequate and is similar to the criteria for similar systems throughout California.

7.4.3.3 Fire Suppression Storage

Water systems are required to construct and maintain facilities capable of delivering fire flows in accordance with the determination of the fire flow requirements made by the local fire protection authority while maintaining 20 psi pressure throughout the distribution system. Fire flow requirements for the Hollister Urban Area are assumed to be equal to 3,500 gpm for 4-hours (840,000 gallons) throughout the entire distribution system. The magnitude of the fire suppression storage is the product of the maximum flow rate and duration established by the fire protection authority.

7.4.4 Fire Suppression Criteria

The development of fire suppression criteria consists of two elements; storage volume and available fire flow at a minimum pressure. Storage volume for fire flow was discussed in Section 7.4.3. Criteria for minimum pressure are defined in Section 7.4.2.

7.4.5 Pump Station Criteria

New and existing pump stations should be designed to meet the design flow rate with the largest pump in the station out of service. Due to the frequency of power outages in the Hollister Urban Area, all pump stations should also be provided with standby power.

7.5 Water System Deficiencies

This section discusses deficiencies in the production, storage, and distribution piping identified during the development of this Master Plan. The criteria listed above and the hydraulic model were used to determine deficiencies.

7.5.1 Production Capacity and Booster Pumping

The capacity of the existing source (Lessalt Water Treatment Plant and wells) and booster pump stations have been compared to the projected MDD through buildout. The existing sources assume operation for 24 hours.

Three separate comparisons have been made; the full system, the High Pressure Zone by itself, and the combined High and Middle Pressure Zones. Table 7-2, Table 7-3, and Table 7-4 summarize the results of the three comparisons, respectively.

Table 7-3: Evaluation of High Pressure Zone Source Adequacy

	Year				
	2005	2013	2018	2023	Buildout
Projected Demands (mgd)					
Average Day	0.87	0.92	1.02	1.09	1.43
Maximum Day	1.74	1.83	2.03	2.18	2.86
Available Source (mgd) [(a)]					
Airline Highway BPS (300 gpm)	0.43	0.43	0.43	0.43	0.43
Ridgemark Well No.5 (850 gpm)	1.22	1.22	1.22	1.22	1.22
Ridgemark Well No.8 (800 gpm)	1.15	1.15	1.15	1.15	1.15
Total Available Source (mgd)	2.8	2.8	2.8	2.8	2.8
Source Surplus/(Deficiency) (mgd)	1.1	1.0	0.8	0.6	(0.1)

(a) Available source assumes 24 hour operation.

Table 7-3 summarizes the highest pressure zone (High Pressure Zone) by itself considering all facilities that can deliver water to the zone first to determine adequacy. An analysis was then conducted (summarized in Table 7-4) to evaluate the two highest pressure zones (High and

Middle). Facilities that convey water between the Middle and High Pressure Zones are not considered to be sources in this analysis. For the full system analysis, the Lessalt Water Treatment Plant and wells are considered sources. Water that is provided to a higher pressure zone is considered as source to a lower zone because of the connections between pressure zones that exist in the distribution system through PRVs.

Table 7-4: Evaluation of High and Middle Pressure Zone Source Adequacy

	Year				
	2005	2013	2018	2023	Buildout
Projected Demands (mgd)					
Average Day	3.33	3.56	3.93	4.17	6.69
Maximum Day	6.68	7.13	7.86	8.34	13.36
Available Source (mgd) [(a)]					
LESSALT (3.0 mgd)	3.00	3.00	3.00	3.00	3.00
Memorial BPS (1,000gpm)	1.44	1.44	1.44	1.44	1.44
Southside Well No.2 (950 gpm)	1.37	1.37	1.37	1.37	1.37
Ridgemark Well No.5 (850 gpm)	1.22	1.22	1.22	1.22	1.22
Enterprise Well No.7 (550 gpm)	0.79	0.79	0.79	0.79	0.79
Ridgemark Well No.8 (800 gpm)	1.15	1.15	1.15	1.15	1.15
Lico Well No. 11 (1,300 gpm) [(b)]	-	1.87	1.87	1.87	1.87
Bray Well No. 12 (1,500 gpm) [(b)]	-	2.16	2.16	2.16	2.16
Total Available Source (mgd)	8.98	13.0	13.0	13.0	13.0
Source Surplus/(Deficiency) (mgd)	2.3	5.9	5.1	4.7	(0.4)

(a) Available source assumes 24 hour operation.
(b) SSCWD is currently installing the Lico and Bray wells. Well capacity is estimated.

Demands for the various pressure zones are based on the distribution of system demands in the hydraulic model for each of the years evaluated. These demands have been created using existing and projected zoning and land use information.

7.5.1.1 Full System Pressure Zone Analysis

Table 7-2 shows the calculation of source and production adequacy for the full system analysis. The existing source capacity, including the two new SSCWD wells in the middle zone, is adequate to meet projected demands through 2020. Existing demands, without the two new SSCWD wells in the middle zone, equate to approximately 81 percent of current production capacity. Therefore, there is sufficient reserve capacity in the existing facilities to meet demands with the largest unit out of service.

There is a deficiency of approximately 1.2 mgd at the end of the planning period (2023). This deficiency will be made up by constructing new wells in the urban area.

7.5.1.2 High Pressure Zone Analysis

The calculation for source adequacy for the High Pressure Zone is shown in Table 7-3. The source for this zone includes the Ridgemark Wells and the Airline Highway Booster Pump Station. As shown in Table 7-3 the capacity of the existing sources is projected to be greater than the MDD for the High Pressure Zone through the year 2023. However, SSCWD has indicated that an additional well (2,000 gpm) will be drilled in the Ridgemark area.

7.5.1.3 Combined High and Middle Pressure Zones

The calculation for source adequacy for the combined High and Middle Pressure Zones is shown in Table 7-4. Similar to the High Pressure Zone analysis, the combined capacity of the existing sources for the High and Middle Pressure Zones is projected to be greater than the MDD through the year 2023.

7.5.2 Storage

Storage deficiency is evaluated in a manner similar to that used to determine source and production adequacy. Storage in the full system is compared to the required amount of storage (developed in accordance with the criteria listed in Section 7.4.3). Following a full system analysis, the storage in the High Zone was evaluated then the High and Middle Zone requirements were evaluated.

7.5.2.1 Full System Storage Analysis

The calculation of storage adequacy for the full system is shown in Table 7-5. The evaluation indicates that the system is currently deficient in storage by approximately 2 mgal. By 2023, the deficit is projected to be approximately 7.7 mgal.

Evaluation of the storage within the Hollister Urban Area distribution system indicates that there is a disproportionately high volume of storage in the Low Pressure Zone. While this storage volume is applicable to the full system evaluation, it is not available to the upper two pressure zones and thus there are significant deficiencies in the upper zones as described in the following subsections.

Table 7-5: Evaluation of Full System Storage Adequacy

	Year				
	2005	2013	2018	2023	Buildout
Projected Demands (mgd)					
Average Day	7.1	7.5	9.2	10.6	18.0
Maximum Day	14.2	15.0	18.4	21.1	36.0
Peak Hour	24.2	25.5	31.3	35.9	61.2
Required Storage Calculations					
Operational Storage (mgal) [a]	4.7	5.0	6.1	7.0	12.0
Emergency Reserve Storage (mgal) [b]	7.1	7.5	9.2	10.6	18.0
Fire Flow Storage (mgal) [c]	0.84	0.84	0.84	0.84	0.84
Required Storage [d]	12.7	13.3	16.1	18.4	30.8
Existing Drinking Storage (mgal)					
Fairview Road (SSCWD)	1.0	1.0	1.0	1.0	1.0
Ridgemark No.1 (SSCWD)	1.0	1.0	1.0	1.0	1.0
Ridgemark No.2 (SSCWD)	0.5	0.5	0.5	0.5	0.5
Fairview Road (City)	1.0	1.0	1.0	1.0	1.0
Park Hill No.1 (City)	2.2	2.2	2.2	2.2	2.2
Park Hill No.2 (City)	4.5	4.5	4.5	4.5	4.5
Sally Flat (City)	0.5	0.5	0.5	0.5	0.5
Total Existing Storage (mgal) [e]	10.7	10.7	10.7	10.7	10.7
Storage Surplus/(Deficiency)	(2.0)	(2.6)	(5.4)	(7.7)	(20.1)

(a) Required Operational Storage based on 33% of MDD.
(b) Required Emergency Reserve Storage based on 50 % of MDD.
(c) Required fire flow storage = Flow * duration (3,500 gpm for 4 hours).
(d) Total required storage is equal to the sum of the required operational storage, emergency reserve storage, and fire flow storage.
(e) Total existing storage includes all storage within the system and is not adjusted for minimum pressures.

7.5.2.2 High Pressure Zone Storage Analysis

Table 7-6 summarizes the calculation of storage adequacy for the High Pressure Zone. This pressure zone has a deficiency of 0.8 to 1.2 mgal between now and 2023. The only way this deficiency can be eliminated (assuming no change in projected demands) is to build new storage facilities within the High Pressure Zone.

7.5.2.3 Combined High and Middle Pressure Zones

The combined High and Middle Pressure Zone analysis is shown in Table 7-7. Analysis results show the largest deficiency of the three analyses is 4.3 mgal under 2023 demands. New storage in either the High or Middle Pressure Zones are required to mitigate this deficiency.

Table 7-6: Evaluation of High Pressure Zone Storage Adequacy

	Year				
	2005	2013	2018	2023	Buildout
Projected Demands (mgd)					
Average Day	0.9	0.9	1.0	1.1	1.4
Maximum Day	1.7	1.8	2.0	2.2	2.9
Peak Hour	3.0	3.1	3.4	3.7	4.8
Required Storage Calculations					
Operational Storage (mgal) [(a)]	0.6	0.6	0.7	0.7	1.0
Emergency Reserve Storage (mgal) [(b)]	0.9	0.9	1.0	1.1	1.4
Fire Flow Storage (mgal) [(c)]	0.8	0.8	0.8	0.8	0.8
Required Storage [(d)]	2.3	2.4	2.5	2.7	3.2
Existing Drinking Storage (mgal)					
Ridgemark No.1 (SSCWD)	1.0	1.0	1.0	1.0	1.0
Ridgemark No.2 (SSCWD)	0.5	0.5	0.5	0.5	0.5
Total Existing Storage (mgal) [(e)]	1.5	1.5	1.5	1.5	1.5
Storage Surplus/(Deficiency) at 20 psi	(0.8)	(0.9)	(1.0)	(1.2)	(1.7)

(a) Required Operational Storage based on 33% of MDD.
(b) Required Emergency Reserve Storage based on 50% of MDD.
(c) Required fire flow storage = Flow * duration (3,500 gpm for 4 hours).
(d) Total required storage is equal to the sum of the required operational storage, emergency reserve storage, and fire flow storage.
(e) Total existing storage includes all storage within the system and is not adjusted for minimum pressures.

Table 7-7: Evaluation of High and Middle Pressure Zones Storage Adequacy

	Year				
	2005	2013	2018	2023	Buildout
Projected Demand (mgd)					
Average Day	3.3	3.6	3.9	4.2	6.7
Maximum Day	6.7	7.1	7.9	8.3	13.4
Peak Hour	11.3	12.1	13.3	14.1	22.6
Required Storage Calculations					
Operational Storage (mgal) [(a)]	2.2	2.4	2.6	2.8	4.4
Emergency Reserve Storage (mgal) [(b)]	3.3	3.6	3.9	4.2	6.7
Fire Flow Storage (mgal) [(c)]	0.8	0.8	0.8	0.8	0.8
Required Storage [(d)]	6.4	6.8	7.4	7.8	12.0
Existing Drinking Storage (mgal)					
Fairview Road (SSCWD)	1.0	1.0	1.0	1.0	1.0
Ridgemark No.1 (SSCWD)	1.0	1.0	1.0	1.0	1.0
Ridgemark No.2 (SSCWD)	0.5	0.5	0.5	0.5	0.5
Fairview Road (City)	1.0	1.0	1.0	1.0	1.0
Total Existing Storage (mgal) [(e)]	3.5	3.5	3.5	3.5	3.5
Storage Surplus/(Deficiency) at 20 psi	(2.49)	(3.3)	(3.9)	(4.3)	(8.5)

(a) Required Operational Storage based on 33% of MDD.
(b) Required Emergency Reserve Storage based on 50% of MDD.
(c) Required fire flow storage = Flow * duration (3,500 gpm for 4 hours).
(d) Total required storage is equal to the sum of the required operational storage, emergency reserve storage, and fire flow storage.
(e) Total existing storage includes all storage within the system and is not adjusted for minimum pressures.

7.5.2.4 Storage Adequacy Summary

There is a need for a large amount of new storage in the upper and middle pressure zones. Because of the large excess storage in the Low Pressure Zone, the total amount of new storage needed to offset the deficiency in the upper two zones is higher than the overall storage deficiency. A schedule of recommended storage improvements is shown in Table 7-8. A total of 11 mgal of new storage is recommended through the year 2023 to address projected deficits. This 11 mgal storage recommendation includes an allowance (approximately 50 percent) for treated water stored in existing and future reservoirs that do not provide the minimum design pressure of 20 psi.

Table 7-8: Recommended Storage Improvement Schedule

	Year				
	2005	2013	2018	2023	Buildout
Existing Storage Surplus/(Deficiency) (mgal)					
System-wide Surplus/(Deficiency)	(2.0)	(2.6)	(5.4)	(7.7)	(20.1)
High Pressure Zone Surplus/(Deficiency)	(0.8)	(0.9)	(1.0)	(1.2)	(1.7)
High/Middle Pressure Zones Surplus/(Deficiency)	(2.9)	(3.3)	(3.9)	(4.3)	(8.5)
New Storage to be Constructed During Interval (mgal)					
New Storage in High Pressure Zone	2.0	--	1.0	-	6.0
New Storage in Middle Pressure Zone	2.0	2.0	2.0	2.0	4.0
New Storage in Low Pressure Zone	--	--	--	--	--
Total New Storage (mgal) [(a)]					
New Storage in High Pressure Zone	2.0	2.0	3.0	3.0	9.0
New Storage in Middle Pressure Zone	2.0	4.0	6.0	8.0	12.0
New Storage in Low Pressure Zone	--	--	--	--	--
Storage Surplus/(Deficiency) After Improvements (mgal)					
System-wide Surplus/(Deficiency)	2.0	3.4	3.6	3.3	0.9
High Pressure Zone Surplus/(Deficiency)	1.2	1.1	2.0	1.8	7.3
High/Middle Pressure Zones Surplus/(Deficiency)	1.1	2.7	5.1	6.7	12.5

Notes:
(a) The year identified for new storage is the latest in which it must be provided. New facilities could be constructed at an earlier time, if desired.
(b) New storage identified for 2005 indicates an existing deficiency.

The new storage could be provided with a single reservoir within a pressure zone or with a combination of reservoirs. The final location of new storage is dependent on the availability of appropriate land, land use and zoning, the availability of larger diameter piping, and other factors.

7.5.3 Distribution Piping

Distribution piping adequacy is based on the ability to meet PHD and fire flow demands and maintain adequate pressures in the piping.

Under current condition, there are only a small number of locations (as determined through the hydraulic model) where the minimum of 30 psi during PHD is not met. These locations are typically near the base of a reservoir and in one case immediately downstream of a PRV set for emergency conditions. New piping can eliminate these deficiencies, so no capital improvements are recommended to mitigate them.

Approximately three of the 644 junction nodes evaluated indicate available fire flow less than 1,500 gpm. Approximately 59 of the junctions have fire flow between 1,500 and 3,500 gpm (the value used in the storage analysis).

The three junctions with flow less than 1,500 gpm are located at the ends of 4- and 6-inch diameter dead-end pipelines that range in length from 500- to 1,100-feet. Dead-end lines with no hydrant on the end of the line have been excluded from the analysis.

7.6 Recommended Water System Improvements

All of the recommended water system improvements and phasing through the year 2023 are presented in Exhibit II. The improvements are phased according to near term (2015) and intermediate term (2023) needs.

8.0 Wastewater Master Plan

Management of wastewater is comprised of three distinct components: collection, treatment, and disposal. Major planning efforts for the treatment and disposal components have been completed by the City of Hollister and SSCWD. The long-term plans outline recommendations and outstanding decisions that need to be made to complete the vision for long-term wastewater treatment and disposal. This chapter summarizes the recommendations from the previously completed plans and technical memoranda (TMs) and describes how the upgraded wastewater treatment and disposal facilities will be incorporated into the overall integrated water resources plan. The documents used to develop the information presented in this chapter include the following:

- City of Hollister Long-term Wastewater Management Program for the DWTP and IWTP, Draft, December 2005
- DWTP Percolation Rate and Storage Alternative Analysis (Revision 2), May 2006
- SSCWD Long-term Wastewater Management Plan, January 2006
- SSCWD Draft Local Wastewater Alternative Predesign TM, June 2006
- Phase I Effluent Management Project Technical Memorandum, May 2006
- San Benito County Water District – Recycled Water Feasibility Study Update, Draft, April 2008
- City of Hollister Supplemental Environmental Impact Report, Draft, December 2007
- SSCWD Simulation of Impacts of Wastewater Alternatives on Groundwater Flow and Salinity, Draft, July 2008

Improvements to the wastewater collection system were not specifically addressed in previously completed studies. This Master Plan provides recommended design criteria for collection system pipelines and lift stations.

8.1 Treatment Plant Improvements

Treatment plant improvements are being implemented by the City of Hollister and SSCWD to meet RWQCB WDR permits and orders. The RWQCB WDR water quality requirements (e.g.

BOD, TSS, ammonia, nitrate, total dissolved solids, sodium, chloride, etc.), summarized in Chapter 3, are intended to protect beneficial use of surface and groundwater.

The treatment plant improvements that have been identified to date focus on typical wastewater constituents such as BOD, TSS, ammonia, and nitrate. Salinity levels in wastewater are expected to be reduced with the implementation of the drinking water improvements described in Chapter 7.

8.1.1 City of Hollister Treatment Improvements

The City of Hollister Long-term Wastewater Management Program for the DWTP and IWTP (Draft, December 2005) evaluated treatment alternatives and identified recommendations for treatment. The following sections summarize the recommendations for the Domestic Wastewater Treatment Plant (DWTP) and Industrial Wastewater Treatment Plant (IWTP).

8.1.1.1 Domestic Wastewater Treatment Plant

A new membrane bioreactor (MBR) process will be constructed at the DWTP to meet permit requirements and meet long-term goals and objectives. The upgrade will accommodate increased flows and will produce treated effluent suitable for the City's long-term effluent management plan (recycled water distribution). The main goals for this treatment plant upgrade are:

- To meet RWQCB effluent quality requirements; and
- To provide additional treatment capacity for planned development in the Hollister Urban Area.

The MBR process is capable of producing high-quality effluent that meets requirements for "Disinfected Tertiary Recycled Water" as defined by the State of California Title 22 recycled water regulations. The MBR process also has the advantage of producing treated wastewater that can be directly treated by reverse osmosis for salinity control. The MBR process will be designed for the following objectives:

- Meet future regulatory requirements
- Maximize the City's effluent disposal options
- Support potential future salinity reduction

- Provide an approved Title 22 recycled water technology

To meet anticipated wastewater effluent quality requirements, the MBR system was designed to produce effluent that will meet a 5 mg/L nitrate limitation. Although the MBR plant produces a high-quality effluent that meets Title 22 requirements, the MBR system does not reduce salinity.

The MBR system will have a rated average dry weather flow capacity of 4.5 mgd and a peak wet weather flow capacity of 5.0 mgd to allow for seasonal variations. This average dry weather flow capacity was originally based on projected 2023 flows assuming wastewater flow would be conveyed to the facility from the SSCWD. However, as described in more detail below, SSCWD has chosen to upgrade their RM1 wastewater treatment plant.

To reduce the construction costs for the new DWTP, only the membranes required to provide a peak wet weather flow capacity of 4.0 mgd will be installed initially. The remaining membranes were initially planned to be installed by 2013 to increase the peak wet weather flow capacity to 5.0 mgd. However, the installation of these additional membranes will likely be delayed until 2018 to 2020, depending on the pace of development in the region and as a result of SSCWD's decision to remain independent. Figure 8-1 shows projected wastewater flows and the rated capacities of the new DWTP following the various expansion phases between 2005 and buildout.

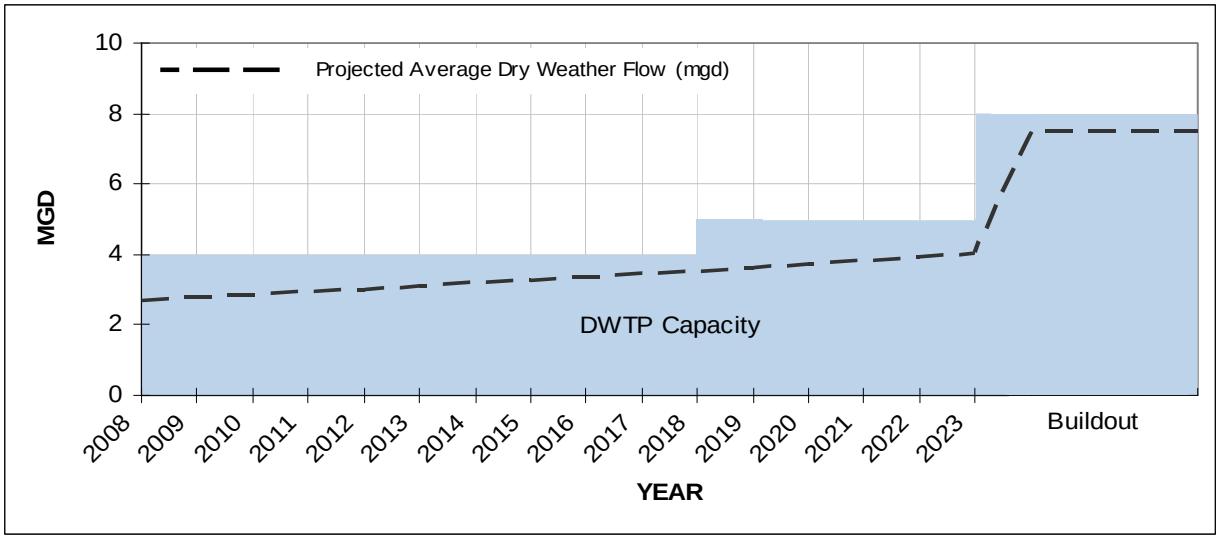


Figure 8-1: Projected Wastewater Flows and Treatment Capacity Requirements

To provide adequate time to properly plan and execute the last two expansion phases, the planning efforts for these expansions should be initiated when wastewater flows are approximately equal to 75 percent of the DWTP's rated capacity.

The proposed 5.0 mgd MBR facility will be located at the existing DWTP site and will replace the existing DWTP pond treatment system. The new treatment facility will reuse the existing influent lift station and headworks elements constructed in 2003. A process flow diagram of the proposed MBR treatment plant is shown in Figure 8-2. Design documents for this new facility were completed and construction bids were received on October 18, 2006. The construction contract was awarded on October 30, 2006 to Overaa Construction. The new wastewater treatment plant is scheduled to be operational by the end of 2008.

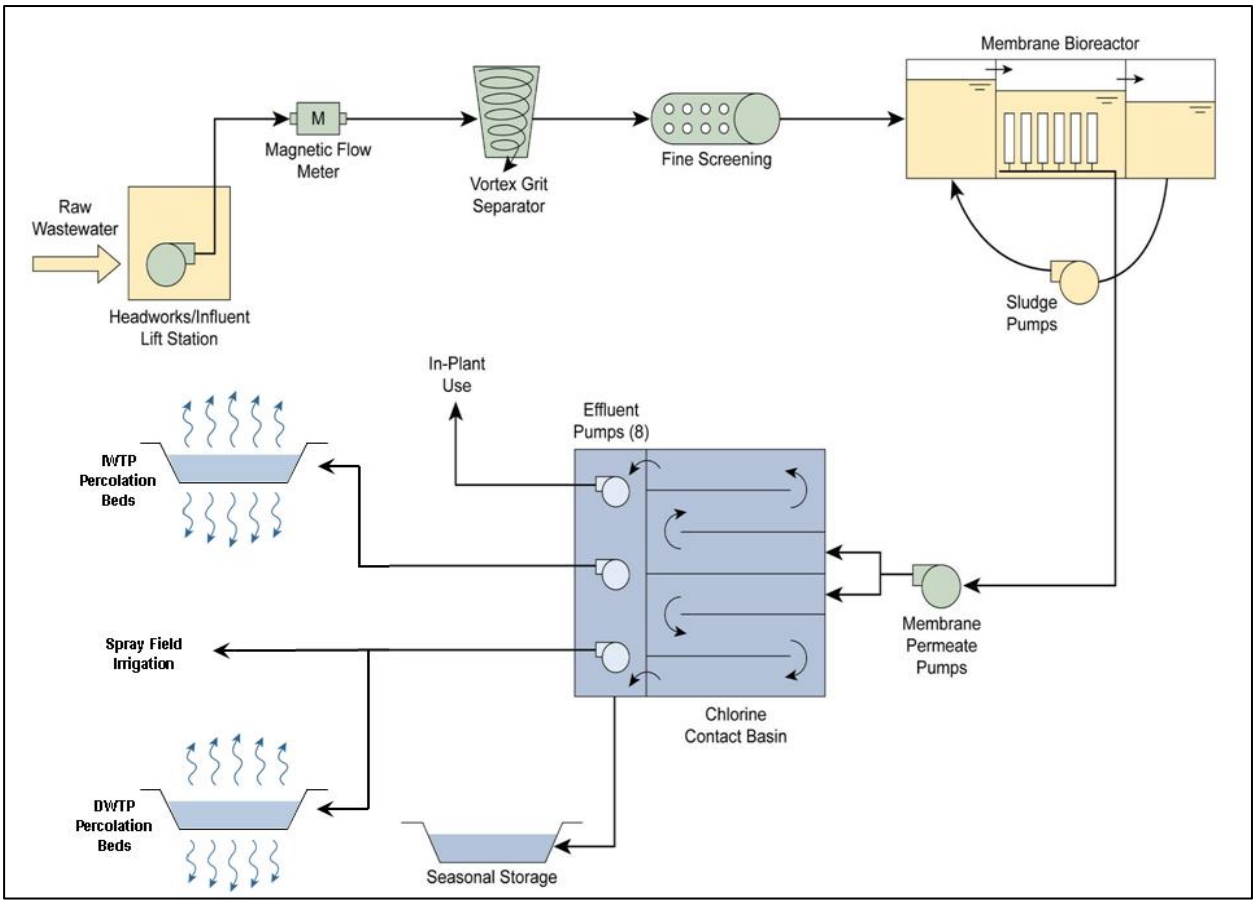


Figure 8-2: Upgraded DWTP Process Schematic

8.1.1.2 Industrial Wastewater Treatment Plant

Evaluations of the IWTP treatment and disposal systems do not indicate any deficiencies. A March 1983 study conducted by San Benito Engineering and Surveying concluded that disposal capacity is the limiting factor at the IWTP. It estimated that the capacity of the storage plus discharge capacity was 7.5 mgd, based on canning season operation, measured percolation rates, and past observations of flow and pond levels. Current influent flows are significantly less than this estimated disposal capacity. Unless unforeseen industrial customers come online, influent flows to the IWTP are expected to decrease once the City implements the long-term wastewater management plan and stops diverting domestic wastewater to the IWTP. Based on these results, there are no proposed improvements for the IWTP beyond identifying a solution to recent TDS, sodium, and chloride permit exceedances. Primary emphasis for improving effluent quality at the IWTP is source control at San Benito Foods and the implementation of a wastewater/storm water separation project.

8.1.2 Sunnyslope County Water District Treatment Improvements

SSCWD's Long-Term Wastewater Management Plan, January 2006, identified two primary alternatives for improvements to the wastewater treatment system serving the SSCWD wastewater service area. The wastewater service area for SSCWD consists exclusively of the Ridgemark Development located south of Airline Highway. The two alternatives for improvements to this wastewater system are as follows:

- Upgrade existing wastewater treatment facilities in the Ridgemark area to respond to more stringent requirements issued by the RWQCB.
- Pump raw wastewater to the City of Hollister's new MBR treatment plant for subsequent treatment and disposal.

The Long-Term Wastewater Management Plan did not include a recommendation as additional collaboration and negotiation with the City of Hollister was necessary to fully evaluate the financial costs of having Ridgemark area flows diverted to the City WWTP. However, after conducting further studies and discussions with the City, SSCWD chose to upgrade the existing wastewater treatment facilities.

Design of the Ridgemark wastewater and recycled water treatment improvements project began in 2008. The wastewater treatment plant will be upgraded with a sequencing batch reactor

(SBR) process which will meet waste discharge requirements for nitrogen, BOD, and TSS. The new SBR process is being designed to accommodate future connections within the existing SSCWD wastewater service area. In addition to the SBR process, the treatment plant improvements will include a new main influent pump station, headworks, solids handling facilities, and site decommissioning. The upgraded plant will also include a future phase, in which recycled water facilities (filtration and disinfection processes), will be added to meet future disposal and water supply needs. Design has been initiated and construction of the wastewater treatment plant upgrade project is expected to be complete in fall 2010, followed by completion of the recycled water facilities by 2011. Figure 8-3 shows a process flow schematic of the proposed SBR plant.

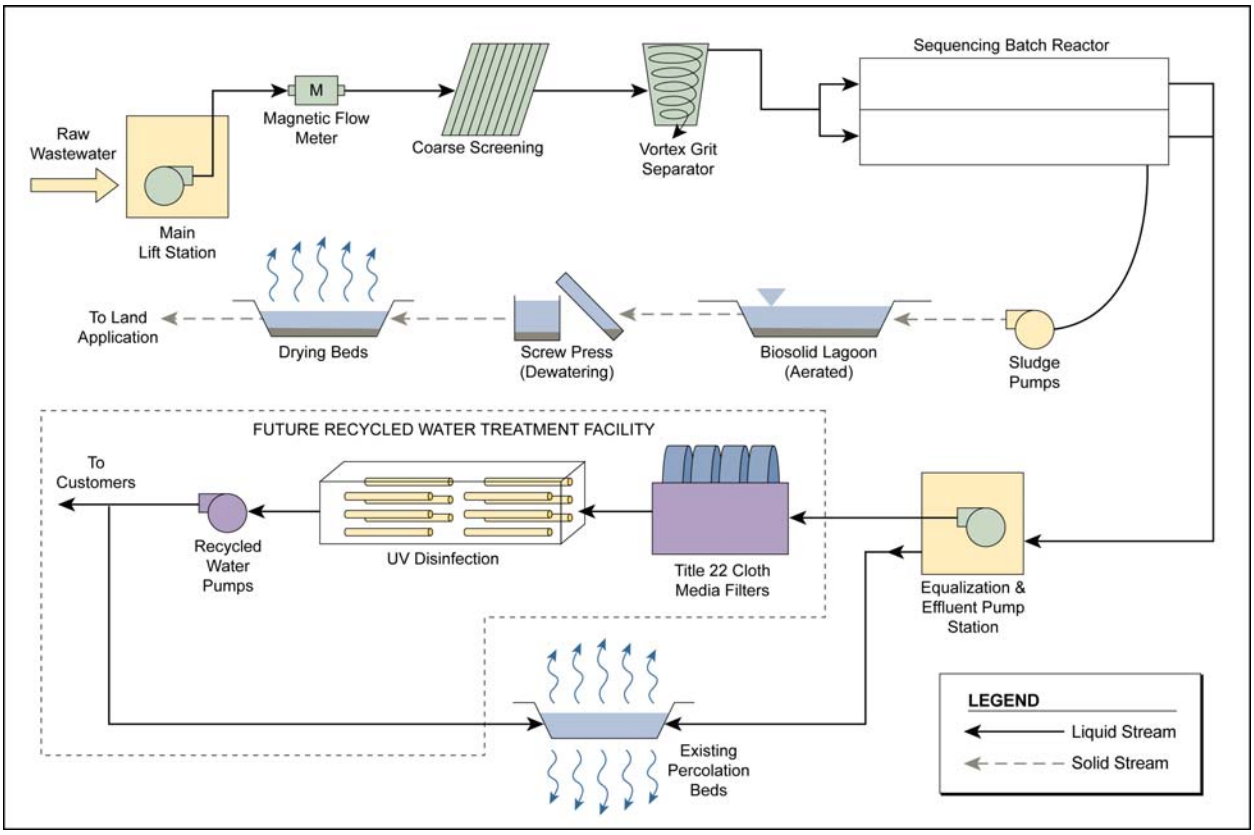


Figure 8-3: Ridgemark Area Wastewater Alternative Process Schematic

8.1.3 Cielo Vista Estates Treatment Improvements

As discussed in Chapter 3, the Cielo Vista Estates Wastewater Treatment Plant currently meets RWQCB discharge requirements. Therefore, no improvements are necessary at this time for the collection, treatment, or disposal components. However, it should be recognized that Cielo

Vista Estates' current WDR permit was adopted in 1987. In the next WDR permit cycle, it is likely that Cielo Vista Estates would be subject to discharge requirements similar to the SSCWD requirements for BOD, TSS, ammonia, nitrate, and salinity. Like SSCWD, Cielo Vista Estates would likely have the option of connecting to the City's system or constructing a new facility. Given the volume of flow routed to the Cielo Vista Estates WWTP relative to the capacity of the new DWTP, conveyance of raw wastewater from Cielo Vista Estates to the DWTP is not expected to significantly impact the facility requirements currently under construction at the DWTP. Therefore, for this Master Plan, it is assumed that Cielo Vista Estates will ultimately connect to the City WWTP.

8.2 Wastewater Disposal Improvements

The City's Long-Term Wastewater Management Program recommended a two-phase approach for interim and long-term effluent disposal management. The two-phase approach is required due to high salinity which limits the use of recycled water for high value crop irrigation, currently identified as the planned long-term disposal project. Interim disposal needs were further refined in the City's DWTP Percolation and Storage Alternative Analysis TM dated May 2006.

The following sections summarize the latest vision of the disposal improvements.

8.2.1 Phase 1 Interim Disposal Facilities

Table 8-1 summarizes maximum disposal needs for the DWTP based on increased wastewater flows from population growth defined by the City and County General Plans.

Table 8-1: City of Hollister DWTP Effluent Disposal Water Balance Summary

Year	Required Disposal Capacity (AF)[a]	Precipitation minus Evaporation (AF)[b]	Percolation Disposal (AF)	Required Spray Field/RW Disposal Capacity (AF)
2008	3,326	120 (Precipitation)	3,047	399
2015 (Interim Project)	4,032	86 (Precipitation)	2,879	1,239
2023 (Long-term Project)	5,040	127 (Precipitation)	840	4,327

Notes:
Based on DWTP Percolation and Storage Alternative Analysis TM dated May 2006
(a) Required Disposal Capacity includes flows from SSCWD
(b) Based on 100-year rainfall event

The City and SBCWD have an agreement that existing flows may be disposed of through the existing percolation ponds but that any new wastewater flows associated with development

shall be disposed of through spray field irrigation or recycled water use. Therefore, a spray field and/or recycled water project will need to be implemented by the end of 2008 to accommodate future growth and new connections.

Phase 1 interim improvements (for disposal from 2008 to 2015) will include a combination of continued percolation at the existing DWTP and IWTP disposal ponds, implementation of a partially-lined seasonal storage reservoir that facilitates percolation, and spray field/recycled water irrigation.

Currently, the DWTP and IWTP dispose of approximately 2.7 mgd of domestic wastewater which is the assumed long-term average percolation capacity. A new 12-inch pipeline from the DWTP to the IWTP for treated effluent conveyance will be constructed to facilitate use of the percolation capacity at the IWTP. This will provide the City with the operational flexibility to manage the existing percolation ponds at the DWTP. As previously discussed, no additional percolation is planned to take place.

The Seasonal Storage Reservoir with capacity of approximately 800 acre-feet will be located at the DWTP site to the west of Highway 156. The Seasonal Storage Reservoir will provide required storage due to limited wet weather percolation capacity and limited irrigation demand during the wet weather season. Treated wastewater will be stored in the reservoir and used for irrigation or percolated during the dry weather season when percolation capacity and irrigation demand increases.

Spray fields and/or recycled water sites are the final component of the interim disposal improvements. As described above, the City and SBCWD have agreed that spray fields and/or recycled water projects will be implemented to increase disposal capacity to accommodate wastewater flow increases. The City, SBCWD, and San Benito County considered five sites for potential use, including the Hollister Municipal Airport, Brookhollow Ranch, Pacific Sod Farm, San Juan Oaks Golf Club, and the proposed Brigantino Riverside Park locations for Phase 1 disposal of recycled water. These sites were evaluated in the Hollister Reclaimed Water Project Supplemental Environmental Impact Report.

In early 2008, the City, SBCWD and San Benito County elected to implement the Phase 1 Recycled Water Project at the Brigantino Riverside Park and the Hollister Municipal Airport.

The disposal site at Riverside Park is approximately 45 acres of turf with an annual disposal capacity of 157 ac-ft. The disposal site at the Hollister Municipal Airport has an irrigable area of approximately 247 acres with an annual disposal capacity of 803 ac-ft. Together, these two sites will provide sufficient disposal capacity through 2015.

Design documents for the conveyance facilities to the Hollister Municipal Airport site have been completed and construction bids were received on June 18, 2008. The construction contract was awarded to Delta Excavating. Construction of both the transmission facilities and on-site irrigation facilities is expected to be complete in spring 2009. Similarly, construction of the Riverside Park facilities is also expected to be complete in spring 2009.

8.2.2 Phase 2 Long-Term Disposal Facilities

The Phase 2 Long-Term Disposal Plan (for disposal from 2015 to 2023 and beyond) includes the addition of a recycled water distribution system to provide a high quality water supply for primarily agricultural uses. However, service to other customers in the region including urban use such as park irrigation and golf course irrigation may also be provided. This second phase is contingent on recycled water salinity levels being reduced to meet crop and landscaping water quality requirements.

Recycled water distribution alternatives and recommendations were developed and identified in the San Benito County Regional Recycled Water Project Feasibility Study, May 2005. As described in Chapter 4, this study was subsequently updated and is included as Appendix I.

The recommended long-term recycled water project is a phased approach. In the first phase, Phase 2A, recycled water would be distributed to agricultural users in the Wright Road / McCloskey Road corridor. The City and SBCWD agreed to size the Phase 1 transmission pipeline such that it would provide sufficient capacity to also serve Phase 2. For Phase 2A, the Phase 1 transmission pipeline would be extended from the intersection of Wright Road and Briggs Road, east along McCloskey Road to Fairview Road.

As development in Wright / McCloskey corridor occurs and recycled water production exceeds irrigation demands within this area, Phase 2B would be implemented. The Phase 2A facilities will provide opportunities for future, Phase 2B, use in the Lone Tree area, Santa Ana Valley, East of Fairview Road or other areas. Alternatively, since the Phase 2A investment would be

relatively minimal, the phased approach provides flexibility to distribute water to the San Juan Valley if future circumstances indicate that this would be a preferred strategy.

The proposed Phase 2A facilities are illustrated in Figure 8-4. Up to an estimated 4,200 af/yr may be available when the recycled water quality meets agricultural water quality objectives.

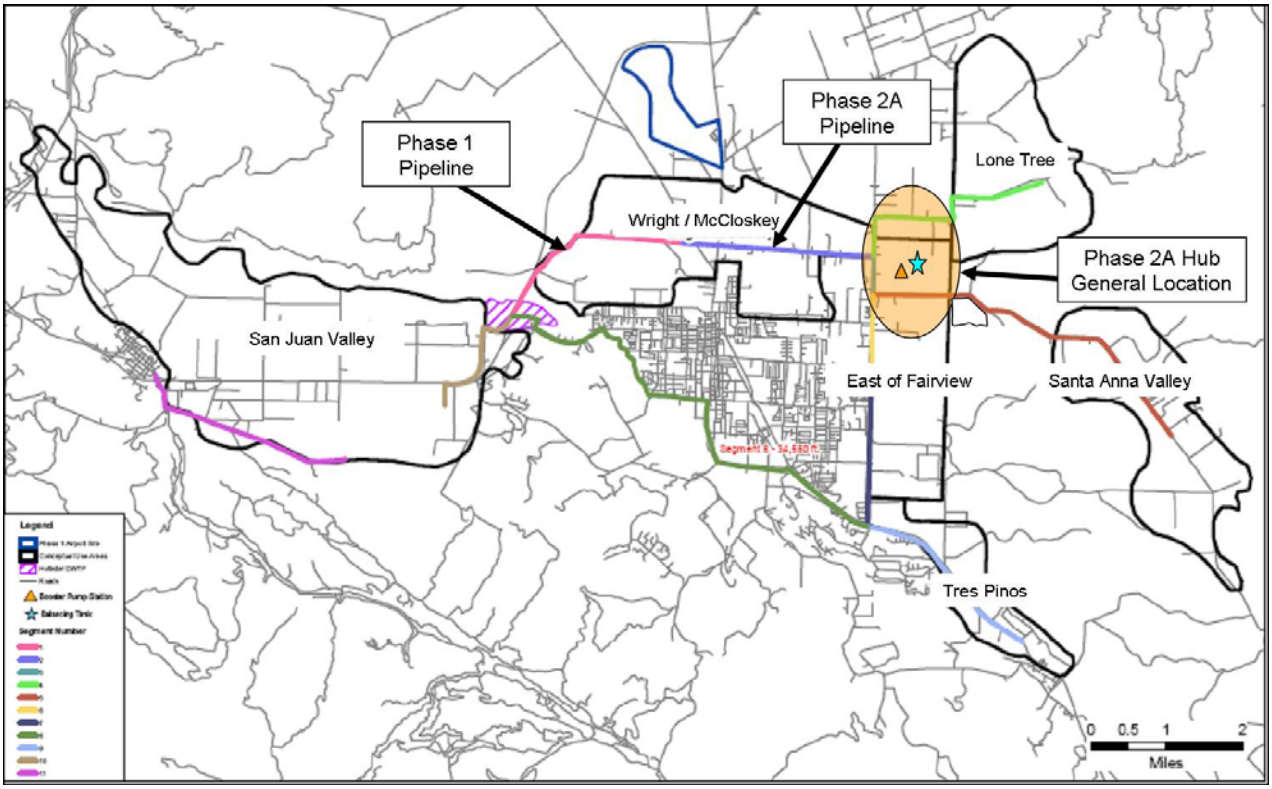


Figure 8-4: Recommended Phase 2A Recycled Water Transmission System

8.2.3 SSCWD Disposal Facilities

As described in Section 8.1, SSCWD's upgraded wastewater treatment plant will include a recycled water treatment facility capable of producing high-quality effluent that meets requirements for "Disinfected Tertiary Recycled Water" as defined by the State of California Title 22 recycled water regulations.

The SSCWD recycled water project will provide recycled water to the Ridgemark Golf Course for irrigation. Since the recycled water is expected to have a high salt content, the recycled water project will include blending with current golf course irrigation water, either groundwater or CVP supply. The recycled water facility will deliver between 158 and 261 af/yr to the golf course depending on the supply with which it is blended.

8.3 Wastewater Collection System Improvements

Collection system improvements to accommodate future growth include laterals to new customers, pump station upgrades, new pump stations, existing collection system replacement, and other improvements. Currently, the City and SSCWD do not have collection system models to evaluate required improvements. It is recommended that a collection system model be developed similar to the model for the water distribution system to determine system capacities, deficiencies, and optimum methods for expansion. In addition, this model would serve as a resource for the development of the City's and SSCWD's Sanitary Sewer Management Plans, respectively, as required by California's Statewide WDR[1].

8.3.1 City of Hollister Collection System Improvements

Over the planning horizon of this Master Plan (to 2023), development of approximately 2,760 acres is envisioned throughout the Hollister Urban Area including residential, rural, commercial, and industrial properties. New development is generally situated along the perimeter of the existing urban area to the north, east, and south as shown on Exhibit III. The following subsections describe the recommended wastewater collection system design criteria for gravity systems, lift stations, and force mains.

8.3.1.1 Gravity Systems Design Consideration

All gravity system sewers should be designed to be consistent with the following design criteria described in this subsection. Gravity sewers may be classified as follows:

- Lateral – A sewer that has no other common sewers discharging into it.
- Submain – A sewer that receives flow from one or more lateral sewers.
- Main or Trunk – A sewer that receives flow from one or more submain.
- Interceptor – A sewer that receives flow from a number of main or trunk sewers, force mains, etc.

Design Period. Service laterals and collection sewers shall be designed for the ultimate development of the tributary areas. Trunk and interceptor sewers design period selection should

[1] Statewide General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems, Water Quality Order No. 2006-0003 (Sanitary Sewer Order), May 2, 2006.

be based on an evaluation of economic, functional, and other considerations. Some of the factors that should be considered in the evaluation are:

- Possible solids deposition, odors, and pipe corrosion that might occur at initial flows.
- Population and economic growth projections and the accuracy of the projections.
- Comparative costs of staged construction alternatives.
- Effect of sewer sizing on land use and development.

Design Basis. Sewer systems shall be designed on the basis of per capita flows for the design period in conjunction with a peak factor, or approved alternative methods. Design calculations for trunk and interceptors sewers shall be submitted to the City or SSCWD for approval. Replacement mains or rehabilitation of existing mains shall be designed on the basis of measured flows with approval of the authorized agency.

Designing for average daily wastewater flows for new systems should be based on per capita flows. Existing water systems within the area can be used to help substantiate the selection of per capita flows.

Generally, the sewers shall be designed to carry at least the peak hourly flow when operated at capacity. Peak hourly flow should be the design average daily flow in conjunction with a peaking factor. The peaking factor used for the City of Hollister DWTP improvements is 2.0.

Use of per capita flows and the peaking factor is intended to cover normal infiltration and inflow (I/I) for systems built with modern construction techniques. However, an additional allowance should be made for I/I with existing conditions such as high groundwater, older systems, or a number of illicit connections. I/I allowances for existing systems should be made from actual flow data to the greatest extent possible. Domestic wastewater flows in the City of Hollister averaged 2.72 mgd in 2004 with little I/I observed. A 10 percent allowance for I/I is included in the sizing of the improvements to the City DWTP.

Minimum Sewer Diameter. In general, no sewer shall be less that 6 inch in diameter, except in special cases. The following is a set of design criteria for determining sewer size using Manning's equation:

- Pipe Diameter
  - 12-inch and smaller: ½ full at peak flow
  - Greater than 12-inch: ¾ full at peak flow
- Velocity
  - Minimum: 2 feet per second
  - Maximum: 10 feet per second
- Manning's Roughness Coefficient (n): 0.013
- Minimum Slope Requirements:
  - 6-inch Diameter: 1.0 ft per 100 ft
  - 8-inch Diameter: 0.40 ft per 100 ft
  - 10-inch Diameter: 0.30 ft per 100 ft
  - 12-inch Diameter: 0.24 ft per 100 ft
  - 14-inch Diameter: 0.17 ft per 100 ft
  - 16-inch Diameter 0.14 ft per 100 ft

Alignment. Generally, gravity sewers shall be designed with straight alignment between manholes. However, curved sewers may be approved where circumstances warrant.

8.3.1.2 Lift Stations

Location and Site Selection. Wastewater lift stations are usually located at the low point of the service area. The pump discharges to the treatment works or to a high point in the sewer system for continued conveyance by gravity. Generally, lift stations should only be used when gravity flow is not possible.

There is often little choice in siting sewage lift stations. Locations should be sited as far as practical from present or proposed residential areas to reduce community impacts. The amount of land required is a direct function of the station's size and type and of the need or desire for ancillary facilities such as a maintenance building. The station should be sited to accommodate reasonable pumping head, force main length, and depth of the gravity influent sewer(s). Other considerations include:

- Access for maintenance vehicles.
- Local land use and zoning regulations.
- Location on public right-of-ways versus private easements or site acquisition by the sewer purveyor.
- Permits (or variances) which might be required, such as grading, building, etc.
- Availability of needed utilities, such as water, electricity, and natural gas.
- Applicable noise ordinances, especially when an emergency backup generator is present.
- Space for future expansion, especially if population growth or development in the drainage area may increase substantially.

Flood Protection. The lift station shall be designed to remain fully operational during a 100-year rainfall event.

Design Flow Rates. The firm capacity of a lift station shall be equal to or greater than the peak hourly design flow. This peak design flow should be based on projected growth in the tributary area, future improvements anticipated in the collection system, and any phased improvements planned for the lift station and force main. It should also allow for reasonable amount of wear to pump equipment, particularly in a tributary area that is at or near buildout. Because mechanical and electrical equipment is typically designed for a 20-year life expectancy, it is recommended that the peak design flow be based on a 20-year forecast or greater.

In addition to establishing the peak design flow, it is also necessary to review minimum flows and determine how the lift station will operate under low flow conditions.

System Hydraulics. System hydraulics should provide an optimum balance for the force main characteristics, pump selection, and minimum and maximum flows. The force main should be small enough diameter to minimize solids deposition yet large enough that the total head permits a good pump selection and minimizes the requirements for surge protection facilities. Recommended sizing considerations for force mains are covered in the next subsection.

Lift stations should be designed to operate under the full range of project system hydraulic conditions. Both new and old pipe conditions should be evaluated, along with various

combinations of operating pumps and minimum and maximum flows, to determine the highest head and lowest head pumping conditions. The system should be designed to prevent a pump from operating for long periods of time beyond the pump manufacturer's recommended normal operating range.

Selection of head loss coefficient for pipes and valves should be conservative to allow for installation of equipment variations and normal aging of the pumping system.

Number of Pumps. The number of pumps selected shall allow the station to provide the peak design flow with the largest pump out of service. Also, the number of pumps should correlate to the wetwell size and prevent excessively short periods between pump starts. On constant speed lift stations, the number of pumps is often based on the pumping capacity required to provide a minimum scour velocity in the force main.

Pump Selection. Pumps should be designed for pumping sewage and capable of passing solids at least 3 inches in diameter. Pump suction and discharge should be 4 inches or greater.

Flow Measurement. Suitable devices for measuring sewage flow shall be provided at lift stations. Run timers should be provided on all pumps.

A wide variety of lift station level and flow control devices and instrumentation exists. Consider strategies that use instrumentation, monitoring, control, or process-driven concepts to integrate flow measurement into the overall perspective of the lift station design. With complete information at hand, or data available for computer analysis, greater gains can be made in operating efficiency, maintenance prediction, budgeting, and other useful productivity steps.

8.3.1.3 Force Mains

Except for small grinder or effluent pump installations, piping for force mains should not be less than 4 inches in diameter. As a general rule, whenever the velocity exceeds 8 foot per second, a larger diameter force main should be used.

At pumping capacity, a minimum self-scouring velocity of 2 foot per second should be maintained unless flushing facilities are provided. Velocities should not exceed 8 foot per

second. Optimum velocities for reducing maintenance costs and preventing accumulation of solids range between 3.5 and 5 foot per second.

As a general rule, the following appurtenances should be provided on each force main:

- Air relief valve(s) placed at high points in the force main to relieve air locking.
- Blow-offs placed at low points of force mains where gritty material can accumulate and restrict flow.
- Thrust restraint to restrain or anchor the force main and prevent excessive movement and joint separation.

8.3.2 SSCWD Collection System Improvements

The SSCWD collection system serves the Ridgemark area and has approximately 1,200 connections and future development is expected to add approximately 460 housing units. Figure 8-5 shows the envisioned future development areas. Collection system upgrades will include construction of 6- to 8-inch diameter gravity sewers and pump stations to convey wastewater to treatment facilities.

Planned near-term capital improvements include upgrades or relocation of the Oak Creek Lift Station and replacement of the forcemain from Oak Creek to RM I. Main lift station upgrades would also be implemented in conjunction with wastewater upgrades to convey wastewater to the upgrade treatment plant.

8.3.3 Cielo Vista Estates Collection System Improvements

The Cielo Vista Estates collection system has adequate capacity to meet current wastewater flows. There is no future development planned for this area. Therefore, no improvements are planned at this time.

8.3.4 Septic Tank Service Areas

Within the Hollister Urban Area, it is estimated that approximately one percent of existing homes utilize septic tanks and leach fields for wastewater disposal. Local ordinances described in Chapter 4 define the requirements and limitations for new septic systems. It is assumed that

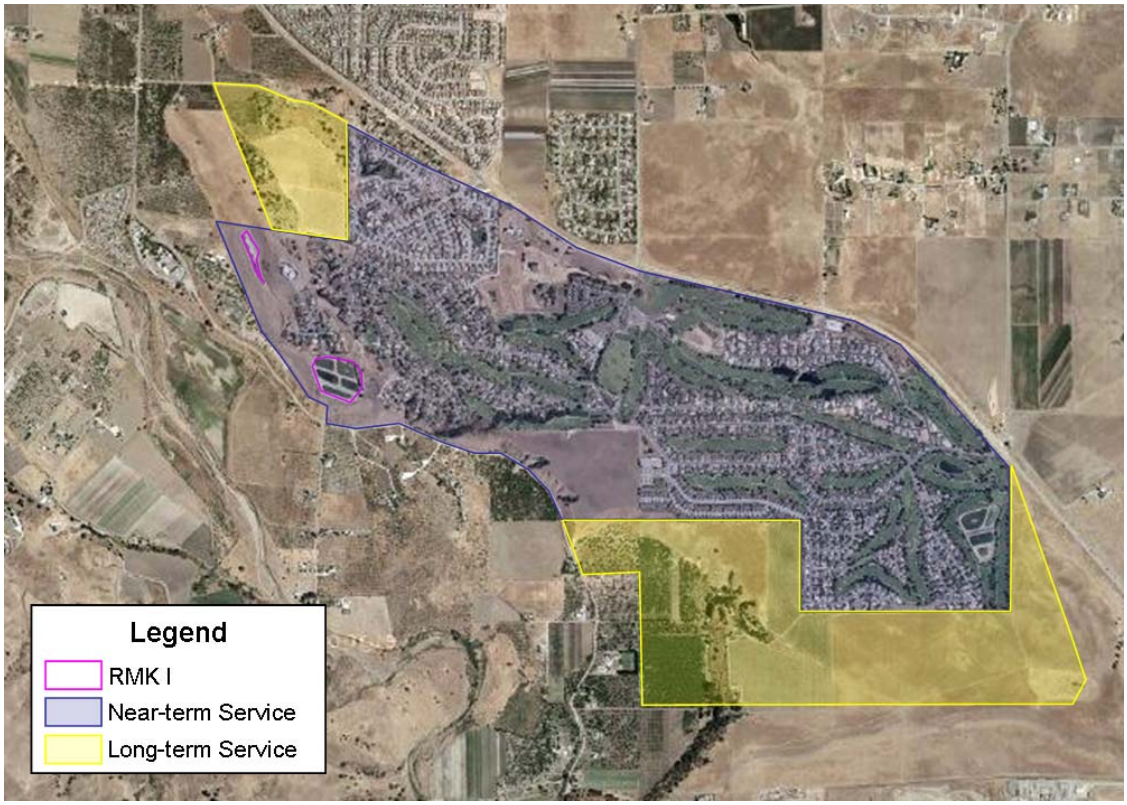


Figure 8-5: Future Development in SSCWD Wastewater Service Area

septic service areas will be connected to the City wastewater system in the future if water quality or operational problems develop. However, due to the relatively small number of septic systems, these flows will not significantly impact the City WWTP.

For the special study areas identified in Chapter 4, most rely on septic systems. Program solutions for future monitoring of these special study areas are presented in Chapter 5.

8.4 Recommended Wastewater System Improvements

All of the recommended wastewater system improvements and phasing through the year 2023 are presented in Exhibit III. The improvements are phased according to near term (2015) and intermediate term (2023) needs.

9.0 Implementation Program

The previous chapters of this Master Plan provided background information, described the alternatives development and evaluation process, and identified the recommended water and wastewater facilities. This chapter presents the activities required for implementation including benefit and cost allocation, institutional agreements, engineering, CEQA compliance, permitting, coordination with ongoing programs, stakeholder outreach, financing, an implementation schedule, and recommended next steps.

9.1 Integrated Water and Wastewater Plan

The recommended facilities for the water and wastewater systems are described in Chapters 7 and 8, respectively. This section describes the integrated water and wastewater plan.

9.1.1 Description of Integrated Plan

The integrated water and wastewater plan is summarized in Table 9-1 and Figure 9-1. The integrated plan includes common elements for program solutions and the base case water, wastewater, and recycled water facilities. The urban water supply plan is a phased solution implementing first Alternative 3B – Phased Demineralization of Urban Wells, and later, if required, expanding the demineralization of urban wells in accordance with Alternative 3A – Demineralization of Urban Wells to Meet MOU Goals. The need for and timing of future expansion should consider both growth in water demand and the performance of and ability to optimize the initial phase of demineralization. There may be opportunities to optimize the initial demineralization facilities using a new approach for well operations and/or additional infrastructure improvements. Additionally, as the demineralization technology develops, there could be lower cost treatment and brine disposal options in the future. The flexibility provided by the phased solution will allow the MOU Parties to revisit this Master Plan by 2015 and evaluate the need to expand demineralization and the timing of the expansion.

The integrated plan provides the facilities required to meet the water and wastewater needs of the Hollister Urban Area through the year 2023. However, the plan also provides flexibility to respond to changing conditions and a framework to meet the water and wastewater needs at buildout conditions. For example, as shown in Table 9-1, there is a menu of long-term water supplies and regional options. This menu consists of alternatives developed and analyzed in this Master Plan. Between the year 2023 and buildout, an additional 8,300 ac-ft of water will

be required on an annual basis. To meet this long-term need, the menu shown on Table 9-1 provides a starting point for pursuing the required water supplies. Due to the time required for developing major water supply projects, it is recommended that all of these potential sources of supply be investigated in parallel to provide the most flexibility for future development.

Table 9-1: Integrated Water and Wastewater Master Plan

2023 Master Plan		Long Term Water Supplies and Regional Options	
Common Elements	Urban Water Supply Plan		
Program Solutions Water Conservation Softener Ordinance Salinity Education Dual Distribution Systems in New Developments Base Case Facilities Lessalt Upgrade SSCWD Softening and Demineralization Projects SSCWD Ridgemark WWTP and Recycled Water Projects Treated Water Storage Facilities Phase 2A Recycled Water Facilities (By 2015) New Wells DWTP Expansion	Alternative 3B – Phased Demineralization of Urban Wells (By 2015) Alternative 3A – Demineralize Urban Wells to Meet MOU Water Quality Goals	Alternative 1A – Exchange Agricultural CVP Supply for Recycled Water – Treat Locally and/or Use for Exchange as Part of Regional Option Alternative 1B – Reallocate Unused CVP M&I Entitlements Alternative 2A – Develop Local Surface Water Supply	Concept 4 – Utilize Water from High Groundwater Basins Exchange North Area Groundwater for CVP Supply from PVWMA Demineralize or Soften Groundwater from San Juan Subbasin and Import to Urban Area
		Other Water Supplies and Options Identified Through Ongoing Regional Studies and Future Updates to Master Plan	

Implementation Timing ↓

Implementation Timing →

9.1.2 Compliance with MOU

As described in Chapter 1, this Master Plan was initiated by the MOU Parties in accordance with a Memorandum of Understanding executed in 2004. The MOU was subsequently amended in early 2008 to include SSCWD. The overall intent of the MOU is to develop a comprehensive Master Plan to address the long-term water and wastewater needs of the Hollister Urban Area using an integrated approach.

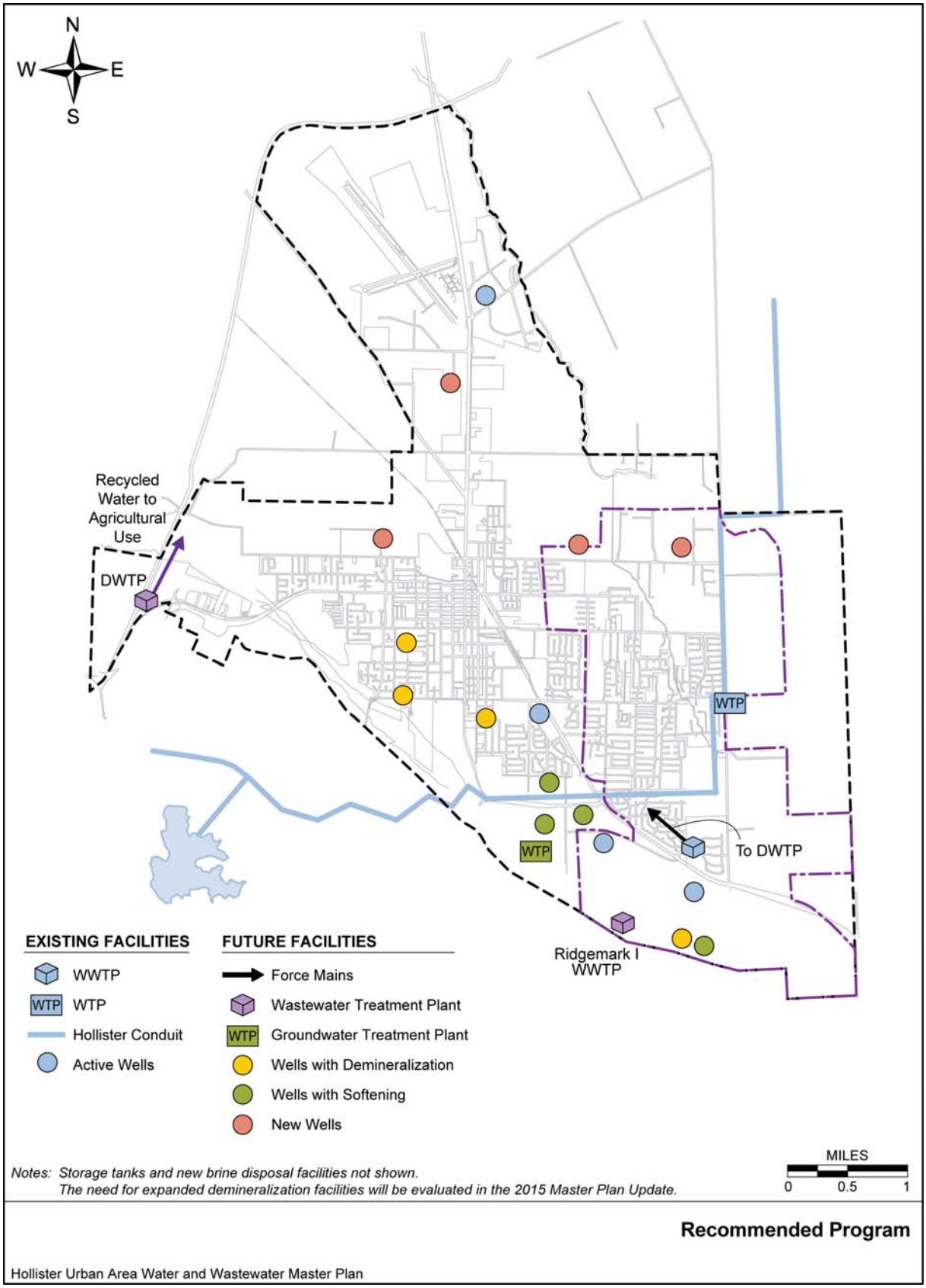


Figure 9-1: Recommended Program

The goals of the Master Plan are based upon the principles and objectives defined in the MOU. These objectives were refined through input received from the Governance and Management Committee members. The following goals were used in developing this Master Plan:

- Improve the municipal, industrial, and recycled water quality
- Increase the reliability of the water supply
- Coordinate infrastructure improvements for water and wastewater systems
- Implement goals of the Groundwater Management Plan
- Integrate the Long-term Wastewater Management Program
- Support economic growth and development consistent with the City of Hollister and San Benito County General Plans and Policies
- Consider regional issues and solutions

The integrated water and wastewater plan described in this Master Plan meets all of the principles and objectives defined by the MOU. The benefits of this integrated plan to the Hollister Urban Area are summarized in the following section.

9.1.3 Benefits of Integrated Plan

By providing an integrated approach to water resources management for the Hollister Urban Area, this Master Plan provides additional benefits and opportunities outside the Study Area. The major actions and benefits resulting from the integrated water resources plan are summarized in Figure 9-2.

Implementation of the recommended program improves M&I supply reliability by decreasing future dependency on imported CVP water which is subject to supply limitations due to both natural and administrative droughts. As described in Section 5.2, demineralization of groundwater provides benefits to both drinking water and recycled water users, while limiting demineralization and brine disposal operations to a single stream. Demineralization of local groundwater wells provides improved drinking water quality and results in significant consumer cost savings, while also resulting in improved recycled water quality and a reduction in the annual salt load entering the groundwater basin. The latter is consistent with the Groundwater Management Plan and supports the long-term viability of the groundwater basin.

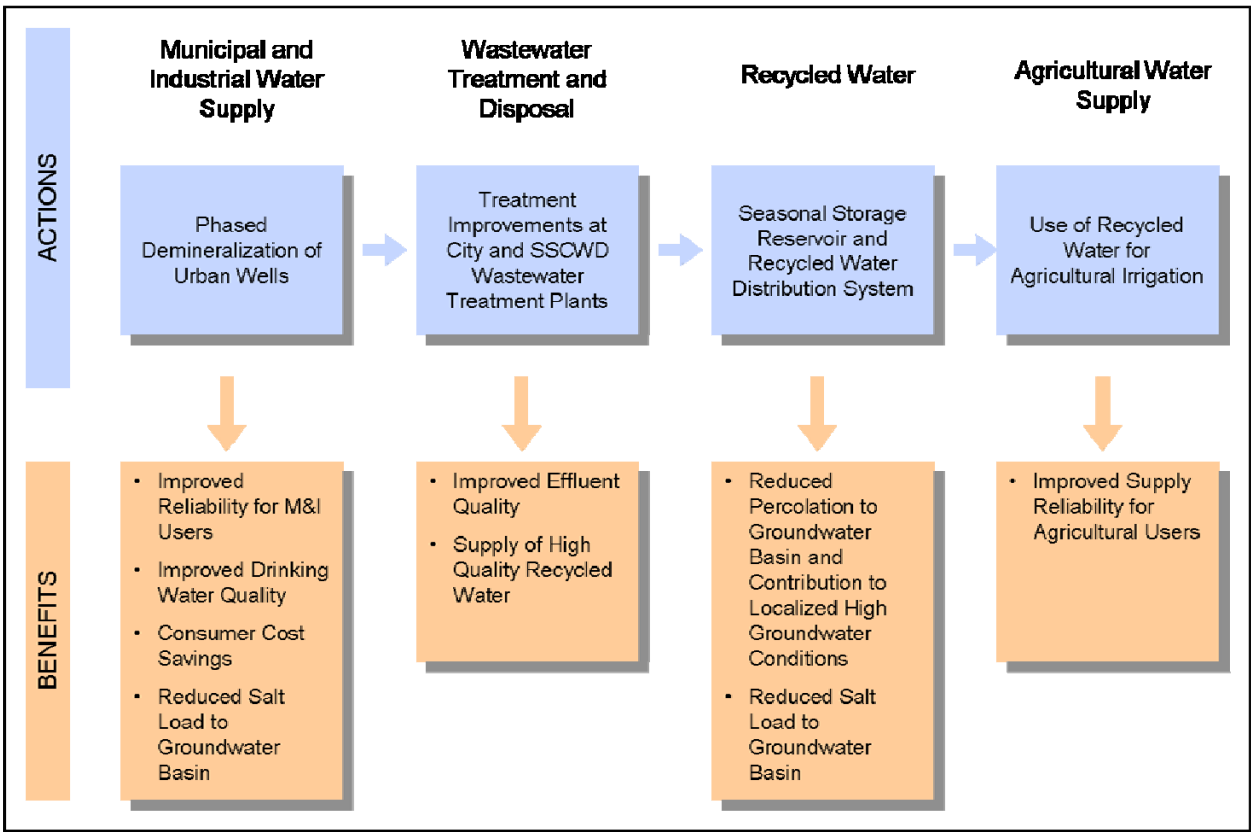


Figure 9-2. Major Actions and Benefits of Integrated Water Resources Plan

The treatment improvements at the City's DWTP and SSCWD's Ridgemark Wastewater Treatment Plant will provide improved effluent quality resulting in cost-effective effluent disposal through implementation of the recycled water program. Additionally, implementation of the recycled water program improves the reliability of water supply to agricultural users in San Benito County. Distribution of recycled water for agricultural purposes will also reduce percolation to the groundwater basin and contributions to localized high groundwater conditions in San Juan Valley.

A secondary benefit of the use of recycled water is that it could free up imported CVP supplies for other uses. This freed up CVP water could be used for future urban water needs or used as part of an exchange with regional partners in a comprehensive water management program.

9.1.4 Estimated Costs

Estimated costs for water and wastewater facilities are presented in Chapter 6 and in Appendix J. Total estimated capital costs (in 2008 dollars) for new facilities for Alternative 3B (Phased Demineralization of Urban Wells) are $133 million, as illustrated in Figure 9-3. Projects that

are currently under construction, estimated at $100 million, including the DWTP, Seasonal Storage Reservoir, Phase 1 Recycled Water Project and two new wells at SSCWD, are not included in the total estimated capital costs. Capital costs for potential future phases of demineralization are also not included; these could total up to $57 million.

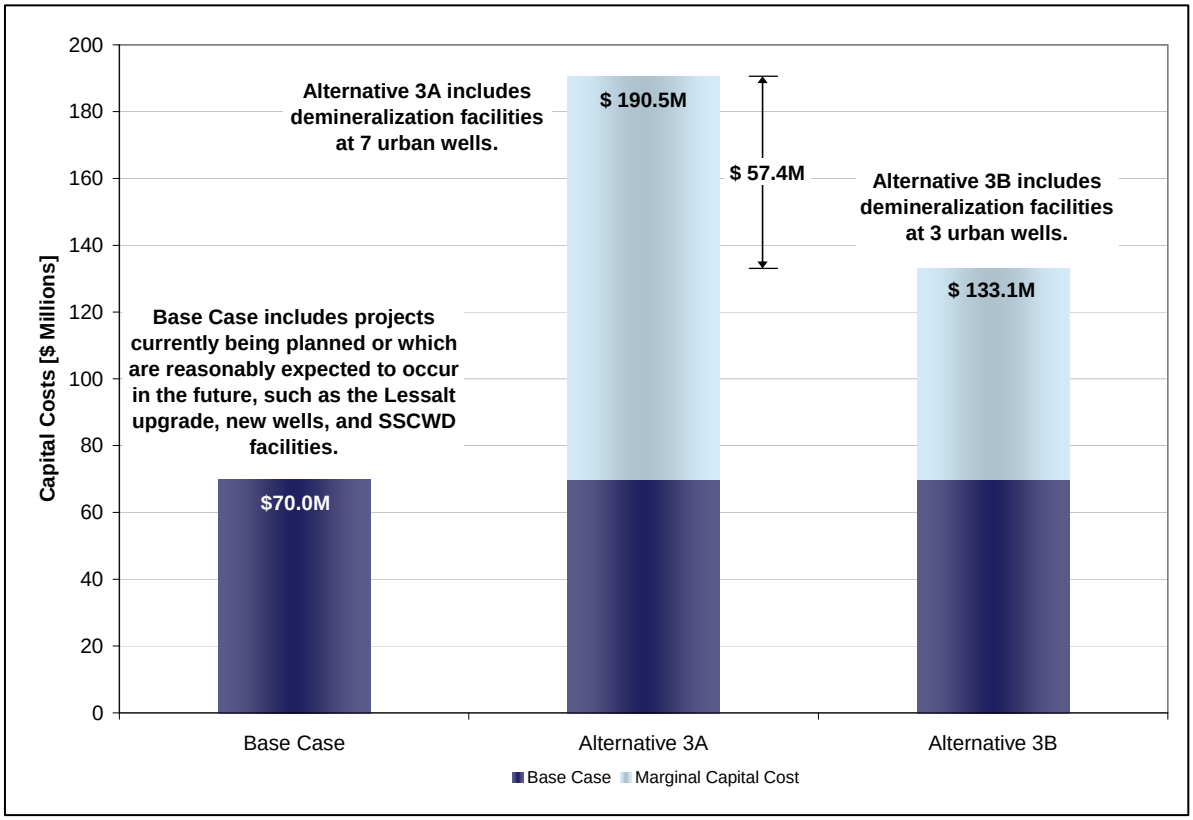


Figure 9-3. Capital Costs for Recommended Program

The total estimated capital cost includes $70 million for facilities included in the Base Case, as shown in Figure 9-3. As described in Chapter 5, Base Case projects are those which are currently being planned and projects which are reasonably expected to occur in the foreseeable future. Therefore, the marginal estimated capital cost for facilities included in Alternative 3B is $63 million.

9.1.5 Recommended Phasing

In order to comply with regulatory requirements, there are current projects underway which are scheduled to be complete by the end of 2008. These current projects include the City of Hollister DWTP, the Seasonal Storage Reservoir, and the Phase 1 Recycled Water Facilities. This Master Plan builds upon these current projects.

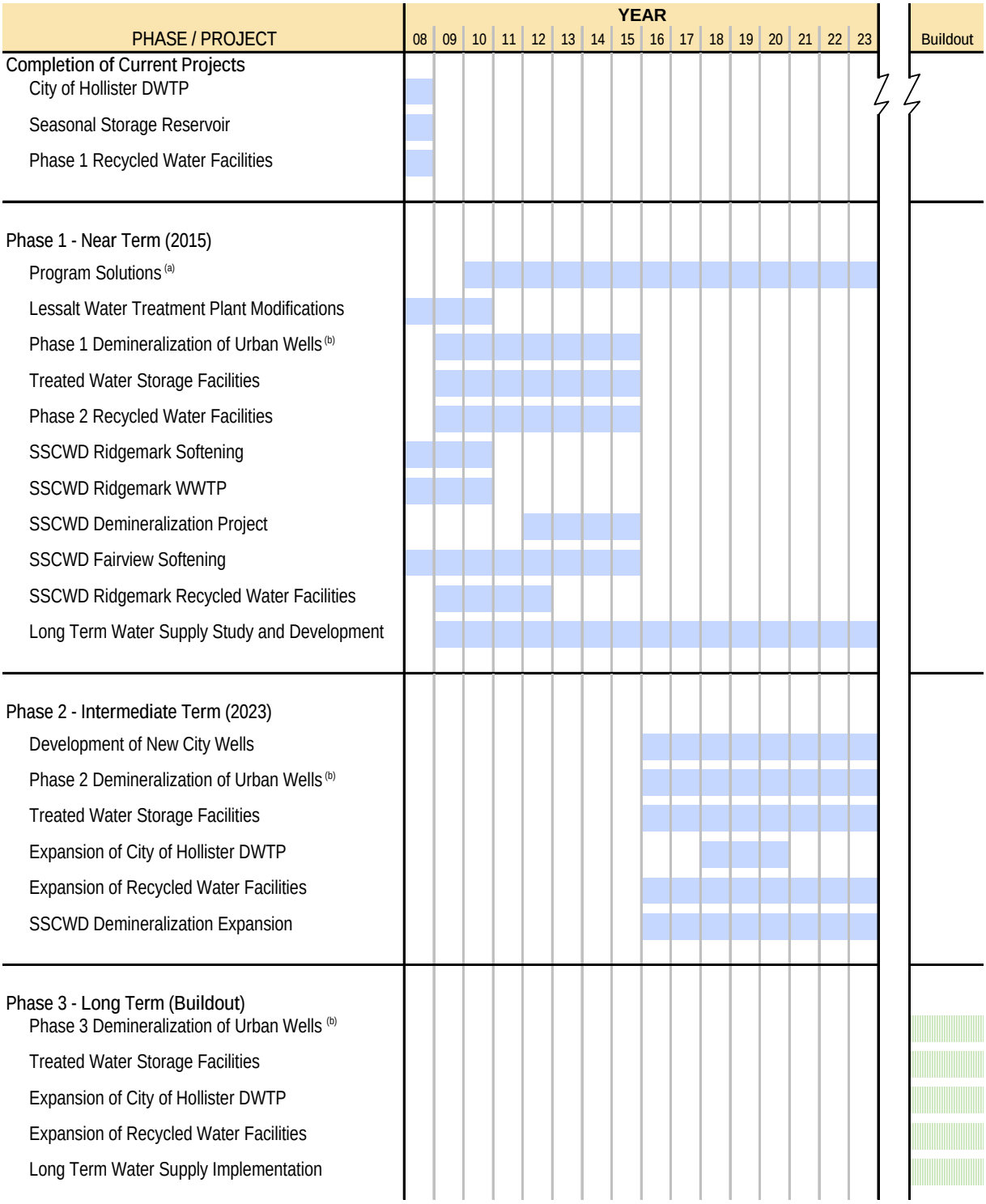
It is recommended that this Master Plan be implemented in three phases as follows:

- Phase 1 – Near Term (To 2015)
- Phase 2 – Intermediate Term (To 2023)
- Phase 3 – Long Term (After 2023)

The timing of these three phases and the major projects for each phase are presented in Figure 9-4.

The first phase (Phase 1) would extend to 2015. This is the date established in the MOU for implementation of a recycled water program meeting the water quality goals of the MOU. The program solutions would be implemented during Phase 1. Modifications and improvements to the Lessalt WTP would be completed by 2010 to allow this facility to produce 3.0 mgd and meet all current drinking water regulations. Additionally, SSCWD will implement a softening program in the Ridgemark area and upgrade the Ridgemark Wastewater Treatment Plant in order to be compliant with its regulatory requirements by 2010. The first phase of groundwater demineralization facilities would be completed, including demineralization at three City wells and one SSCWD well. SSCWD will also construct a softening plant in the Fairview pressure zone. The final elements of Phase 1 include construction of additional treated water storage facilities, the Phase 2A Recycled Water Facilities in the Wright Road / McCloskey corridor as identified in the Recycled Water Feasibility Study Update, and the SSCWD Ridgemark Recycled Water Facilities. In addition to these projects, Phase 1 includes on-going study and development of a long term water supply to meet the demands projected for buildout conditions.

Phase 2 would include the improvements required from 2015 to 2023, which is the end of the planning period for this Master Plan. During Phase 2, a second phase of demineralization facilities may be considered for implementation at City and SSCWD wells dependent on the development of drinking water demands in the HUA and the ability to optimize water quality distribution with only Phase 1 demineralization facilities coupled with distribution system improvements. Additional treated water storage facilities and the development of two new wells are required to meet projected growth in the HUA. Between 2018 and 2020, a 1.0 mgd expansion of the City of Hollister DWTP would also be completed by adding additional membrane capacity. Moreover, the RWQCB requires that the City of Hollister begin planning



Notes:

(a) Program solutions include water conservation, softener ordinance, salinity education, and dual distribution sytems for new development.

(b) Phase 1 Demineralization includes 3 City wells. Need for later phases will be determined based on demand and system optimization.

(c) Facilities implementation steps include facilities planning, predesign, CEQA compliance, permitting, final design, construction and startup.

Figure 9-4: Implementation Program Phasing

to expand the DWTP when flows reach 75 percent of design capacity. It is projected that this DWTP expansion planning would occur during the Phase 2 timeframe.

The final phase (Phase 3) would be to buildout. Future updates to this Master Plan will more precisely define the needs and timing of the facilities required after 2023. Expansion of the City DWTP and the recycled water facilities will be required and additional demineralization facilities may be necessary. However, as shown in Table 9-1, the most significant element for buildout conditions will be the implementation of a long-term water supply to meet projected demands for buildout conditions.

9.2 Benefit and Cost Allocation

Implementation of this Master Plan will result in the benefits described in Section 9.1.3. The purpose of this section is to present a preliminary benefit and cost allocation approach.

9.2.1 Benefit and Cost Allocation Methods

Benefit and cost allocation requires consideration and selection of the appropriate methodology. The fundamental issue for the recommended program in this Master Plan is the equitable distribution of costs for a multi-purpose program serving multiple agencies.

Table 9-2: Summary Comparison of Cost Allocation Methods

Cost Allocation Method	Advantages	Disadvantages
Methods Without Use of Benefits		
Split Joint Costs Equally Among Purposes	Relatively Easy to Implement	May Not Result in Feasible Solution Since Total Cost Allocation May Exceed Benefits
Joint Costs Allocated According to Share of Use	Suitable for Single Purpose Project	Not Possible When Multiple Users Have Different Measures of Use
Joint Costs Allocated to Share of Separable Costs	Relatively Easy to Implement	May Note Result in Feasible Solution Since Total Cost Allocation May Exceed Benefits
Methods With Use of Benefits		
Separable Costs Remaining Benefits (SCRB)	Generally Accepted Method Used by Federal Agencies; Long History	Requires Benefits Data and Estimated Costs for Projects with Alternative Sizing and Configuration; Multiple Iterations
Alternative Justifiable Expenditure	Useful If Alternative Projects Have Been Identified	May Not Reflect Cost That Each User Imposes on the Project
Share of Total Benefits	Relatively Easy to Implement	May Not Reflect Cost That Each User Imposes on the Project
Negotiated Cost Share	Combines SCRB Type Information and Institutional Arrangements	May Be Difficult to Justify Results to Ratepayers and Financing Sources

Some costs may be assigned solely to a single purpose or agency. These directly assignable costs are referred to as specific costs.

Other costs cannot be assigned to a single beneficiary because they serve multiple purposes or agencies. These costs are referred to as joint costs. There are a variety of methods for allocation of joint costs as shown in Table 9-2, which also summarizes the major advantages and disadvantages of these alternative methods. Each of these alternative methods was considered in developing an approach for use in this Master Plan.

9.2.2 Recommended Framework for Benefit and Cost Allocation

The recommended framework for use in allocating costs in this Master Plan is based upon a combination of the approaches in Table 9-2 and is presented in Figure 9-5. This approach utilizes both the Share of Use and Share of Benefits approaches for allocation of joint costs.

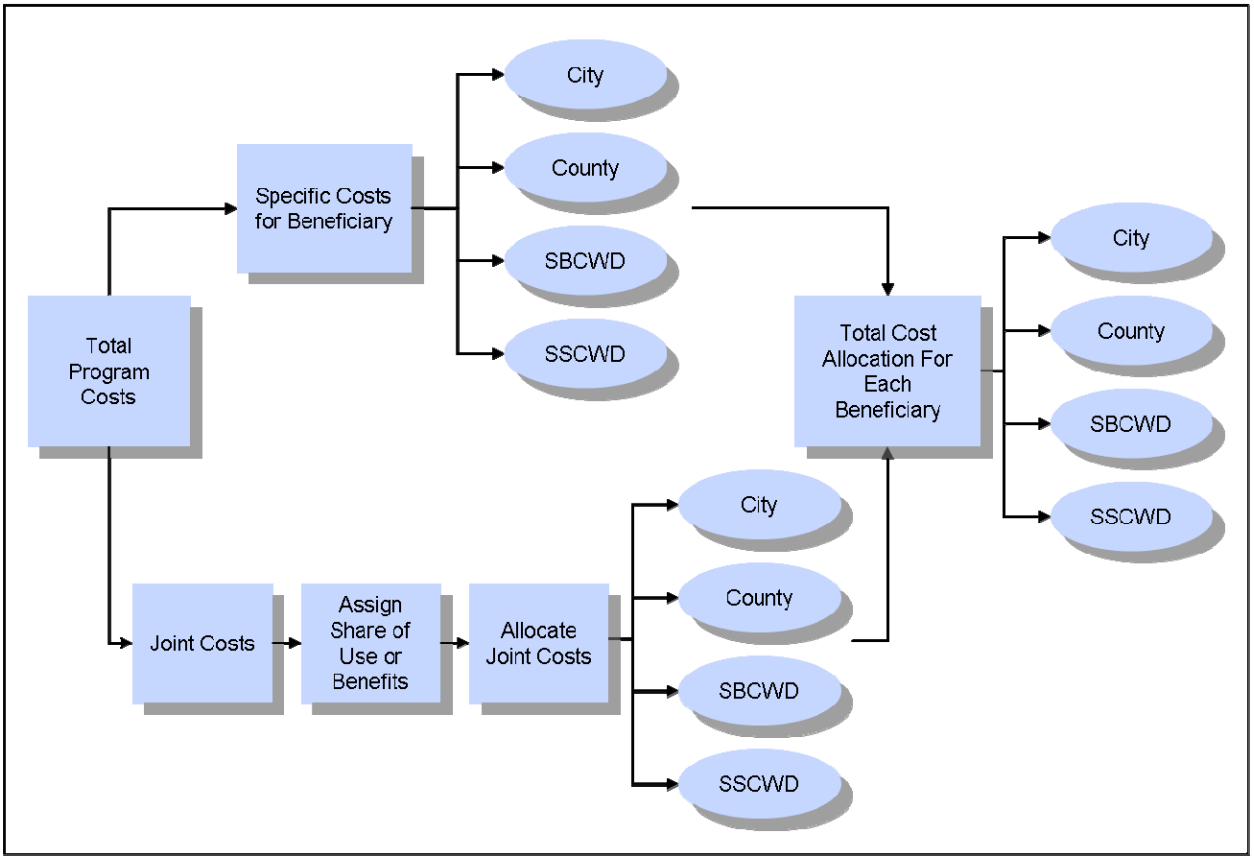


Figure 9-5: Framework for Cost Allocation

Table 9-3: Specific and Joint Costs

Project	Estimated Cost	Specific Costs				Joint Costs
		City	County	SBCWD	SSCWD	
Water Facilities						
New City Wells	1,730,000	1,730,000				
SSCWD New Well (2000 gpm)	800,000				800,000	
Lessalt WTP Upgrade Project	3,110,000					3,110,000
Demineralization	57,400,000					57,400,000
SSCWD Ridgemark Softening	4,520,000				4,520,000	
SSCWD Fairview Softening	11,650,000				11,650,000	
SSCWD Demineralization Project	10,000,000				10,000,000	
SSCWD Deep Well Injection	7,020,000				7,020,000	
Treated Water Storage	11,730,000					11,730,000
Subtotal	107,960,000	1,730,000			33,990,000	72,240,000
Wastewater Facilities						
DWTP Expansion (4 to 5 mgd)	1,000,000	1,000,000				
SSCWD Ridgemark WWTP	9,720,000				9,720,000	
Subtotal	10,720,000	1,000,000			9,720,000	
Recycled Water Facilities						
Phase 2A Recycled Water Project	10,455,000					10,455,000
SSCWD Ridgemark Recycled Water	3,940,000				3,940,000	
Subtotal	14,395,000				3,940,000	10,455,000
Total	133,075,000	2,730,000			47,650,000	82,695,000

9.2.2.1 Specific Costs

The first step in the cost allocation process shown in Figure 9-5, is to define the specific costs for each beneficiary. As previously described, specific costs are those costs which are attributed to only one beneficiary. Table 9-3 presents the specific costs associated with the recommended program. SSCWD projects have been allocated, as specific costs, to SSCWD. Additionally, the costs for new City wells and the DWTP expansion have been allocated to the City.

9.2.2.2 Joint Costs

As shown in Table 9-3, the remaining joint costs after assignment of the specific costs total $82,695,000. These are the joint costs which must be allocated among the MOU Parties.

Costs for the Lessalt WTP Upgrade Project and the Treated Water Storage may be allocated according to use by the City and SSCWD. Review of past agreements, historical and future usage, and additional modeling will be used to develop equitable sharing of these costs. For example, if the use of water from these facilities is equally divided, then the costs would be split 50 percent each to the City and SSCWD.

Allocation of joint costs for the groundwater demineralization at City wells and the recycled water facilities will be more complex. These two program elements total $67.86 million and serve multiple beneficiaries and it is recommended that the joint costs for these facilities be allocated in proportion to the share of benefits provided. An example of the application of the share of benefits methodology is provided in Table 9-4.

Table 9-4: Example Application of Share of Use Methodology for Allocation of Joint Costs

Beneficiary	Assigned Benefit ($ Millions)	Percent of Total Benefits (%)	Cost Allocation ($ Millions)
Beneficiary A	60	50	40
Beneficiary B	30	25	20
Beneficiary C	18	15	12
Beneficiary D	12	10	8
Totals	120	100	80

Note: The total valuation of all benefits is $120 million. The total estimated capital cost is $80 million.

9.2.3 Benefit Valuation and Assignment

In order to allocate joint costs among the MOU Parties, the program benefits must be defined, valued, and assigned.

The seven major program benefits were introduced and defined in Section 9.1.3. The valuation of benefits provides the basis for allocating costs among program beneficiaries. A benefit valuation methodology has been developed for each benefit and is described in Table 9-5. The three methodologies used to value program benefits include avoided cost, consumer cost savings and potential revenue.

In addition to assigning benefit valuations, the program benefits must be allocated to the beneficiaries. A preliminary assignment has been developed, as shown in Table 9-6; however, these assignments must be confirmed and quantified. The benefit allocation is the key component in the allocation of joint costs for groundwater demineralization and recycled water facilities. Therefore, it is expected that significant negotiations will be required to build consensus among the MOU Parties and finalize these benefit allocations.

Table 9-5: Benefit Valuation Methodology for Major Program Benefits

Benefit	Valuation Method
Water Supply	
Improved Supply Reliability for M&I Users	Avoided cost of developing alternative supply such as purchase and delivery of additional CVP supply.
Improved Supply Reliability for Agricultural Users	Avoided cost of developing alternative supply such as purchase and delivery of additional CVP supply.
Drinking Water Quality	
Improved Drinking Water Quality and Consumer Cost Savings	Drinking water quality currently meets all primary drinking water standards. Improvements would reduce TDS (secondary standard) and hardness (no established standard) levels. Cost savings would be from elimination of home softeners, extended useful life of home plumbing and appliances, and reduced consumption of detergents and bottled water.
Reduced Salt Load to Groundwater Basin	Contributes to implementation of Groundwater Management Plan and long-term viability of groundwater basin to provide water supply and support the economy of San Benito County.
Effluent Disposal from Wastewater Treatment	
Improved Effluent Quality and Cost Effective Effluent Disposal	Upgraded treatment meets requirements of WDR orders for City and SSCWD. Benefit to be valued as the avoided cost of alternative method of effluent disposal such as additional spray fields or seasonal surface water discharge.
Reduced Percolation to Groundwater Basin and Contribution to Localized High Groundwater Conditions	Primary benefit to San Juan Valley and avoidance of damage to agricultural crops.
Supply of High Quality Recycled Water	Revenue from sale of high quality recycled water.

Table 9-6: Preliminary Benefit Assignment

Benefit	City	County	SBCWD	SSCWD
Water Supply				
Improved Supply Reliability for M&I Users	X	X		X
Improved Supply Reliability for Agricultural Users			X	
Drinking Water Quality				
Improved Drinking Water Quality and Consumer Cost Savings	X	X		X
Reduced Salt Load to Groundwater Basin	X	X	X	X
Effluent Disposal from Wastewater Treatment				
Improved Effluent Quality and Cost Effective Effluent Disposal	X	X		X
Reduced Percolation to Groundwater Basin and Contribution to Localized High Groundwater Conditions	X	X	X	
Supply of High Quality Recycled Water			X	X

9.2.4 Allocation of Sunk Costs

In addition to the program costs presented in Table 9-3, there are existing sunk costs which must be included in the benefit and cost allocation. Specifically, the City has financed the construction of the Phase 1 Recycled Water Facilities which contributes to improved reliability for agricultural users, supply of high quality recycled water and reduced percolation to the groundwater basin. The total estimated capital cost for the Phase 1 disposal facilities, including design and construction of the conveyance and irrigation systems at both the airport and Brigantino site, is approximately $18.1 million. This capital cost does not include the purchase of the Brigantino property, which is estimated to be an additional $5 million. It should be noted that SBCWD agreed to pay for the cost of over-sizing a section of the Phase 1 recycled water transmission pipeline to the airport site, such that the pipe would be properly sized for Phase 2 recycled water use. SBCWD agreed to pay approximately $830,000 for over-sizing the Phase 1 facility.

9.2.5 Summary

As shown in Figure 9-5, the specific costs and allocated share of joint costs are added to develop the total cost allocation for each of the MOU Parties. It is important to differentiate between cost allocation and cost sharing. While cost allocation distributes the cost of the program, it does not represent what each MOU Party may ultimately pay. The benefit and cost allocation framework in Figure 9-5 will serve as a starting point for negotiations between the MOU Parties. Prior agreements, institutional considerations, and other factors will need to be addressed during the negotiations.

The discussion in this section focuses on capital costs. During negotiations, O&M costs, O&M responsibility, and ownership issues should also be included in the overall process.

9.3 Institutional Arrangements

The institutional arrangements established for completion of this Master Plan were defined in the MOU. The MOU also presented an initial framework for implementation of the Master Plan. However, as recognized in the MOU, the results of the Master Plan and the implementation of its recommendations will require modified and/or new institutional arrangements.

9.3.1 Roles and Responsibilities

The MOU specifies the following roles and responsibilities.

Article 2.2.4 - Within the Hollister Urban Area all wastewater shall be treated at a central wastewater treatment plant and implementing Ordinances/Regulations shall be consistent with that requirement. This provision shall not preclude satellite wastewater separation plants for the recovery of water for local recycling or the upgrading of the SSCWD Ridgemark Estates Wastewater Treatment Plants for local recycling.

Article 2.2.6 - Urban water supply including the treatment of surface and groundwater for wholesale delivery shall be the responsibility of the San Benito County Water District. Continued, managed use of groundwater is necessary to protect portions of the Hollister Urban Area including the City of Hollister Industrial and Domestic Wastewater Treatment Plants and areas susceptible to liquefaction from the adverse impacts of high groundwater. To achieve this continued and managed use of groundwater, groundwater supplies from the existing City of Hollister wells will be made available to SBCWD for water supply purposes only if the City of Hollister consents and agrees to specific terms and conditions for that use. To achieve this continued and managed use of groundwater, groundwater supplies from the existing SSCWD wells will be made available to SBCWD for water supply purposes only if SSCWD consents and agrees to specific terms and conditions for that use.

Article 2.2.7 - Centralized wastewater treatment including specialized treatment, as required to produce reclaimed water for agricultural purposes and disposal by means other than reclamation shall be the responsibility of the City of Hollister.

Article 2.2.8 - Marketing and distribution of recycled water outside the city limits of Hollister and outside the Sphere of Influence of SSCWD shall be the responsibility of SBCWD. Marketing and distribution of recycled water for M&I use inside the Sphere of Influence of SSCWD shall be the responsibility of SSCWD. The marketing and distribution of recycled water for agricultural use inside the Sphere of Influence of SSCWD shall be the responsibility of SBCWD.

9.3.2 Framework for Implementation

Implementation of the extensive program and numerous facilities defined by this Master Plan will be challenging and will require the development of numerous institutional arrangements.

Technical, financial, and legal evaluations will be required to determine the range of institutional arrangements required for implementation.

An example framework for implementation of the Phase 2A Recycled Water Program is presented in Figure 9-6. This example utilizes contractual arrangements among the various parties. Other institutional models, such as creating a new regional agency (e.g. Regional Water Authority), should also be evaluated.

Development, evaluation, and implementation of the necessary institutional arrangements will be complex and require extensive time to complete. To continue with the immediate next steps for Master Plan implementation, the MOU Parties should build on the MOU described in the previous subsections.

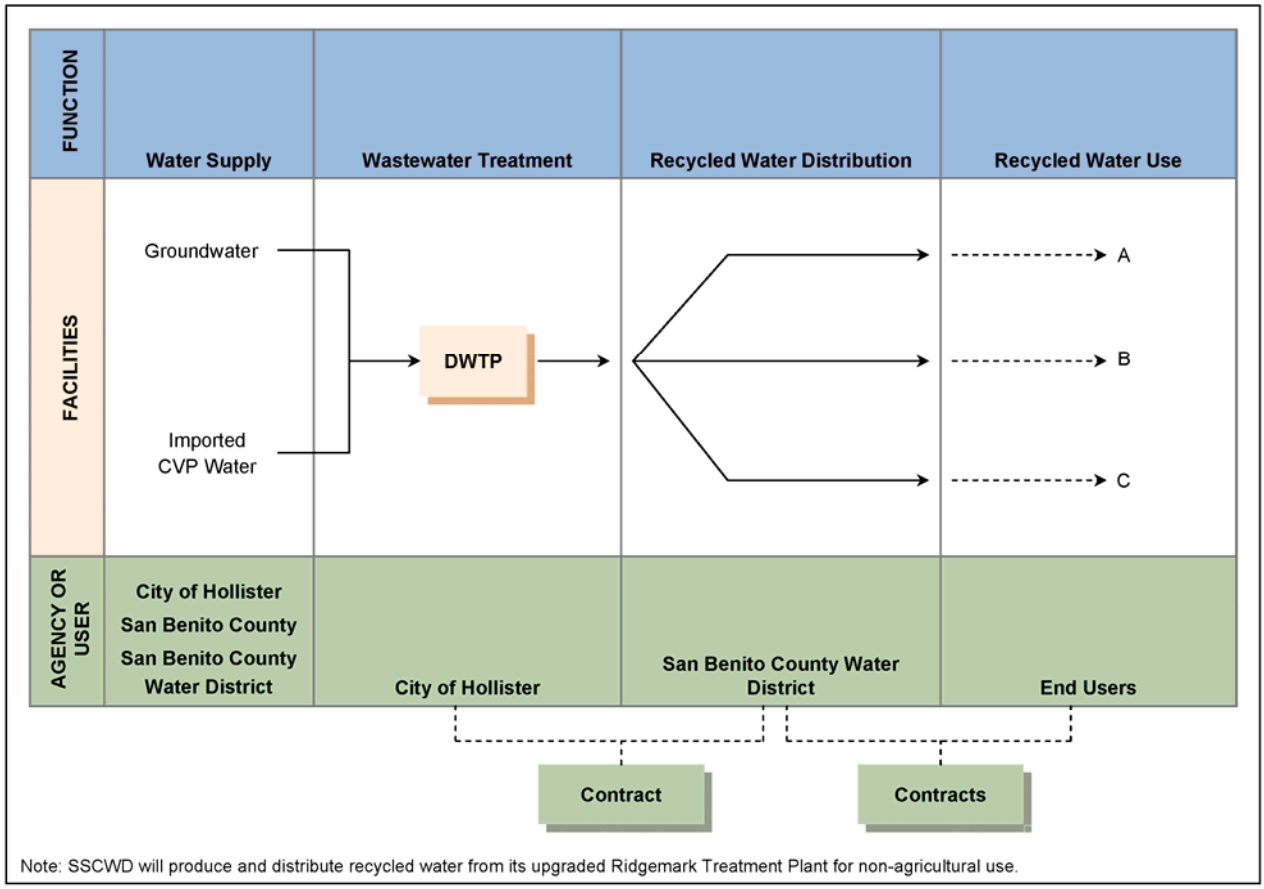


Figure 9-6: Example Institutional Framework for Recycled Water Implementation

9.3.3 Amendment to MOU

The most expeditious way to proceed with the recommended next steps for the implementation of this Master Plan would be to develop an amendment to the MOU in accordance with Article 13. This amendment would provide the basis for completing the necessary benefit and cost allocation, engineering, environmental compliance, permitting, financing, and stakeholder outreach. For example, the first amendment could provide a new cost sharing formula for completing the benefit and cost allocation, and identify the MOU Member responsible for leading the effort.

9.4 Engineering

The technical work completed for this Master Plan provides a framework for water and wastewater facilities required through the year 2023. The recommended facilities and timing are described in detail in Chapters 7 and 8, and in Figures 9-1 and 9-4. The preliminary location of new water and wastewater facilities are shown in Exhibits II and III, respectively. These locations and pipeline alignments are preliminary and final locations will be determined during facilities planning and predesign work.

The next step in implementation will be to conduct facilities planning for the recommended program. The objective of facilities planning will be to refine costs, support the benefit and cost allocation process, conduct additional distribution system modeling, evaluate the advantages and disadvantages of wellhead versus centralized demineralization and additional brine disposal alternatives. Following facilities planning, predesign studies will be initiated. The purpose of the predesign studies is to evaluate the sizing, location, operational requirements, and related issues in greater detail. The City's DWTP project has already been defined in previously completed studies and a facilities planning study for the Phase 2A Recycled Water Project is in progress. Additionally, SSCWD has initiated engineering studies for its wastewater treatment plant and recycled water project.

As noted on Figure 9-3, engineering work would include facilities planning, predesign, design, construction management, and startup. Many of the proposed improvements will be phased and the engineering work would be scheduled accordingly. The delivery method for new facilities will also be evaluated. For example, design/build should be evaluated for some facilities as a method to expedite project completion. Construction contract packaging should also be evaluated to provide the greatest opportunities for competitive bidding by contractors.

9.5 Environmental Compliance

The recommended facilities will require environmental compliance with the California Environmental Quality Act (CEQA) to evaluate the environmental impacts of the projects. The required environmental compliance documents should be completed in conjunction with the engineering predesign studies.

9.6 Permitting

Numerous federal, state, and local permits will also be required for project implementation. The required permits will be identified during the preparation of the engineering predesign studies and environmental compliance documents. A permitting strategy should be developed to minimize project delays and potential mitigation costs. This permitting strategy should be developed as one of the immediate next steps in the implementation of this Master Plan.

9.7 Coordination with Ongoing Projects and Programs

Implementation of this Master Plan should be coordinated with other ongoing programs. Program coordination will provide opportunities for optimizing facilities sizing and reducing overall costs. Coordination of activities may also assist in identifying regional benefits and partnerships for cost sharing. Some of the major ongoing programs for coordination include the following:

- City of Hollister Long-term Wastewater Management Plan
- SSCWD Long-term Wastewater Management Plan
- Recycled Water Program
- Pajaro Watershed Groundwater Desalination Feasibility Study
- Pajaro River Watershed Integrated Regional Water Management Program

Other projects in progress by the MOU Parties should also be monitored to investigate opportunities for facilities optimization and cost savings. For example, SSCWD is currently studying deep well injection for disposal of brine from its demineralization facilities. If this disposal method proves to be feasible and cost effective, the City may want to partner with SSCWD rather than use more traditional, land and capital intensive, brine disposal methods.

9.8 Stakeholder Outreach

Stakeholder outreach was an integral part of the development of this Master Plan. Continued successful implementation of the Master Plan recommendations will require a proactive approach to the various interest groups and stakeholders in the Hollister Urban Area. Some of the key stakeholders that must be included in this program are as follows:

- General public
- Local interest groups (business, environmental, and others)
- Agricultural interests (for marketing of recycled water)
- Regulatory agencies
- City, County, SBCWD, SSCWD, elected officials, and staff
- Regional interests outside San Benito County

A first step in developing a responsive stakeholder outreach program would be to update the Communications Plan developed for the completion of this Master Plan.

9.9 Financing

9.9.1 Estimated Program Costs

The estimated capital costs through the year 2023 are presented in Table 9-7. The costs in this table are organized by phase and project type. As described in Chapter 4, all costs are based on 2008 dollars. Estimated costs for water and wastewater facilities are presented in Chapter 6 and in Appendix J.

9.9.2 Internal Funding Opportunities

The MOU Parties will be responsible for their respective portion of the infrastructure projects in the recommended program as well as the cost of operating the systems. It is likely that a combination of revenue sources will be required to pay back capital obligations and meet operational expenses. All internal funding sources such as rate structure changes, water and wastewater fees, connection fees or property tax adjustments are ultimately derived from customers or users.

Each of the MOU Parties should update their financial and rate studies to reflect the projects identified in this Master Plan and the results of the benefit and cost allocation.

Table 9-7: Estimated Capital Costs

Project	Estimated Capital Cost ($)		
	Phase 1 (2015)	Phase 2 (2023)	Total
Water Facilities			
New Wells		1,730,000	1,730,000
SSCWD New Well (2000 gpm)	800,000		800,000
Lessalt Upgrade Project	3,110,000		3,110,000
Demineralization	57,400,000		57,400,000
SSCWD Softening at Well #8	4,520,000		4,520,000
SSCWD Softening Plant	11,650,000		11,650,000
SSCWD Demineralization Project	10,000,000		10,000,000
SSCWD Deep Well Injection	7,020,000		7,020,000
Treated Water Storage	6,400,000	5,330,000	11,730,000
Subtotal	100,900,000	7,060,000	107,960,000
Wastewater Facilities			
DWTP Expansion (4 to 5 mgd)		1,000,000	1,000,000
SSCWD Ridgemark WWTP	9,720,000		9,720,000
Subtotal	9,720,000	1,000,000	10,720,000
Recycled Water Facilities			
Phase 2A Recycled Water Project	10,455,000		10,455,000
SSCWD Ridgemark Recycled Water	3,940,000		3,940,000
Subtotal	14,395,000		14,395,000
Total	125,015,000	8,060,000	133,075,000

Note: The costs in this table do not include water distribution pipelines and wastewater collection pipelines, or the costs associated with projects currently underway, including the DWTP, Phase 1 Recycled Water Project, the Seasonal Storage Reservoir and two new wells in SSCWD. Demineralization costs only include Phase 1 Demineralization. The need for expanded demineralization facilities will be evaluated in the 2015 Master Plan Update.

9.9.3 State / Federal Funding Opportunities

In addition to local financing options, grants and loans can be pursued for the required improvements. There are many federal and state water, wastewater and recycled water infrastructure funding programs. California, a national leader in terms of size and volume of statewide funding programs, derives a great portion of grant funds from voter-approved specific allocation statewide general obligation bond issues. The water, wastewater and recycled water infrastructure funding sources which may be suitable for projects within the recommended program are listed below. For a complete description of each funding source and the projects for which it may be applicable, as well as funding limits, terms and contact information, see Appendix K.

- Proposed State Water Bond Fund
- Infrastructure State Revolving Fund Program

- Safe Drinking Water State Revolving Fund
- Local Water Supply Construction (Proposition 82)
- Clean Water State Revolving Fund
- Water Recycling Construction Program
- Water Recycling State Revolving Fund

In order to maximize the potential funding available through the loans and grants listed above, a funding implementation strategy should be developed which considers the sequence and schedule for the Hollister Urban Area projects coincident with the availability of funds and their respective timeframes, funding limits and interest rates (for loans). Once a prioritized list of funding mechanisms is prepared, the next steps for obtaining the individual loans and/or grants to fund these projects would be to submit pre-applications for each program. It is recommended that the MOU Parties work together on the development of the funding implementation strategy and, where applicable, apply for loans/grants jointly.

9.10 Use of Master Plan Processes and Tools

The MOU Parties have invested substantial resources to the completion of this Master Plan. The processes and tools developed as part of this work should be utilized in the future evaluation of proposed new developments, proposed land use changes, refinements to the recommended facilities, and potential regional projects and programs. Some of the processes and tools to be utilized include the following:

- Process and criteria established for evaluation of alternatives
- Economic analyses including the potential for consumer cost savings from improved water quality
- Water distribution system model for the City of Hollister and SSCWD water systems
- Groundwater model developed previously and used in this planning work
- Fact sheets developed to assist with the public information and education programs

It is also recommended that this Master Plan be updated prior to 2015. The update to the Master Plan in this timeframe will be able to adjust the recommendations for facilities and timing based upon actual growth rates, progress made in program implementation, and potential new issues and opportunities. The 2015 update should specifically address the need to expand demineralization facilities and long-term water supply options.

9.11 Recommended Implementation Schedule and Next Steps

Implementation of this Master Plan will require overall program and individual facilities activities. Current projects shown in Figure 9-3 are already under construction or in predesign or design. The next major facilities would be implemented as part of Phase 1 through 2015. Figure 9-7 illustrates the recommended implementation schedule and the steps required to ensure timely completion of the Phase 1 facilities.

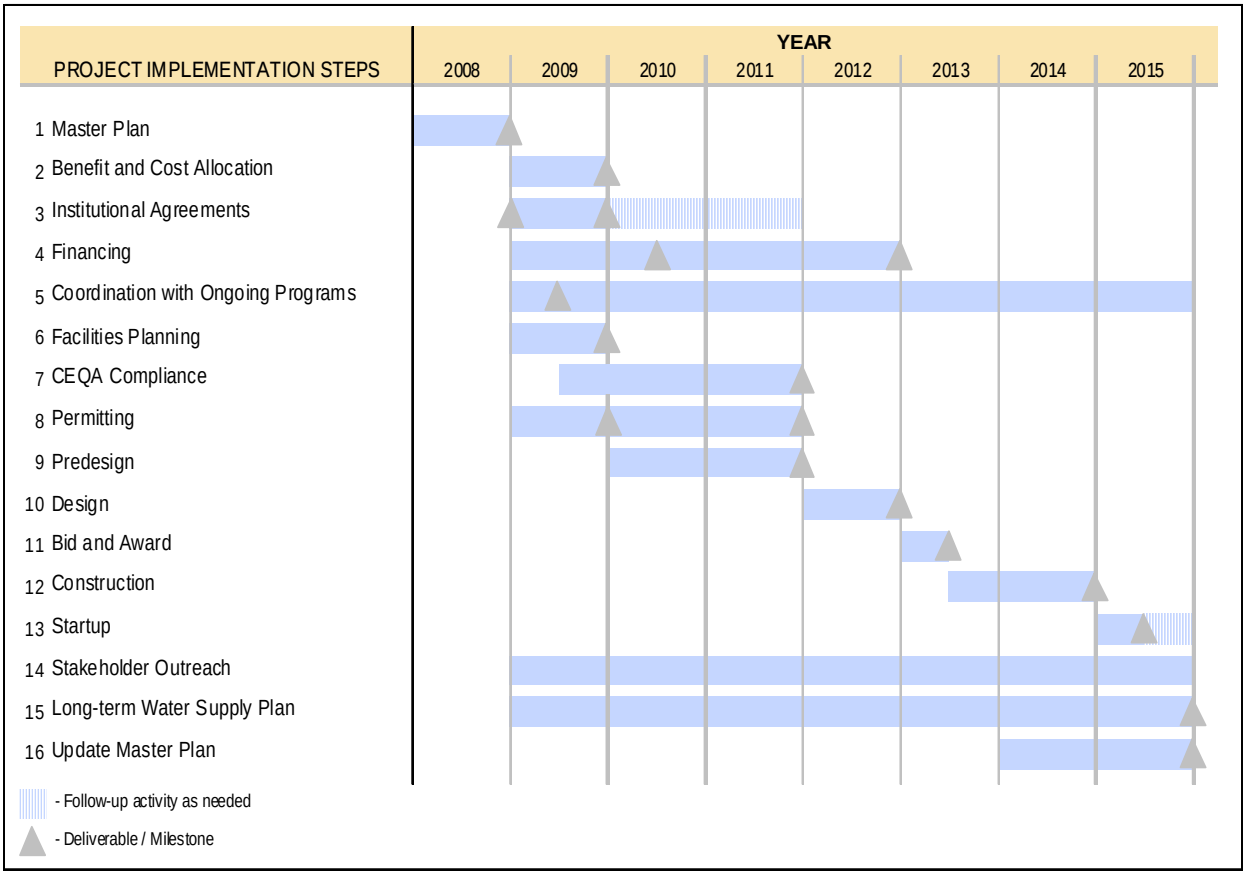


Figure 9-7: Implementation Schedule through 2015

The recommended next steps are the critical actions for implementation of this Master Plan, which include the following:

- **Benefit and Cost Allocation**

  The program costs associated with the implementation of this Master Plan should be shared among the MOU Parties according to the level of benefit each party receives. In many cases, program costs cannot be assigned to a single beneficiary, because they serve multiple users or purposes. Therefore, a framework for benefit and cost allocation has been developed. The cost allocation should be initiated immediately following the

completion of this Master Plan to ensure that implementation of the program stays on schedule. The effort will require the cooperation of each MOU Party and should result in a table identifying each program element, its total cost and the cost allocated to each MOU Party. The cost allocation should be completed by the end of 2009.

- **Institutional Agreements**

  The most expeditious way to proceed with the recommended next steps for implementation of this Master Plan would be to develop an amendment to the MOU in accordance with Article 13. The MOU should be amended in two steps.

  The first step would be to provide the basis for completing the initial implementation steps, including the benefit and cost allocation, initial financing strategy, facilities planning, and stakeholder outreach. This amendment will be required immediately following completion of this Master Plan.

  The second amendment would address engineering, environmental compliance, permitting, and continued financing and stakeholder outreach for the facilities to be constructed by 2015. This amendment should be finalized immediately following the completion of the benefit and cost allocation by the end of 2009.

  Finally, a third amendment could be prepared to address the responsibilities for ownership and operation of the facilities to be constructed by 2015. However, alternative institutional agreements should also be evaluated as part of this process.

- **Financing**

  A list of potential grants and loans was presented in Section 9.9. A funding implementation strategy should be developed to prioritize those grants and loans based on their respective timeframes, funding limits and interest rates. The prioritization of grants and loans should begin immediately upon completion of this Master Plan to facilitate timely submission of applications. It is recommended that the MOU Parties work together on the development of the funding implementation strategy and, where applicable, apply for loans/grants jointly. Finally, each of the MOU Parties should update their financial and rate studies to reflect the projects identified in this Master Plan.

- **Coordination with Ongoing Programs**

  There are a number of ongoing projects and programs which are integral parts of the recommended program. A comprehensive program schedule should be developed which

identifies the linkages between programs and the critical path tasks. This overall program schedule should be prepared by mid-2009 and then monitored and updated on a monthly basis by a single implementation program manager. All MOU Parties should provide input to the overall program schedule development and regular updates.

- **Engineering**

The recommended facilities described in this Master Plan are based upon preliminary sizing, locations, and operational scenarios. Facilities planning is required to refine cost estimates, support the benefit and cost allocation, conduct additional distribution system modeling to optimize piping and evaluate operational scenarios, evaluate the advantages and disadvantages of wellhead demineralization versus centralized demineralization and consider additional brine disposal alternatives. The facilities plan should be completed by 2010 and include details regarding Phase 1 demineralization of urban wells, the treated water storage reservoirs, and the Phase 2 recycled water facilities. Due to the interconnectedness of the water distribution system, the facilities plan should also include the SSCWD softening projects.

Following completion of the facilities plan, predesign and final design of the facilities would be completed. The responsible parties for these efforts should be identified in the institutional agreements, as described above. Final design should be complete by 2013.

- **CEQA Compliance**

CEQA compliance has been completed for the City and County General Plans, the Groundwater Management Plan Update, and the City of Hollister DWTP improvements. The degree to which that CEQA coverage applies to the Master Plan must be confirmed. If additional CEQA compliance is needed for the Master Plan, it could be accomplished through a programmatic EIR or as part of EIRs for the individual facilities improvements. Since the Lessalt WTP was completed for water quality purposes, additional CEQA coverage may be necessary for the currently proposed plan.

The project EIRs for each facility, respectively, should be prepared in conjunction with the predesign task, such that they are completed by 2012.

- **Permitting Strategy**

Numerous federal, state, and local permits will be required for implementation of the recommended facilities. It is recommended that a comprehensive permitting strategy be developed to minimize potential delays and mitigation costs. This strategy should

include early contacts with critical regulatory agencies to define permitting needs and should be completed by the end of 2009. Following that, permitting should be conducted during the predesign task, so that all permits have been obtained by 2012.

- **Stakeholder Outreach**

  Stakeholder outreach has been an important component of developing this Master Plan. Fact sheets and public workshops were utilized to educate the public and obtain input. Similar activities should be used during program implementation to provide public education on critical items (i.e. water softener ordinance, salinity education, and water recycling) and to maintain public support for the program.

- **Long-term Water Supply Plan**

  As indicated in previous sections of this chapter, substantial additional water supplies will be required for the Study Area at buildout conditions. Due to the time required to develop new water supplies in California, preliminary work should be initiated to investigate the identified options. To preserve flexibility it may be necessary to secure water rights, begin negotiations with regional partners, and purchase property. All MOU Parties should participate in this process. The long-term water supply plan should be documented in conjunction with the 2015 Master Plan Update.

- **Update Master Plan**

  This Master Plan should be updated prior to 2015 to adjust the recommendations for facilities and timing based on actual growth rates, progress made in program implementation, and potential new issues and opportunities. The MOU Parties should each participate in the Master Plan Update.

EXHIBIT 7.2

APPENDIX E OF THE MASTER PLAN

TECHNICAL MEMORANDUM ON DEMINERALIZATION

HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN

APPENDIX E - DEMINERALIZATION ALTERNATIVE ANALYSIS

Introduction

The purpose of the demineralization alternative analysis is to determine whether demineralization should be provided for the water supply, recycled water, or both. Selection of the recommended demineralization strategy will be based on the lowest overall life cycle cost. The objectives of this technical memorandum (TM) are as follows:

- Summarize the basis for alternative development.
- Describe candidate demineralization alternatives.
- Present the estimated capital costs, annual operations and maintenance (O&M), distribution, and avoided consumer costs.
- Summarize the economic analysis results.
- Recommend a preferred demineralization strategy.

Basis for Alternative Development

The following assumptions were made in developing and comparing the candidate demineralization alternatives:

- **Drinking Water Quality Objectives**
  - Total dissolved solids (TDS) concentration of 500 mg/L and a hardness of not greater than 120 mg/L (measured as calcium carbonate). These objectives shall be met as soon as practical and no later than 2015.
  - Objectives can be achieved by blending treated surface water, groundwater, and/or demineralized groundwater within the distribution system.
- **Recycled Water Quality Objectives**
  - Target TDS concentration of 500 mg/L and shall not exceed 700 mg/L. This objective shall be met first by rigorous source control and second by demineralization.
  - Objectives can be achieved by blending treated effluent and demineralized treated effluent.

- **TDS Removal and Disposal Technologies**
  - TDS removal shall be accomplished by reverse osmosis.
  - For this alternative analysis, it is assumed that brine disposal shall be accomplished via brine concentration followed by evaporation ponds.
- **Water Demands:** Water demands are equal to the arithmetic average of the demands projected for lower and higher levels of conservation (See Appendix A).
- **Surface Water (CVP) Supply:** Surface water supply was assumed to be equal to 3,360 acre-ft per year for current and all future conditions.
- **Groundwater Quality:** A summary of the 2005 groundwater quality for the City of Hollister's eight wells is presented in Table 1. As shown, TDS levels range between a low of 136 mg/L and a high of 1,375 mg/L. The overall flow weighted average TDS concentration is approximately 850 mg TDS/L.

  City of Hollister (COH) Well #1 has been off-line for more than one year due to poor water quality (e.g., high nitrate). In addition Cullum Wells #1 and #2 are located outside of the master plan study area. Without these three wells, the overall flow weighted average TDS concentration is approximately 875 mg TDS/L. Considering the location of the Cullum Wells and COH #1 water quality issue, a value of 875 mg TDS/L will be used as the basis for estimating groundwater demineralization capacity requirements in conjunction with the projected water demands, water quality goals, and surface water supply criteria.

Table 1. Summary of 2005 Groundwater Quantity and TDS Data.

Well	Estimated Production (MG)	TDS Concentrations (mg/L)		
		Minimum	Maximum	Average
COH #1	0.86	1,264	1,375	1,302
COH #2	219.55	905	1,020	968
COH #3	77.85	660	840	751
COH #4	371.84	795	940	882
COH #5	296.55	795	905	862
COH #6	49.60	618	740	677
Cullum Well #1 and #2	39.51	136	224	190
Sum[a]	1,055.8	Flow Proportioned Average[a]		849
Sum [b]	1,015.4	Flow Proportioned Average[b]		874

[a] Includes all eight wells listed in Table 1.
[b] Sum and flow proportioned average without COH #1 and Cullum Wells.

- **Commercial and Residential TDS Contributions:** The calculated TDS increase from municipal and residential sources is 525 mg/L based on 2004 drinking water and influent wastewater characteristics. This value is considerably higher than the typical range of 150 to 380 mg TDS/L attributed to domestic water use and is likely from home and commercial ion exchange softening units that are estimated to be used by half of the utility's customers.[1] Results described later in this TM are based on the following estimated TDS increases from municipal and residential sources:
  - A TDS increase of 250 mg/L is assumed for the two alternatives that meet the drinking water TDS and hardness goals described in the MOU (i.e., Alternatives 1 and 2 described later in this TM).
  - A TDS increase of 525 mg/L is assumed for the alternative that does not meet the drinking water TDS and hardness goals (i.e., Alternative 3 described later in this TM).
- **Present Worth Analysis**
  - Costs to be based on 2006 dollars.
  - Discount rate of 3 percent.
  - 20 year analysis period.

Candidate Demineralization Alternatives

The following three candidate demineralization alternatives were considered. A copy of the calculations developed for estimating groundwater and recycled water demineralization requirements is provided in Appendix B.

Alternative 1. Groundwater Supply Demineralization

Figure 1 illustrates a proposed groundwater demineralization strategy to achieve both the drinking and recycled water quality goals. The overall quantity of groundwater requiring demineralization is dictated by the recycled water quality goal.

[1] Range obtained from Wastewater Engineering; Treatment and Disposal, Metcalf & Eddy, 2003 and confirmed with data developed for the Stockton Pollution Prevention Plan Implementation (HDR, 2005).

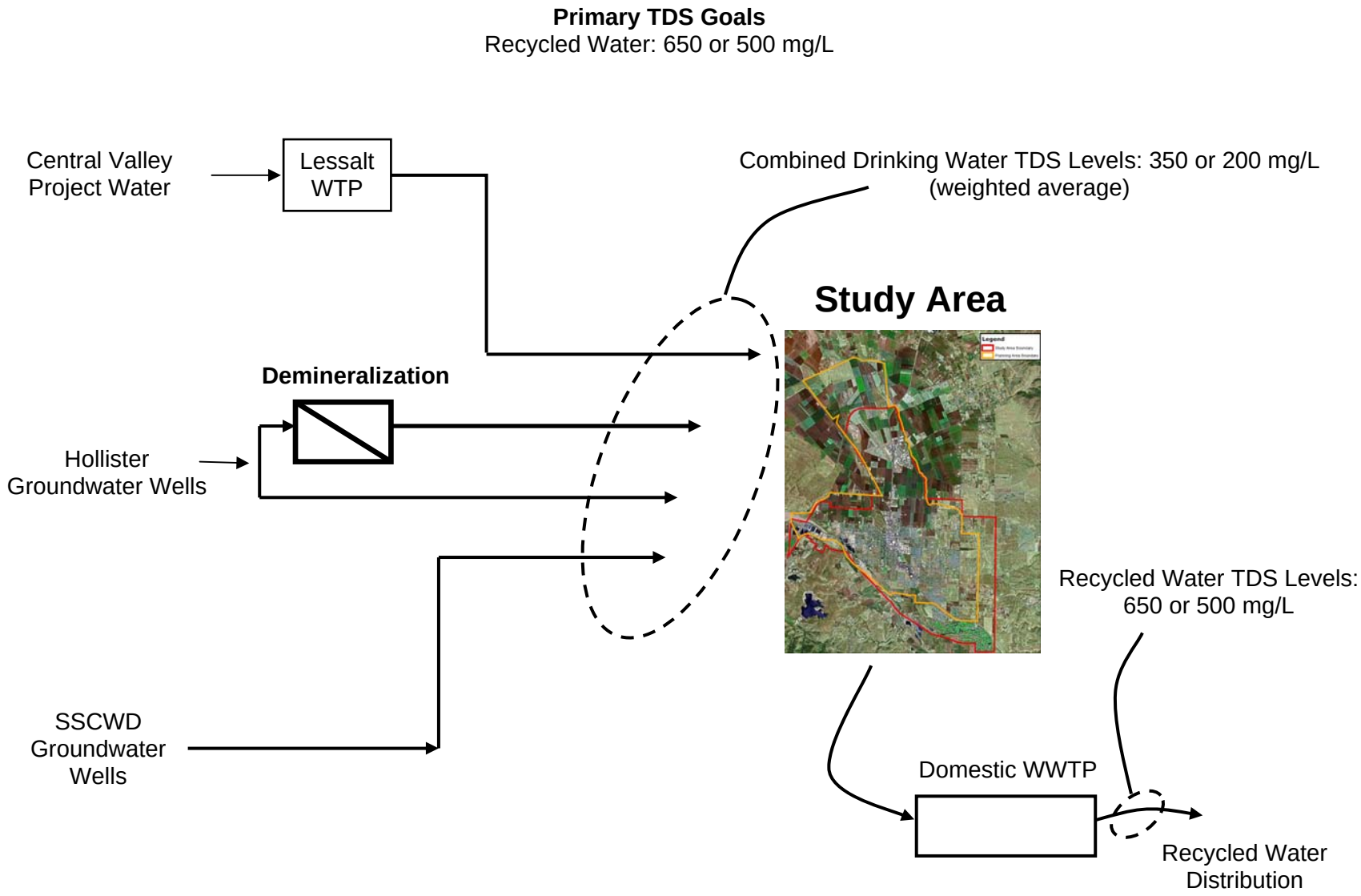


Figure 1. Alternative 1 Groundwater Demineralization

Figure 2 shows the volume of water required from the various supply sources to achieve the criteria described in this TM and a recycled water TDS concentration of 700 mg/L. As shown, the required volume of demineralized groundwater is equal to or slightly more than the volume of Hollister groundwater required throughout the planning period. Initially, a minimum average demineralization capacity of 1.9 million gallons per day (mgd) is required. At buildout (which is beyond 2023), the required average capacity is increased to 7.3 mgd. To achieve a lower TDS goal of 500 mg/L, the required minimum initial and buildout demineralization capacities would increased to 3.6 and 11.3 mgd, respectively.

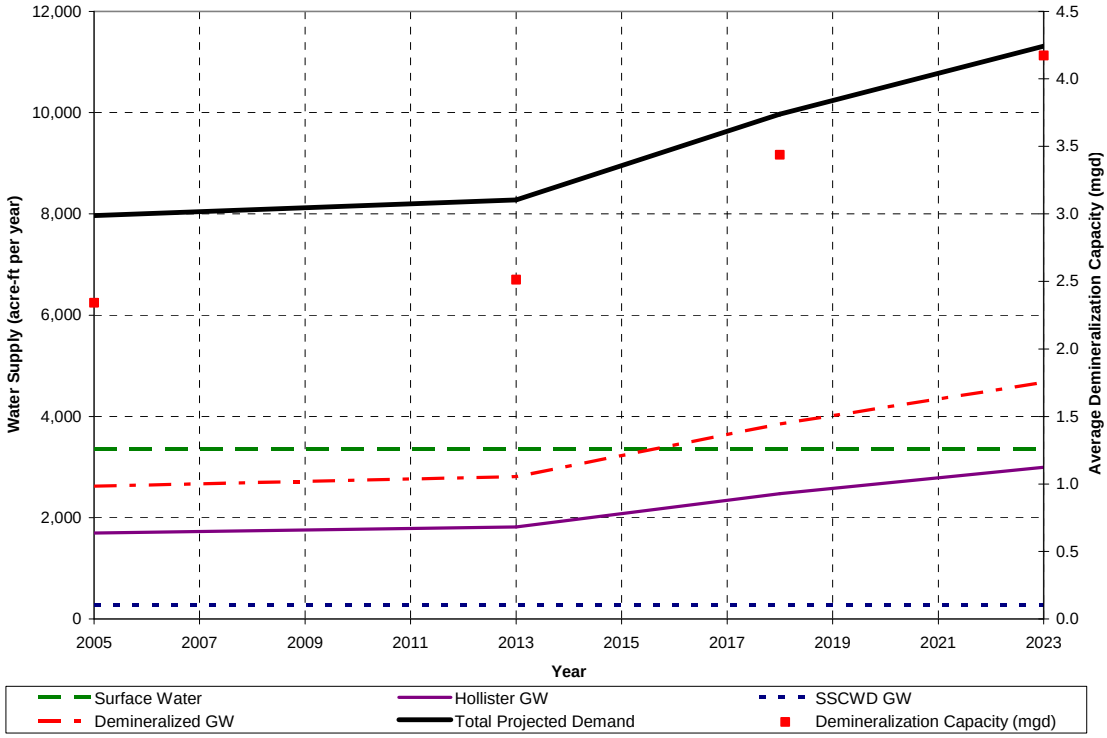


Figure 2. Estimated Water Supply and Demineralization Requirements to Achieve Recycled Water Criterion of 700 mg TDS/L – Alternative 1

Alternative 2. Groundwater Supply and Treated Effluent Demineralization

Figure 3 illustrates a proposed groundwater and treated effluent demineralization strategy to achieve both the drinking and recycled water quality goals. For this alternative, the quantity of groundwater requiring demineralization is dictated by the 500 mg TDS/L drinking water goal. Treated effluent demineralization needs are dictated by reducing the estimated raw wastewater influent TDS concentrations of 750 mg/L to either 700 or 500 mg/L.

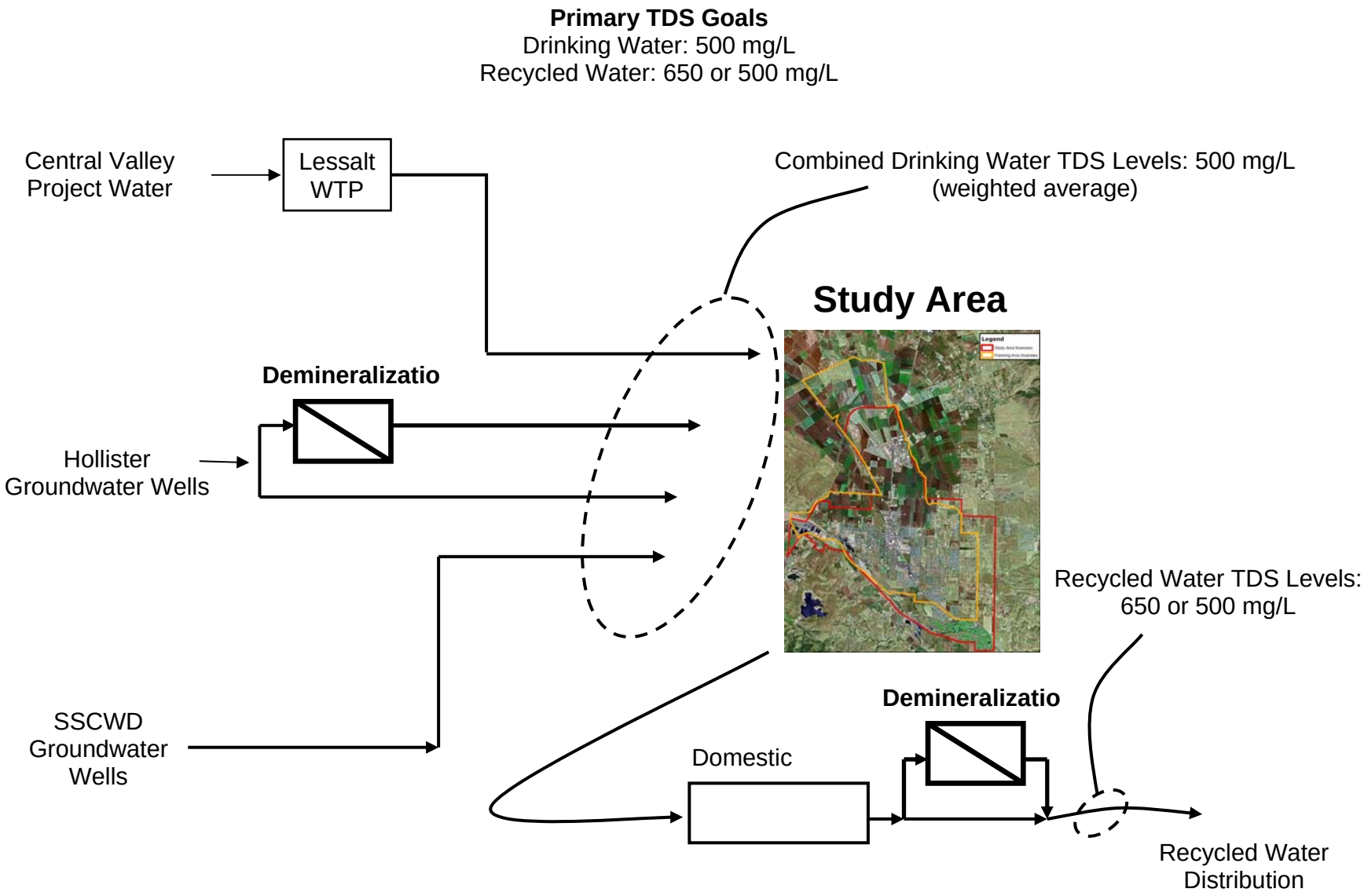


Figure 3. Alternative 2 Groundwater and Treated Effluent Demineralization

Figure 4 shows the volume of water required from the various supply sources to achieve the drinking water goal of 500 mg TDS/L and a recycled water goal of 650 mg TDS/L. Initially, minimum average groundwater and treated effluent demineralization capacities of 1.1 and 0.2 mgd, respectively, are required. At buildout, these required capacities are increased to 5.4 and 0.5 mgd, respectively. If the recycled water goal is decreased to 500 mg TDS/L, average treated effluent demineralization capacities of 0.9 and 2.6 mgd, respectively, are required initially and at buildout.

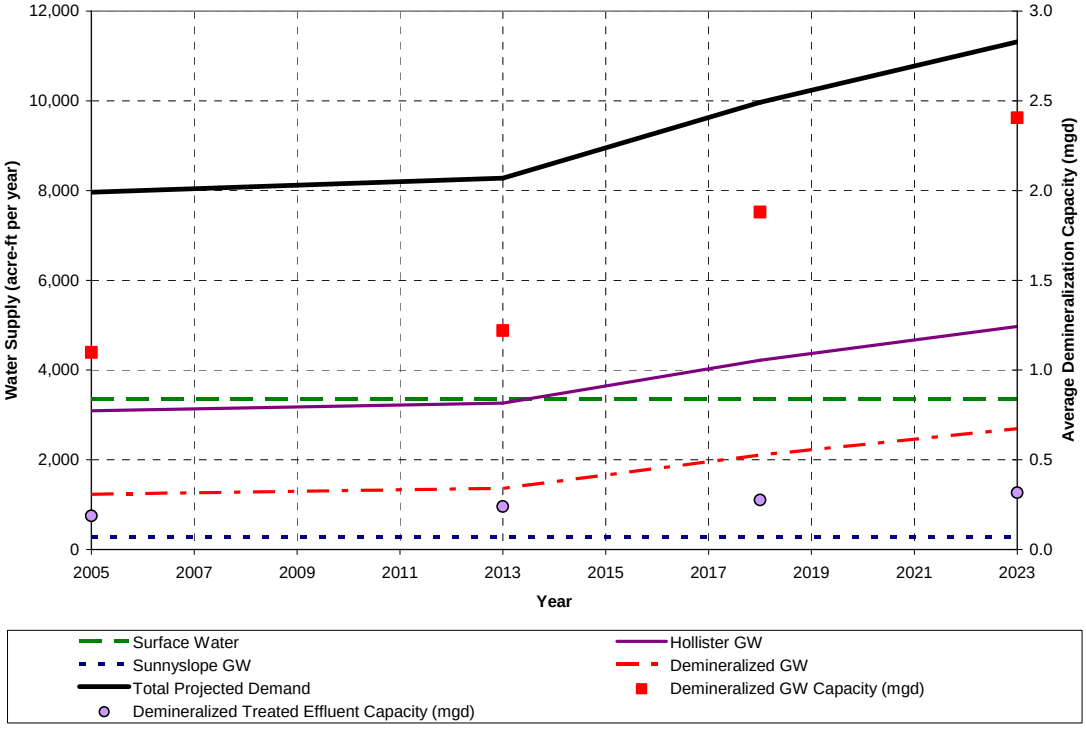


Figure 4. Estimated Water Supply and Demineralization Capacity Requirements to Achieve Recycled Water Criterion of 700 mg TDS/L – Alternative 2

Alternative 3. Treated Effluent Demineralization

Figure 5 illustrates a proposed treated effluent demineralization strategy to achieve the recycled water quality goals. This alternative reflects a “do nothing alternative” with regard to the drinking water TDS goals described in the MOU since no drinking water TDS removal is provided.

For this alternative, a minimum average treated effluent demineralization capacity of 1.1 mgd is required initially to achieve a treated effluent TDS goal of 700 mg/L. At buildout, the required capacity is increased to 3.6 mgd. If the recycled water goal is lowered to 500 mg TDS/L, the initial and buildout capacity requirements are 1.6 and 4.8 mgd, respectively.

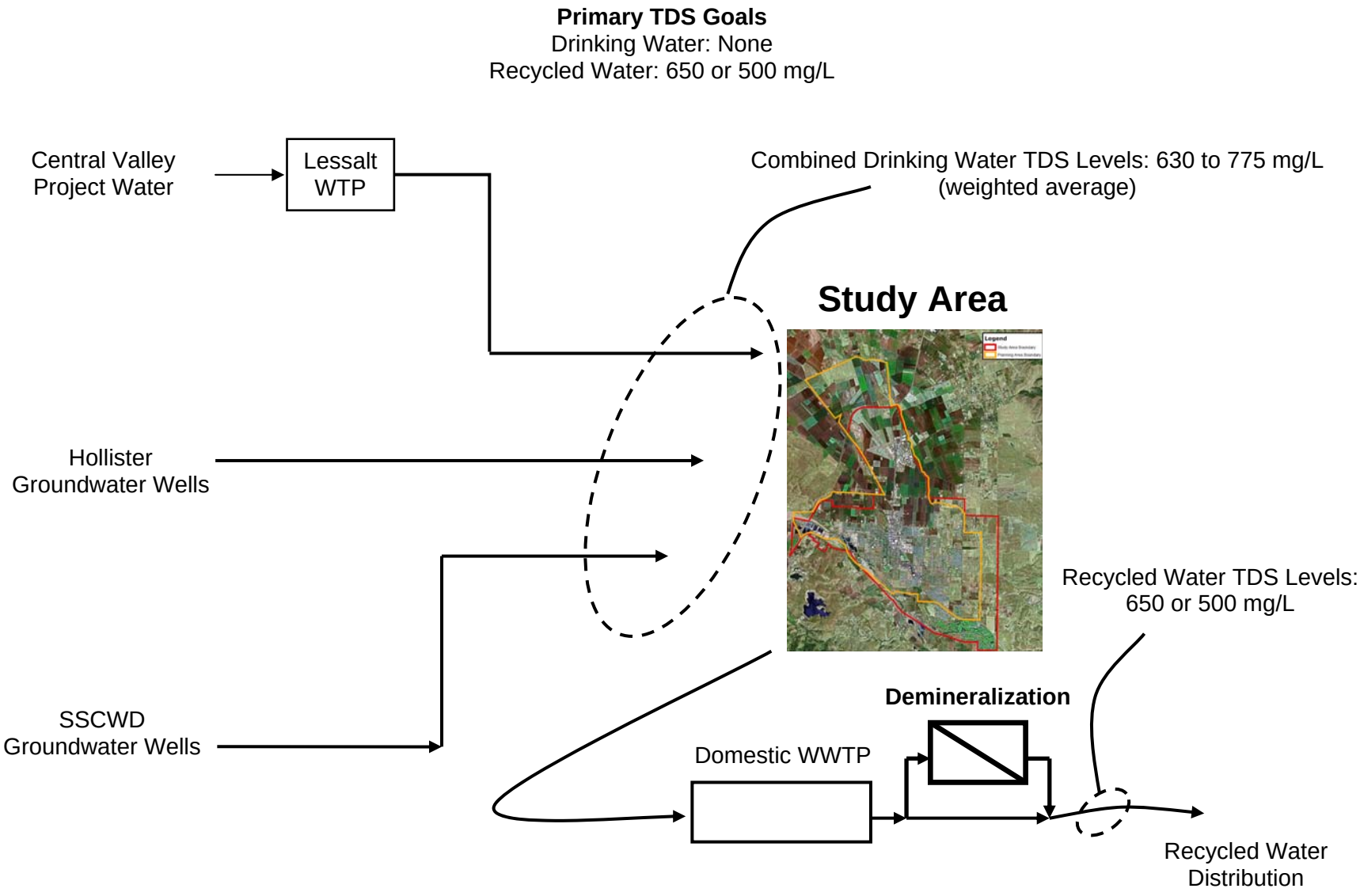


Figure 5. Treated Effluent Demineralization

Demineralization Cost Curves

Figure 6 and Figure 7 present the total estimated capital and O&M cost in terms of dollars per gallon of permeate for demineralization. The capital cost curves include pretreatment, feed water pumping, membrane process system, chemical cleaning system, housing, and a 25 percent allowance for engineering and administration. The curves are applicable to both groundwater and treated effluent demineralization. As shown, there are no capital cost differences between potential feed water TDS concentrations since all four curves are equal with regard to capacity and cost.

The following factors were used for estimating the capital and O&M costs described later in this TM.

- **Capital Costs**
  - Drinking Water: Demineralization costs are based on a maximum day to average demand peaking factor of 2.0.
  - Recycled Water: Demineralization costs are based on annual average flows.
- **O&M Costs:** Drinking and recycled water costs are based on average annual demands and flows.

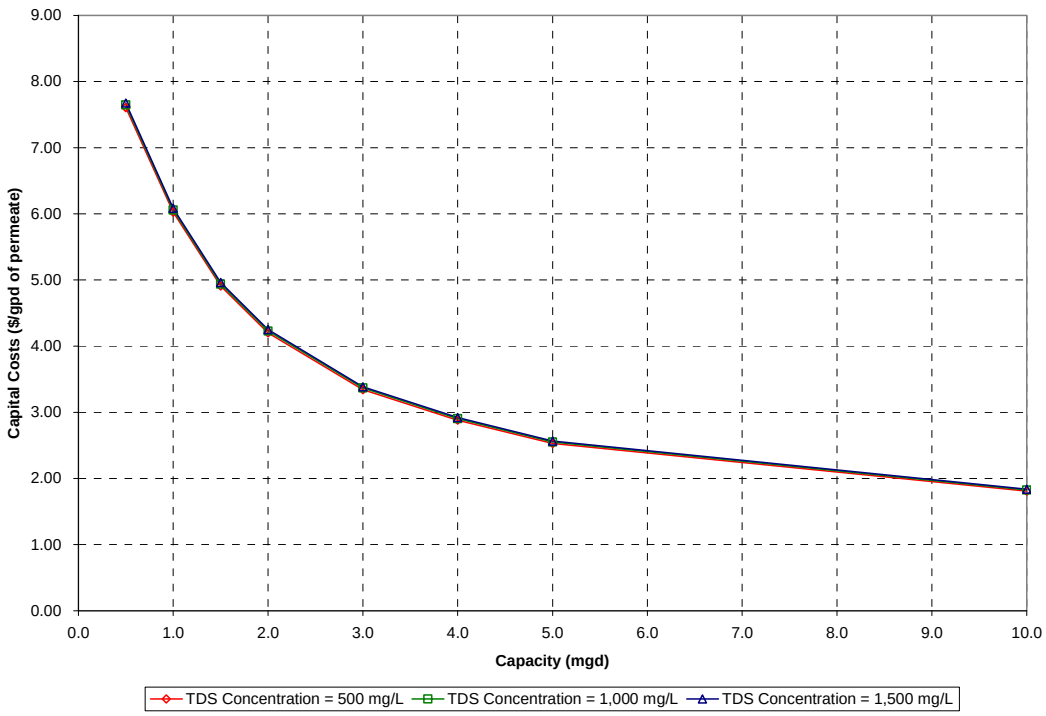


Figure 6. Estimated Demineralization Capital Costs for Various Plant Capacities

Brine Disposal Cost Curves

Capital and O&M cost curves for brine disposal are presented in Figure 8 and Figure 9. Costs presented in this figure are based on a land cost of $30,000 per acre and double pass RO configuration (to reduce brine volume) with an overall efficiency of 93 percent. This configuration is recommended to minimize overall land requirements.

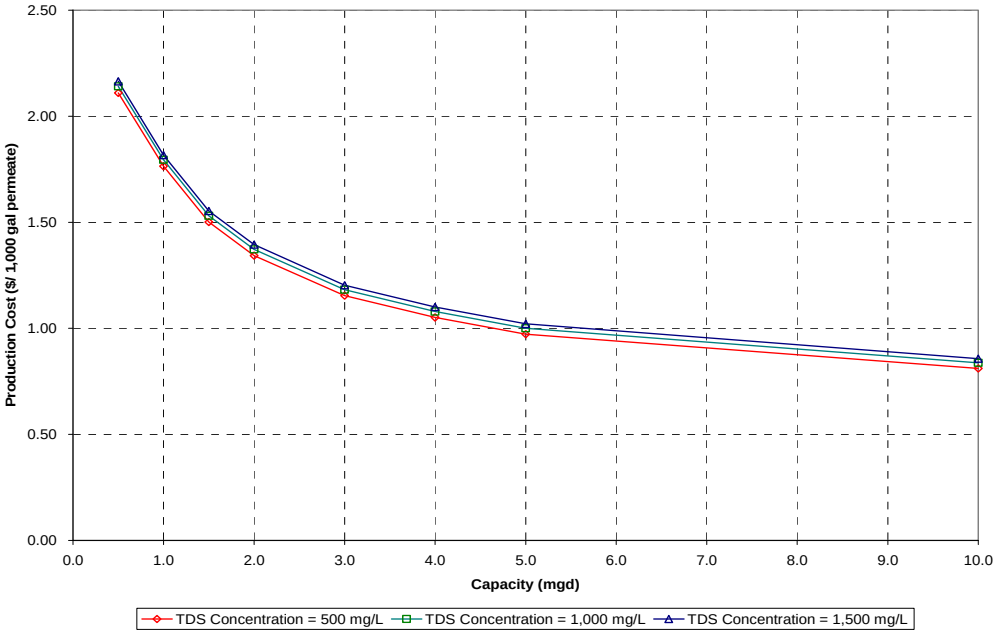


Figure 7. Estimated Demineralization Operating Costs for Various Plant Capacities

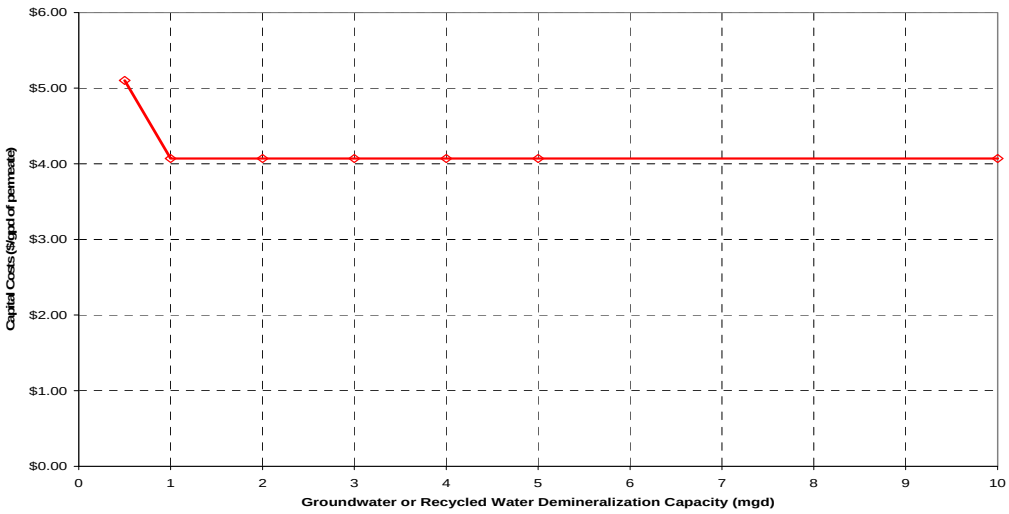


Figure 8. Estimated Brine Disposal Capital Costs for Various Plant Capacities

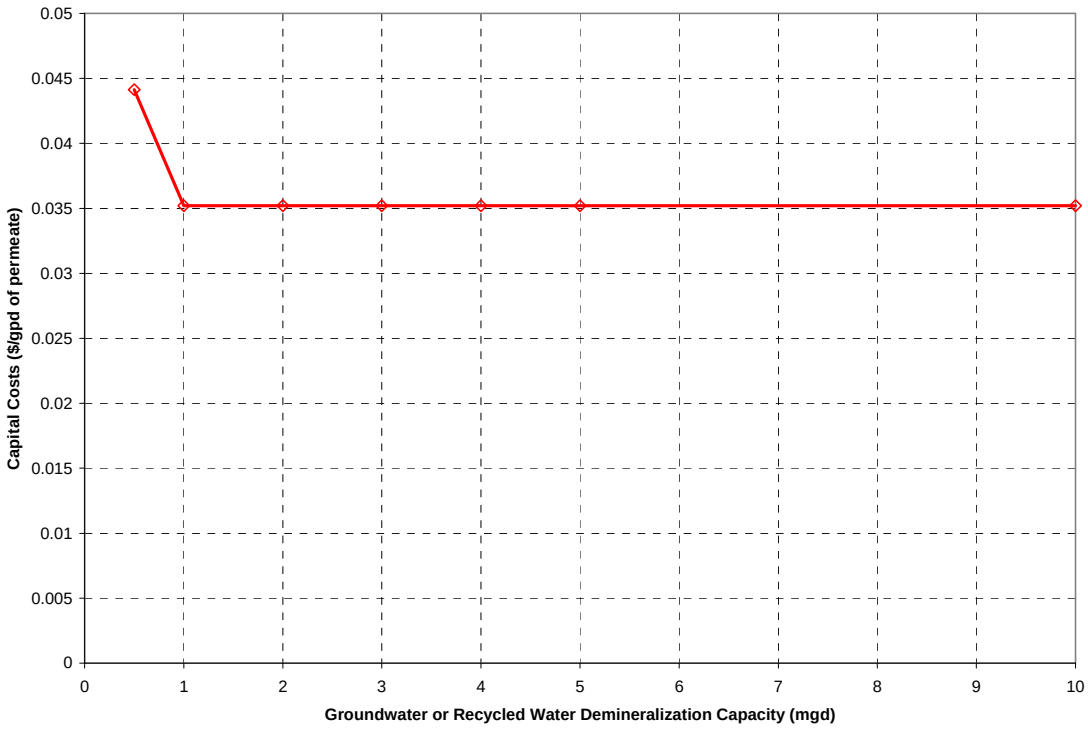


Figure 9. Estimated Operating Costs for Various Plant Capacities

Avoided Consumer Costs

Table 2 presents a summary of the avoided costs associated with the three demineralization alternatives. Values shown in this table are based on the avoided consumer costs with reduced drinking water TDS concentrations as compared to the current average TDS concentration of 875 mg/L. Avoided costs include reduced bottled/filtered water use; increased faucet, garbage disposal, clothes and dish washer, water heater, and residential water distribution pipeline service life expectancies; reduced operating expenses for residential water softening systems; and reduced purchases of residential water softening systems.

Table 2. Avoided Consumer Costs

Alternative	Consumer Cost Savings ($/resident-yr)	Consumer Cost Savings ($/mgTDS/L removed – resident)
Alt 1. Groundwater Demineralization	195 and 250[a]	0.37 and 0.41[a]
Alt 2. Groundwater and Recycled Water Demineralization	184.9	0.49
Alt 3. Recycled Water Demineralization	0	0

[a]Based on drinking water quality of 700 and 500 mg TDS/L respectively.

Costs presented in this table are based on a review of the following four documents:

- City of Davis, Joint Water Supply Feasibility Study for the City of Davis and University of California, Davis, May 2002 (Draft).
- Central Arizona Salinity Study, Phase I Report, December 2003.
- Metropolitan Water District of Southern California and United States Bureau of Reclamation, Salinity Management Study, June 1999 (Final Report)
- Preliminary consumer cost saving curves presented at CALFED Economics Workgroup.

Net Present Worth Cost Comparison

Table 3 presents a summary of the net present worth cost comparison results. When comparing alternatives, it is important to keep in mind that Alternative 3 is essentially a "do nothing" alternative with respect to drinking water TDS since it does not meet the MOU goals or attempt to reduce drinking water TDS concentrations. Cost comparison results show that a groundwater and recycled water demineralization strategy (Alternative 2) is the most cost effective approach if a recycled water TDS concentration of 700 mg/L is targeted. If a lower TDS concentration is desired, groundwater demineralization (Alternative 1) and Alternative 2 are essentially equal with regard to net present worth costs.

Comparison results also indicate that targeting a recycled water TDS goal of 500 mg/L is expected to cost 60 to 80 percent more than targeting the higher TDS level of 700 mg/L.

Table 3. Summary of Net Present Worth Cost Comparison

Alternative	Alternative 1 - Groundwater Demineralization		Alternative 2 – Groundwater and Recycled Water Demineralization		Alternative 3 – Recycled Water Demineralization[c]	
Recycled Water TDS Goal	700 mg/L	500 mg/L	700 mg/L	500 mg/L	700 mg/L	500 mg/L
Capital Costs ($)[a]						
Groundwater Demineralization	21,995,000	28,455,000	18,670,000	18,670,000	0	0
Recycled Water Demineralization	0	0	2,300,000	9,560,000	11,400,000	13,665,000
Brine Disposal	14,660,000	24,020,000	10,990,000	16,280,000	8,140,000	11,400,000
Subtotal ($)	36,660,000	52,470,000	31,960,000	44,510,000	19,540,000	25,065,000
Operations and Maintenance Costs ($/yr)[b]						
Groundwater Demineralization	3,540,000	5,090,000	2,665,000	2,665,000	0	0
Recycled Water Demineralization	0	0	555,000	2,245,000	2,525,000	3,155,000
Brine Disposal	105,000	180,000	85,000	125,000	40,000	75,000
Avoided Consumer Costs	-2,515,000	-3,015,000	-2,230,000	-2,230,000	0	0
Subtotal ($/yr)	1,130,000	2,255,000	1,075,000	2,805,000	2,565,000	3,230,000
Subtotal ($)[d]	16,830,000	33,555,000	15,995,000	41,740,000	38,180,000	48,040,000
TOTAL NET PRESENT WORTH COST	53,140,000	86,025,000	47,955,000	86,250,000	57,720,000	73,105,000

[a] Includes both Phase I (immediate) and Phase II (completed by 2013) improvements. Rounded to the nearest $5,000.
[b] Overall weighted average O&M cost. Rounded to the nearest $5,000.

[c] Alternative does not meet the drinking water goals and objectives described in the MOU.
[d] Net present worth of annual O&M costs.

Conclusions and Recommendations

The following is a summary of the conclusions and recommendations developed from the alternative analysis:

- **TDS Mass Balance Development.** The calculated TDS increase from municipal and residential sources is 525 mg/L which is higher than the typical range and is attributed to the use of softening units. Results described in this TM are based on an assumed TDS increase of either 250 or 525 mg TDS/L depending on drinking water quality.
- **Recommended alternative.** Alternative 1 (Groundwater Demineralization) is the recommended alternative since it (along with Alternative 2) is the most cost effective strategy for achieving a recycled water goal of 500 mg TDS/L while meeting the drinking water goals, limits demineralization operations to one stream, and provides the greatest consumer benefits. This demineralization strategy should be used as the basis for the development of the comprehensive alternatives carried forward into the Alternatives Screening Process.
- **Alternative TDS Removal Technology.** HDR is currently investigating the feasibility of using softening instead of reverse osmosis for TDS and hardness removal.

Attachment A

Attachment A
Holllister Urban Area Water and Wastewater Master Plan
Conservation Analysis
14-Jun-06

Total Demands - Lower Level of Conservation

	2005	2013	2018	2023	BO
Demands before Conservation	7965	9286	11356	12775	21914
Existing Res	5576	5144	5144	5144	5144
Existing Non-Res	2390	2065	2065	2065	2065
Existing Total		**7209**	**7209**	**7209**	**7209**
Projected Res		748	1476	2081	8821
Projected Non-Res		425	1610	2550	4119
Projected Total		**1173**	**3086**	**4631**	**12939**
Total Demands		**8381**	**10294**	**11840**	**20148**
Conservation Savings		10%	9%	7%	8%

Conservation estimates based on 2000 UWMP:
4% reduction for UFW savings for existing and projected demands (UWMP).
10% reduction of existing and projected nonresidential demands (UWMP).
6% reduction for projected residential demands (derived from UWMP).
417af reduction for existing residential at 2013 and 2018 (85% of UWMP estimate of 490af at 2010).

Total Demands - Higher Level of Conservation

	2005	2013	2018	2023	BO
Demands before Conservation	7965	9286	11356	12775	21914
Existing Res	5576	5085	4831	4589	4589
Existing Non-Res	2390	2065	2065	2065	2065
Existing Total		**7149**	**6895**	**6654**	**6654**
Projected Res		597	1139	1588	6936
Projected Non-Res		425	1610	2550	4119
Projected Total		**1022**	**2750**	**4138**	**11055**
Total Demands		**8171**	**9645**	**10791**	**17709**
Conservation Savings		12%	15%	16%	19%

Conservation estimates based on GMP, 2000 UWMP, and more aggressive residential assumptions:
4% reduction for UFW savings for existing and projected demands (UWMP).
10% reduction of existing and projected nonresidential demands (UWMP).
25% reduction of projected residential demands (more aggressive savings assumption).
Assuming residential remains at 70% of total demands, the 2005 demands were reduced by 1%/yr until 2023 (GMP).

Attachment B

Table B1a. Alternative 1 Raw Water Supply and Demineralization Capacity Requirements

Target Water Quality Goals (mg TDS/L)	Calculation Basis	MOU
Drinking Water	400	500
Recycled Water	700	500 to 700

	TDS Gain Calibration			Year					
	2004 Data	Modified	MOU Goals	2005	2013	2018	2023	Buildout	Source
Projected Water Demands									
Lower Level of Conservation				7,965	8,381	10,294	11,840	20,148	June 14, 2006 Water Demand Projections
Higher Level of Conservation				7,965	8,171	9,645	10,791	17,709	June 14, 2006 Water Demand Projections
Average				7,965	8,276	9,970	11,315	18,928	Arithmetic average of lower and higher levels of conservation
Water Supply TDS Concentrations									
Surface Water - Lessalt	300	300		300	300	300	300	300	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	820	850		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	775	850		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater	0	0		17.5	17.5	17.5	17.5	17.5	98 percent removal of SSCWD groundwater TDS
Water Supply									
Surface Water - Lessalt	1,019	1,019		3,360	3360	3360	3360	3360	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	2,871	2,871		2,161	2,300	3,055	3,655	7,051	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	285	285		285	285	285	285	285	2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater				2,159	2,331	3,269	4,015	8,232	
Water Supply - Calculated Ave TDS Concentration	690	716		400	400	400	400	400	
Target TDS Concentration - Water Supply			**500**	**500**	**500**	**500**	**500**	**500**	Weighted average TDS concentration
Raw Wastewater TDS Concentration	1,214	1,214							Historic 2004 WWTP Data
Gain from Water Supply to Raw Wastewater	524	498		**250**	250	250	250	250	
Target TDS Concentration - Treated Effluent			**500 to 700**	700	700	700	700	700	
Required Water Supply TDS (governs)				400	400	400	400	400	Target Drinking Water TDS Concentration to achieve recycled water goals
Demineralization Capacity - Average (mgd)				**1.9**	**2.1**	**2.9**	**3.6**	**7.3**	Estimated demineralization capacity requirements

Table B1b. Alternative 1 Raw Water Supply and Demineralization Capacity Requirements

Target Water Quality Goals (mg TDS/L)	Calculation Basis	MOU
Drinking Water	200	500
Recycled Water	500	500 to 700

	TDS Gain Calibration			Year					
	2004 Data	Modified	MOU Goals	2005	2013	2018	2023	Buildout	Source
Projected Water Demands									
Lower Level of Conservation				7,965	8,381	10,294	11,840	20,148	June 14, 2006 Water Demand Projections
Higher Level of Conservation				7,965	8,171	9,645	10,791	17,709	June 14, 2006 Water Demand Projections
Average				7,965	8,276	9,970	11,315	18,928	Arithmetic average of lower and higher levels of conservation
Water Supply TDS Concentrations									
Surface Water - Lessalt	300	300		300	300	300	300	300	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	820	850		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	775	850		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater	0	0		17.5	17.5	17.5	17.5	17.5	98 percent removal of SSCWD groundwater TDS
Water Supply									
Surface Water - Lessalt	1,019	1,019		3,360	3360	3360	3360	3360	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	2,871	2,871		303	369	730	1,016	2,637	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	285	285		285	285	285	285	285	2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater				4,017	4,262	5,595	6,654	12,647	
Water Supply - Calculated Ave TDS Concentration	690	716		200	200	200	200	200	
Target TDS Concentration - Water Supply			**500**	**500**	**500**	**500**	**500**	**500**	Weighted average TDS concentration
Raw Wastewater TDS Concentration	1,214	1,214							Historic 2004 WWTP Data
Gain from Water Supply to Raw Wastewater	524	498		**250**	250	250	250	250	
Target TDS Concentration - Treated Effluent			**500 to 700**	500	650	650	650	650	
Required Water Supply TDS (governs)				200	200	200	200	200	Target Drinking Water TDS Concentration to achieve recycled water
Demineralization Capacity - Average (mgd)				**3.6**	**3.8**	**5.0**	**5.9**	**11.3**	Estimated demineralization capacity requirements

Table B2a. Alternative 2 Raw Water Supply and Demineralization Capacity Requirements

Target Water Quality Goals (mg TDS/L)	Calculation Basis	MOU
Drinking Water	500	500
Recycled Water	700	500 to 700

	TDS Gain Calibration			Year					
	2004 Data	Modified	MOU Goals	2005	2013	2018	2023	Buildout	Source
Projected Water Demands									
Lower Level of Conservation				7,965	8,381	10,294	11,840	20,148	June 14, 2006 Water Demand Projections
Higher Level of Conservation				7,965	8,171	9,645	10,791	17,709	June 14, 2006 Water Demand Projections
Average				7,965	8,276	9,970	11,315	18,928	Arithmetic average of lower and higher levels of conservation
Water Supply TDS Concentrations									
Surface Water - Lessalt	300	300		300	300	300	300	300	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	627	1175		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	775	1175		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater	0	0		17.5	17.5	17.5	17.5	17.5	98 percent removal of SSCWD groundwater TDS
Water Supply									
Surface Water - Lessalt	1,019	1,019		3,360	3360	3360	3360	3360	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	2,871	2,871		3,090	3,265	4,218	4,975	9,259	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	285	285		285	285	285	285	285	2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater				1,230	1,366	2,107	2,695	6,025	
Water Supply - Calculated Ave TDS Concentration	557	961		500	500	500	500	500	
Target TDS Concentration - Water Supply			**500**	**500**	**500**	**500**	**500**	**500**	Weighted average TDS concentration
Wastewater Effluent TDS Concentration	1,214	1,214		1,264	1,264	1,264	1,264	1,264	Historic 2004 WWTP Data
Gain from Water Supply to Treated Effluent	657	253		**250**	250	250	250	250	
Raw Wastewater TDS Concentration				750	750	750	750	750	
Target TDS Concentration - Treated Effluent			**500 to 700**	700	700	700	700	700	
Average Annual WWTP Flow (mgd)				2.72	3.48	4.00	4.59	*7.68*	
Demineralized Treated Effluent Quality				25.28	25.28	25.28	25.28	*25.28*	
Treated Effluent Flow (no demin)				2.5	3.2	3.7	4.3	*7.1*	
Calculated Effluent TDS Concentration				700	700	700	700	*700*	
Demineralization Capacity Requirements - Average (mgd)									
Water Supply				**1.1**	**1.2**	**1.9**	**2.4**	**5.4**	Estimated demineralization capacity requirements
Recycled Water				**0.2**	**0.2**	**0.3**	**0.3**	**0.5**	

Table B2b. Alternative 2 Raw Water Supply and Demineralization Capacity Requirements

Target Water Quality Goals (mg TDS/L)	Calculation Basis	MOU
Drinking Water	500	500
Recycled Water	500	500 to 700

	TDS Gain Calibration			Year					
	2004 Data	Modified	MOU Goals	2005	2013	2018	2023	Buildout	Source
Projected Water Demands									
Lower Level of Conservation				7,965	8,381	10,294	11,840	20,148	June 14, 2006 Water Demand Projections
Higher Level of Conservation				7,965	8,171	9,645	10,791	17,709	June 14, 2006 Water Demand Projections
Average				7,965	8,276	9,970	11,315	18,928	Arithmetic average of lower and higher levels of conservation
Water Supply TDS Concentrations									
Surface Water - Lessalt	300	300		300	300	300	300	300	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	627	1175		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	775	1175		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater	0	0		17.5	17.5	17.5	17.5	17.5	98 percent removal of SSCWD groundwater TDS
Water Supply									
Surface Water - Lessalt	1,019	1,019		3,360	3360	3360	3360	3360	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	2,871	2,871		3,090	3,265	4,218	4,975	9,259	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	285	285		285	285	285	285	285	2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater				1,230	1,366	2,107	2,695	6,025	
Water Supply - Calculated Ave TDS Concentration	557	961		500	500	500	500	500	
Target TDS Concentration - Water Supply			**500**	**500**	**500**	**500**	**500**	**500**	Weighted average TDS concentration
Wastewater Effluent TDS Concentration	1,214	1,214		1,264	1,264	1,264	1,264	1,264	Historic 2004 WWTP Data
Gain from Water Supply to Treated Effluent	657	253		**250**	250	250	250	250	
Raw Wastewater TDS Concentration				750	750	750	750	750	
Target TDS Concentration - Treated Effluent			**500 to 700**	500	500	500	500	500	
Average Annual WWTP Flow (mgd)				2.72	3.48	4.00	4.59	*7.68*	
Demineralized Treated Effluent Quality				25.28	25.28	25.28	25.28	*25.28*	
Treated Effluent Flow (no demin)				1.8	2.3	2.6	3.0	*5.0*	
Calculated Effluent TDS Concentration				500	500	500	500	*500*	
Demineralization Capacity Requirements - Average (mgd)									
Water Supply				**1.1**	**1.2**	**1.9**	**2.4**	**5.4**	Estimated demineralization capacity requirements
Recycled Water				**0.9**	**1.2**	**1.4**	**1.6**	**2.6**	

Table B3a. Alternative 3 Raw Water Supply and Demineralization Capacity Requirements

Target Water Quality Goals (mg TDS/L)	Calculation Basis	MOU
Drinking Water	None	500
Recycled Water	650	500 to 700

	TDS Gain Calibration			Year					
	2004 Data	Modified	MOU Goals	2005	2013	2018	2023	Buildout	Source
Projected Water Demands									
Lower Level of Conservation				7,965	8,381	10,294	11,840	20,148	June 14, 2006 Water Demand Projections
Higher Level of Conservation				7,965	8,171	9,645	10,791	17,709	June 14, 2006 Water Demand Projections
Average				7,965	8,276	9,970	11,315	18,928	Arithmetic average of lower and higher levels of conservation
Water Supply TDS Concentrations									
Surface Water - Lessalt	300	300		300	300	300	300	300	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	627	1175		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	775	1175		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater	0	0		17.5	17.5	17.5	17.5	17.5	98 percent removal of SSCWD groundwater TDS
Water Supply									
Surface Water - Lessalt	1,019	1,019		3,360	3360	3360	3360	3360	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	2,871	2,871		4,320	4,631	6,325	7,670	15,283	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	285	285		285	285	285	285	285	2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater				0	0	0	0	0	
Water Supply - Calculated Ave TDS Concentration	557	961		632	642	681	704	773	
Target TDS Concentration - Water Supply									Weighted average TDS concentration
Wastewater Effluent TDS Concentration	1,214	1,214		1,157	1,167	1,206	1,229	1,298	Historic 2004 WWTP Data
Gain from Water Supply to Raw Wastewater	657	253	253	**525**	525	525	525	525	
Raw Wastewater TDS Concentration				1,157	1,167	1,206	1,229	1,298	
Target TDS Concentration - Treated Effluent			**500 to 700**	700	700	700	700	700	
Average Annual WWTP Flow (mgd)				2.72	3.48	4.00	4.59	*7.68*	
Demineralized Treated Effluent Quality				23.1	23.3	24.1	24.6	*26.0*	
Treated Effluent Flow (no demin)				1.6	2.1	2.3	2.6	*4.1*	
Calculated Effluent TDS Concentration				700	700	700	700	*700*	
Demineralization Capacity Requirements - Average (mgd)									
Water Supply				**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	Estimated demineralization capacity requirements
Recycled Water				**1.1**	**1.4**	**1.7**	**2.0**	**3.6**	

Table B3b. Alternative 3 Raw Water Supply and Demineralization Capacity Requirements

Target Water Quality Goals (mg TDS/L)	Calculation Basis	MOU
Drinking Water	None	500
Recycled Water	500	500 to 700

	TDS Gain Calibration			Year					
	2004 Data	Modified	MOU Goals	2005	2013	2018	2023	Buildout	Source
Projected Water Demands									
Lower Level of Conservation				7,965	8,381	10,294	11,840	20,148	June 14, 2006 Water Demand Projections
Higher Level of Conservation				7,965	8,171	9,645	10,791	17,709	June 14, 2006 Water Demand Projections
Average				7,965	8,276	9,970	11,315	18,928	Arithmetic average of lower and higher levels of conservation
Water Supply TDS Concentrations									
Surface Water - Lessalt	300	300		300	300	300	300	300	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	627	1175		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	775	1175		875	875	875	875	875	Average 2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater	0	0		17.5	17.5	17.5	17.5	17.5	98 percent removal of SSCWD groundwater TDS
Water Supply									
Surface Water - Lessalt	1,019	1,019		3,360	3360	3360	3360	3360	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - COH	2,871	2,871		4,320	4,631	6,325	7,670	15,283	2004 Annual Drinking Water Quality Report, City of Hollister
Groundwater - SSCWD	285	285		285	285	285	285	285	2004 Annual Drinking Water Quality Report, City of Hollister
Demineralized Groundwater				0	0	0	0	0	
Water Supply - Calculated Ave TDS Concentration	557	961		632	642	681	704	773	
Target TDS Concentration - Water Supply									Weighted average TDS concentration
Wastewater Effluent TDS Concentration	1,214	1,214		1,157	1,167	1,206	1,229	1,298	Historic 2004 WWTP Data
Gain from Water Supply to Raw Wastewater	657	253	253	**525**	525	525	525	525	
Raw Wastewater TDS Concentration				1,157	1,167	1,206	1,229	1,298	
Target TDS Concentration - Treated Effluent			**500 to 700**	500	500	500	500	500	
Average Annual WWTP Flow (mgd)				2.72	3.48	4.00	4.59	*7.68*	
Demineralized Treated Effluent Quality				23.1	23.3	24.1	24.6	*26.0*	
Treated Effluent Flow (no demin)				1.1	1.5	1.6	1.8	*2.9*	
Calculated Effluent TDS Concentration				500	500	500	500	*500*	
Demineralization Capacity Requirements - Average (mgd)									
Water Supply				**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	Estimated demineralization capacity requirements
Recycled Water				**1.6**	**2.0**	**2.4**	**2.8**	**4.8**	

EXHIBIT 7.3

HUA MEMORANDUM OF UNDERSTANDING, 2004

MEMORANDUM OF UNDERSTANDING

HOLLISTER URBAN AREA
WATER AND WASTEWATER MASTER PLAN

This MEMORANDUM OF UNDERSTANDING (MOU) is made and entered into on _____, 2004 by and among the SAN BENITO COUNTY WATER DISTRICT (SBCWD), the CITY OF HOLLISTER (CITY), and San Benito County (SBC)

RECITALS

WHEREAS, California Government Code Section 6502, authorizes public entities, including cities, counties and special districts to enter into agreements for their mutual benefit; and

WHEREAS, SBCWD, CITY, and SBC have developed a Statement of Intent, Hollister Area Water and Wastewater Master Plan; attached as Exhibit A, and included herein by reference, and

WHEREAS, SBCWD, CITY, and SBC have a compelling and mutual interest in developing and implementing the Hollister Urban Area Water and Wastewater Master Plan, (MASTER PLAN), and

WHEREAS, SBCWD, CITY, and SBC want to ensure cooperation and mutual support for successful and cost-effective development and implementation of the MASTER PLAN.

NOW, THEREFORE, BE IT UNDERSTOOD AND AGREED by SBCWD, CITY, and SBC as follows:

1. GENERAL. The foregoing recitals are true and current, and incorporated herein.

2. HOLLISTER URBAN AREA WATER AND WASTWATER MASTER PLAN The parties intend to undertake the development of a comprehensive Master Plan for water supply and wastewater treatment and disposal for the Hollister Urban Area.

The comprehensive MASTER PLAN shall identify specific programs and projects to achieve the agreed upon objectives at the lowest practical lifecycle cost and earliest practical time. The MASTER PLAN shall include a feasibility phase(s) and an implementation plan phase(s) resulting in specific size, location and performance for physical facilities, project specific CEQA compliance, a financing plan including required revenues from water (wholesale and retail), recycled water and wastewater rates and charges, assessments and connection/impact fees, funding mechanism (cash, bonds, etc.), and institution arrangements and responsibilities (ownership, operations, maintenance, repair and replacement responsibility, etc.)

2.1 As provided in the Statement of Intent, the MASTER PLAN shall be based on the following principles:

2.1.1 The Hollister Domestic Wastewater Treatment Plant is the primary wastewater treatment plant for the Hollister Urban Area including areas within the County that are designated to be served by that facility.

2.1.2 The standards for the quality of wastewater to be discharged (percolated, reused or discharged to surface water) shall be developed and agreed to by the City of Hollister, San Benito County and the San Benito County Water District and shall include appropriate consideration of regional issues. These standards shall be the most stringent of local standards, state or federal regulations and shall include careful consideration of anticipated future regulation.

2.1.3 The selection of wastewater treatment processes and disposal methods shall include careful consideration of future wastewater disposal requirements and provision for maximum reuse of wastewater. The selection of wastewater disposal options and sites shall be agreed to by the City of Hollister, San Benito County and San Benito County Water District provided that disposal shall not:

a. Impact drinking water supplies or negatively impact adjacent land uses or property values unless fully mitigated to the satisfaction of the City of Hollister, San Benito County and San Benito County Water District, or

b. Be inconsistent with applicable General Plans or Policies including preservation of agricultural land, or

c. Be or result in conditions inconsistent with the quantity, quality, or groundwater levels objectives of groundwater management plans for the area of disposal.

2.1.4 Urban water supply including as appropriate blending of treated surface water and ground water, removal of hardness and other minerals from groundwater to provide urban water users with uniform water quality, shall minimize the need for water softeners, assure reliability of the urban water supply and support direct use of urban wastewater. The urban water supply shall include provision(s) for drinking water service to areas in and adjacent to the Hollister Urban Area where Health and Safety issues exist.

2.1.5 Surface water and groundwater supplies shall be managed to sustain the area water supply and manage groundwater levels to avoid negative impacts on overlying land uses.

2.1.6 The standards for the quality of potable (drinking) water delivered to urban users shall be developed and agreed to by the City of Hollister, San Benito County and the San Benito County Water District and shall include appropriate consideration of regional issues while focusing on economic and health impacts. These standards shall to be the most stringent of local standards, state or federal regulations and shall include careful consideration of anticipated future regulation.

2.1.7 The impacts of water supply and treatment and wastewater treatment and disposal including reclamation on the culture, economy and environment of the City of Hollister and San Benito County shall be carefully evaluated and negative impacts minimized. The impacts considered shall include, but not be limited to, impacts on air quality, surface water and groundwater quality and quantity, rates and charges including connection / impact fees, property values, industry and business, preservation of agriculture and agricultural land, and aesthetics.

2.1.8 Water and wastewater management to protect and sustain the local surface and groundwater supplies of San Benito County.

2.2 The Parties further agree that the MASTER PLAN shall be based on the following objectives and assumptions:

2.2.1 The urban water supply (surface and groundwater) and water system for the Hollister Urban Area shall be capable of meeting 100% of the demands during wet, above normal, normal and dry years and in the first year of a critically dry period. That supply shall be consistent with meeting 100% of the San Benito County Water District Zone 3 and Zone 6 demands under the same conditions. During the second and subsequent years of multi-year droughts/water shortages the water supplies (surface and groundwater) shall be capable of meeting 85% of the Municipal and Industrial demands and 75% of the agricultural demands.

2.2.2 Drinking water shall have a TDS concentration of not greater than 500 mg/l and a hardness of not greater than 120 mg/l (Calcium Carbonate)

2.2.3 Recycled wastewater, shall have a target TDS of 500 mg/l and shall not exceed 700 mg/l TDS. To meet this objective, the wastewater treatment plant(s) shall include provision(s) for demineralization. This objective shall be met first by rigorous source control including, but not limited to, the elimination of on-site regenerating water softeners and second by demineralization. Blending recycled water with San Felipe water is ONLY an interim measure for achieving recycled wastewater quality objectives. The recycled wastewater objective shall be met by the two measures identified above and the objectives of Section 2.2.2 as soon as practical and not later then by 2015.

2.2.4 Within the Hollister Urban Area all wastewater shall be treated at a central wastewater treatment plant and City and County General Plans and supporting public service plans and implementing Ordinances/Regulations shall be consistent with that requirement. This provision shall not preclude satellite wastewater separation plants for the recovery of water for local recycling.

2.2.5 Within the Hollister Urban Area reliable and sustainable water supply shall be provided and maintained. The water conservation goals of the Groundwater Management Plan Update for the San Benito County Portion of the Gilroy-Hollister Groundwater Basin shall be used as the basis for all water and wastewater Demand/flow projects. Water supply, treatment, transmission, storage (fire suppression, emergency and operational), and distribution facilities shall meet water industry and regulatory standards for service and reliability. The MASTER PLAN shall include an evaluation of the current systems service and reliability levels. The MASTER PLAN shall include an evaluation of the Hollister Urban Area water supply meeting California Urban Water Management Plan requirements including Chapters 642 and 643, Statues of 2001 (Senate Bill 221 and 610 respectively). It is the intent of the parties that these evaluations be used to determine and define the ability of the Hollister Area water systems to service additional customers and that these evaluations will be the basis for General Plans and supporting policies and plans including input to LAFCO determinations and that the Master Plan be updated at seven (7) to ten (10) year intervals.

2.2.6 Urban water supply including the treatment of surface and groundwater for wholesale delivery shall be the responsibility of the San Benito County Water District. Continued, managed use of groundwater is necessary to protect portions of the Hollister Urban Area including the City of Hollister Industrial and Domestic Wastewater Treatment Plants and areas susceptible to liquefaction from the adverse impacts of high groundwater. To achieve this continued and managed use of groundwater, groundwater supplies from the existing City of Hollister wells will be made available to SBCWD for water supply purposes ONLY if the City of Hollister consents and agrees to specific terms and conditions for that use.

2.2.7 Centralized wastewater treatment including specialize treatment as required to produce reclaimed water for agricultural purposes and disposal by means other than reclamation shall be the responsibility of the City of Hollister.

2.2.8 Marketing and distribution of recycled water for agricultural purposes and for any purpose outside the city limits of the City of Hollister shall be the responsibility of the San Benito County Water District.

2.2.9 Within the Hollister Urban Area dual water supplies and dual distribution systems shall be required for all new development and for new parks, schools grounds, cemeteries, and other large landscaped areas. Every reasonable effort shall be made to provide existing park, school grounds, cemeteries and other large landscape areas with supplies separate from the domestic water system. Nothing shall prevent the San Benito County Water District from developing groundwater supplies for parks, school grounds, cemeteries and other large landscaped areas.

The Parties recognize that these objectives may require revision in order to be achieved at the lowest practical lifecycle cost and earliest practical time. Any such revision shall be made in accordance with Article 13.

3. GOVERNANCE COMMITTEE. A Governance Committee shall be formed to provide policy level direction for the MASTER PLAN. The Governance Committee shall consist of two (2) elected officials from each Party. The Governance Committee will meet no less than quarterly to review the MASTER PLAN status. SBCWD agrees to provide for notice of meetings and meeting facilities unless otherwise directed by the Governance Committee. Regular, adjourned and special meetings shall be called and held in the manner as provided in Chapter 9 of Division 2, Title 5 of the Government Code of the State of California, "The Brown Act", commencing at Government Code Section 54950.

4. MANAGMENT COMMITTEE. A Management Committee shall be authorized and established for day-to-day management of the Master Plan. Each Party shall have one agency staff representative on the Management Committee. The Management Committee shall establish the means for decision making and resolution of any and all disputes. The decision making and dispute resolutions procedures shall be provided to the Governance Committee for review.

5. MASTER PLAN ADVISORY GROUP. At the direction of the Management Committee, a Master Plan Advisory Group may be established to provide technical, financial, institutional, regulatory and environmental review and advise. The Management Committee shall make provision for regular and ongoing consultation with the Central Coast Regional Water Quality Control Board and the California Department of Health Services.

6. BUDGET AND FINANCIAL COMMITMENT. By execution of this MOU, each Party agrees to an initial budget for the MASTER PLAN as outlined below. This initial budget is intended to cover the estimated costs for the Feasibility Phase of the Program. The budget for subsequent phases will be developed by the Management Committee and approved by the Governance Committee. Each Party commits to funding the initial budget in the following shares:

Party	%	$
SBCWD	45.0	135,000
CITY	42.0	125,000
SBC	13.0	40,000
	100.0	300,000

7. PAYMENT. Each Party upon execution of this MOU shall forward a check or warrant to SBCWD payable to SBCWD – HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN FUND (FUND) in the amount of 30 percent of the initial budget in Article 6. Upon authorization of contracts for services, materials, and expenses, each Party agrees to pay its share of the FUND as agreed in Article 8. Each Party shall bear its own policy (elected official), technical and management staff costs. SBCWD agrees to manage the FUND as provided in Article 8 hereof. Invoices shall be payable to SBCWD – Hollister Urban Area Water and Wastewater Master Plan FUND within 30 days of receipt.

8. HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN FUND. Upon receipt of a fully executed agreement from all Parties and payment to SBCWD of their allocated shares, as provided in Articles 6 and 7, SBCWD shall, with its contribution as provided in Article 6, execute this MOU and shall establish the FUND which shall be maintained separately from all other SBCWD funds. Interest on the balance of funds on hand shall accrue to the benefit of the FUND. SBCWD shall maintain all accounting records related to the FUND and may charge the FUND for the reasonable costs of accounting services. SBCWD will provide all agencies with a monthly accounting of all FUND income and expenses and the balance on hand. The Governance Committee may authorize assessments if it deems it necessary to increase the balance on hand in the FUND provided that the Party shall not be assessed, and shall not be required to pay any amount in excess of its commitment provided in Article 6 hereof until all Parties agree to increase the budget or adjust the shares.

9. MASTER PLAN ADMINISTRATION. SBCWD will act as the Administrator and will provide a Program Manager dedicated to the MASTER PLAN and will contract for consulting services or other expenses subject to approval by the Governance Committee. The Program Manager and consultants retained for the MASTER PLAN effort shall report to and be responsible to the Management Committee.

10. DATA, STUDIES AND RELATED INFORMATION. The Parties agree to all provide pertinent data, previous studies, and related information for the completion of the MASTER PLAN. Specific data, previous studies and related information to be provided by the Parties is detailed in the WORK PLAN.

11. SEPARATE AGREEMENTS. No Party herein is obligated by this MOU to implement final design, financing, or construction of the HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN facilities or to the percentages set forth in Article 6. Any facilities proposed to implement the MASTER PLAN shall be designed, financed, and constructed pursuant to separate agreements, provided that if a Party's share changes, up or

down, prior payments under this MOU may be credited or debited to participating Parties. Ownership and OMR&R responsibilities shall be subject to a separate agreement to be executed before any construction contract is awarded.

12. NOTICES. All notices relative to this MOU shall be given in writing and shall be personally served or sent by certified or registered mail and be effective upon actual personal service or depositing in the United States mail. The Parties shall be addressed as follows, or at any other address designated by notice:

SBCWD: District Engineer
30 Mansfield Road
Hollister, CA 95023
Tel: 831-637-8218
Fax: 831-637-7267

CITY: Public Works Director
375 Fifth Street
Hollister, CA 95023
Tel: 831-636-4370
Fax: 831-634-4372

SBC: County Planning Director
San Benito County Planning Department
3225 Southside Road
Hollister, CA 95023
Tel: 831 637-5313
Fax: 831 637-9015

13. ENTIRE AGREEMENT. This MOU sets forth the entire Agreement among the Parties and supersedes all other oral or written representations. This MOU may be modified only in writing, approved by the Parties.

14. INDEPENDENT CONTRACTORS. This MOU calls for the performance of the service of SBCWD, CITY, and SBC as independent contractors. No Party is an agent or employee of any other Party for any purpose and is not entitled to any of the benefits provided by any Party to its employees. This MOU shall not be construed as forming a partnership or any other association or agency among SBCWD, CITY, and SBC other than that of independent contractors.

15. LIMITATION OF LIABILITY. No Party shall be liable to any other Party for any loss, damage, liability, claim or cause of action for damage to or destruction of property or for injury to or death of persons arising solely from any act or omission of the other Party's officers, agents, or employees

16. CLAIMS. A Party against whom any claim arising from any subject matter of this MOU is filed shall give prompt written notice of the filing of the claim to all other Parties.

17. EFFECTIVE DATE. This MOU is effective upon duly authorized execution by all of the Parties. It is the product of negotiation and, therefore, shall not be construed against any Party.

18. ADDITIONAL MEMBERS. The Governance Committee shall establish policy and procedures to incorporate Sunnyslope County Water District as an additional party to this MOU. Said policy shall be added to this MOU as an addendum.

19. TERMINATION. Any Party to this MOU may terminate its participation in the activities herein described upon:

1. Completion of the feasibility phase, or
2. Upon 180 days written notification to the other Parties follow completion of the feasibility phase

IN WITNESS HEREOF, the Parties hereto have caused this MOU to be executed, the day and year first-above written.

SAN BENITO COUNTY WATER DISTRICT

David E. Pipal, District Counsel — 12/15/04 Date

Approved as to Form:

Kenneth A. Perry, President — 12/15/04 Date

Attest

Maria E. Alfaro, Secretary — December 15, 2004 Date

CITY OF HOLLISTER

Dec 13, 2004 Date

Approved as to Form:

Dec. 13, 2004 Date

Attest

Dec 13, 2004 Date

SAN BENITO COUNTY

Co. Counsel — Dec. 7, 2004 Date

Approved as to Form:

12/7/04

Attest

asst. Clerk — 12/7/04 Date

STATEMENT OF INTENT

CITY OF HOLLISTER
SAN BENITO COUNTY
SAN BENITO COUNTY WATER DISTRICT

HOLLISTER URBAN AREA
WATER AND WASTEWATER MASTER PLAN

To develop and maintain a master plan for water supply and wastewater treatment and disposal for the Hollister Urban Area that meets agreed upon objectives in support of and consistent with the General Plans of San Benito County and the City of Hollister and the Groundwater Management Plan for the San Benito County Portion of the Gilroy –Hollister Groundwater Basin.

1. The master plan shall be based on the following:

1.1 The Hollister Domestic Wastewater Treatment Plant is the primary wastewater treatment plant for the Hollister Urban Area including areas within the County that are designated to be served by that facility.

1.2 The standards for the quality of wastewater to be discharged (percolated, reused or discharged to surface water) shall be developed and agreed to by the City of Hollister, San Benito County and the San Benito County Water District and shall include appropriate consideration of regional issues. These standards shall be the most stringent of local standards, state or federal regulations and shall include careful consideration of anticipated future regulation.

1.3 The selection of wastewater treatment processes and disposal methods shall include careful consideration of future wastewater disposal requirements and provision or maximum reuse of wastewater. The selection of wastewater disposal options and sites shall be agreed to by the City of Hollister, San Benito County and San Benito County Water District that disposal <u>shall not:</u>

a. Impact drinking water supplies or negatively impact adjacent land uses or property values unless fully mitigated to the satisfaction of the City of Hollister, San Benito County and San Benito County Water District, or

b. Be inconsistent with applicable General Plans or Policies including preservation of agricultural land, or

c. Be or result in conditions inconsistent with the quantity, quality, or groundwater levels objectives of groundwater management plans for the area of disposal.

1.4 Urban water supply including as appropriate blending of treated surface water and ground water, removal of hardness and other minerals from groundwater to provide urban water users with uniform water quality, minimize the need for water softeners, assure reliability of the urban water supply and support direct use of urban wastewater. The urban water supply shall include provision(s) for drinking water service to areas in and adjacent to the Hollister Urban Area where Health and Safety issues exist.

1.5 Surface water and groundwater supplies to be managed to sustain the area water supply and manage groundwater levels to avoid negative impacts on overlying land uses.

1.6 The standards for the quality of potable (drinking) water delivered to urban users shall be developed and agreed to by the City of Hollister, San Benito County and the San Benito County Water District and shall include appropriate consideration of regional issues while focusing on economic and health impacts. These standards shall be the most stringent of local standards, state or federal regulations and shall include careful consideration of anticipated future regulation.

1.7 The impacts of water supply and treatment and wastewater treatment and disposal including reclamation on the culture, economy and environment of the City of Hollister and San Benito County shall be carefully evaluated and negative impacts minimized. The impacts considered shall include , but not be limited to, impacts on air quality, surface water and groundwater quality and quantity, rates and charges including connection / impact fees, property values, industry and business, preservation of agriculture and agricultural land, and aesthetics.

1.8 Water and wastewater management to protect and sustain the local surface and groundwater supplies of San Benito County.

2. And it is the intent of the parties that development of the master plan be coordinated with and support the City of Hollister's efforts to:

2.1 Achieve and maintain compliance with Regional Water Quality Control Board Orders.

2.2 Remove the current building moratorium and/or lessen the restrictions on wastewater service for new business and industry through sewer capacity credits and transfers or similar mechanisms.

2.3 Secure and maintain the support of San Benito County and San Benito County Water District in achieving items 2.1 and 2.2.

3. Finally, the parties recognize that effective, sustainable management of water and related resources and provision of water and wastewater service will require:

3.1 An open and transparent process with complete, timely and accurate information exchange among the parties, their constituents, regulatory agencies and other local and regional interests, and

3.2 Revision of existing policies and practices and/or the development of new policies and practices and the commitment to good faith considerations of such requirements by the parties.

The Hollister Urban Area Water and Wastewater Master Plan shall be developed under the terms and conditions of a Memorandum of Understanding between the City of Hollister, San Benito County and San Benito County Water District which shall include provisions for including Sunnyslope County Water District.

SBCWD

October 21, 2004
Date

Attest:

Maria E. Alfaro

CITY OF HOLLISTER

10-18-04
Date

Attest:

Bri Johnson

SBC

Bob Cruz, Chair Board of Supervisors

Oct. 12, 2004
Date

Attest:
John R. Hodges, County Clerk

Sally Navarez

by: Sally Navarez, Asst. Clerk

PREVIOUS AND ONGOING STUDIES

- Groundwater Management for the San Benito County Part of the Gilroy – Hollister Groundwater Basin, Jones and Stokes / CH2M Hill, 1998.
- Groundwater Management Plan, Existing Conditions and Alternatives, Todd Engineers / EDAW, December 2001.
- Groundwater Management Plan Update for the San Benito County Portion of the Gilroy – Hollister Groundwater Basin, Kennedy/Jenks Consultants, July 2003.
- Programmatic EIR for the Groundwater Management Plan Update for the San Benito County Portion of Gilroy – Hollister Groundwater Basin, David J. Powers and Associates, May 2004.
- Groundwater Softening – Demineralization Feasibility Study for Sunnyslope County Water District, Kennedy/Jenks Consultants, July 2003.
- Groundwater Demineralization Study Technical Memorandum, SBCWD, MWH, August 2003.
- Reclaimed Water Feasibility Study, RMC, May 2005.
- Technical Memorandum using CALSIM II for Long-Term Planning for SBCWD, MWH, April 2004.
- Annual Groundwater Reports for the San Benito County Water District.
- Long-Term Wastewater Management Plan, City of Hollister, Hydroscience, In Progress.
- Environmental Impact Report, Long-Term Wastewater Management Plan, City of Hollister.
- Groundwater Model, Gus Yates, In Progress.
- Urban Water Management Plan, 2005 Update, City of Hollister, Kennedy/Jenks Consultants, In Progress.

EXHIBIT 7.4

AMENDMENT TO THE MEMORANDUM OF UNDERSTANDING, 2008

AMENDMENT TO

MEMORANDUM OF UNDERSTANDING

HOLLISTER URBAN AREA
WATER AND WASTEWATER MASTER PLAN

This AMENDMENT is made and entered into on February 4, 2008, by and among the SAN BENITO COUNTY WATER DISTRICT (SBCWD), the CITY OF HOLLISTER (CITY), SAN BENITO COUNTY (SBC) and the SUNNYSLOPE COUNTY WATER DISTRICT (SSCWD).

RECITALS

WHEREAS, SBCWD, CITY and SBC entered into the MEMORANDUM OF UNDERSTANDING, HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN (MOU), copy attached as EXHIBIT I; and

WHEREAS, Section 18 of that MOU provides for the incorporation of SSCWD as an additional party to the MOU; and

WHEREAS, the SBCWD, CITY, and SBC have paid for the development of the current draft MASTER PLAN and the services of a Program Manager, a portion of which are allocated to the SSCWD service areas.

NOW, THEREFORE, BE IT UNDERSTOOD AND AGREED by SBCWD, CITY, SBC and SSCWD as follows:

1. GENERAL. The foregoing recitals are true and current and incorporated herein.
2. MOU. The parties agreed to the terms and conditions of the MEMORANDUM OF UNDERSTANDING, HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN except as specifically modified or supplemented herein.
3. MOU SECTION 2.2.4. This section is modified to read: This provision shall not preclude satellite wastewater separation plants for the recovery of water for local recycling or the upgrading of the SSCWD Ridgemark Estates Wastewater Treatment Plants for local recycling, including but not limited to the Ridgemark Golf Course.
4. MOU SECTION 2.2.6. This section of the MOU is supplemented as follows: to achieve this continued and managed use of groundwater, groundwater supplies from the existing SSCWD wells will be made

available to SBCWD for water supply purposes ONLY if SSCWD consents and agrees to specific terms and conditions for that use.

5. MOU SECTION 2.2.8. This section of the MOU is replaced with the following: Marketing and distribution of recycled water outside the city limits of Hollister and outside the Sphere of Influence of SSCWD shall be the responsibility of SBCWD. Marketing and distribution of recycled water for M & I use inside the Sphere of Influence of SSCWD shall be the responsibility of SSCWD. The marketing and distribution of recycled water for agricultural use inside the Sphere of Influence of SSCWD shall be the responsibility of SBCWD.
6. MOU SECTION 6. BUDGET AND FINANCIAL COMMITMENT. This section of the MOU is modified to read: By the execution of this MOU, each Party agrees to the following cost share for the development and completion of the MASTER PLAN.

Party	Share(%)
SBCWD	45.0
CITY	39.3
SBC	5.9
SSCWD	9.8

In addition, SSCWD agrees to reimburse the CITY and SBC the amounts for the development of the draft MASTER PLAN and related work through June 30, 2007. The total amount expended by CITY, SBC and SBCWD is $ 835,623.57 . The CITY, SBC and SSCWD will compute their shares in accordance with the above percentages. The resulting share amounts shall be reimbursed directly to the Parties or paid to the FUND as a credit to the account of the Party as directed by the Party.

The cost of completing the MASTER PLAN beginning July 1, 2007 and continuing through 2008 is estimated to be $250,000.00. This amount will be reimbursed by all parties in accordance with MOU SECTION 7. PAYMENT.

SAN BENITO COUNTY WATER DISTRICT

David E. Pipal, District Counsel — 2/6/08 Date

Approved as to Form:

Robert M. Swanson, President — 2-6-08 Date

Shelley Giancola, Secretary — Date: 2/6/08

CITY OF HOLLISTER

Douglas A. Emerson — Date: 2.4.08

Approved as to Form:

Stephanie Atigh, City Attorney — Date: 2-4-08

Attest:

Geri Johnson, City Clerk — Date: Feb. 4 2008

SAN BENITO COUNTY

Jaime DeLaCruz, Chairman — Date: 2-5-08

Approved as to Form:

Shirley L. Murphy
Deputy County Counsel — Date: Jan. 29 2008

Attest:

Linda Churchill, Clerk of the Board — Date: 2/5/08

SUNNYSLOPE COUNTY WATER DISTRICT

Dawn V. Anderson — 2/13/08

Dawn V. Anderson, President — Date

Approved as to Form:

Lloyd W. Lowrey, Jr. — 2-14-08

Lloyd Lowrey, District Counsel — Date

Attest:

Bryan M. Yamaoka — 2-13-08

Bryan M. Yamaoka, Secretary — Date

RESOLUTION NO. 2008-12

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HOLLISTER APPROVING AND AUTHORIZING EXECUTION OF AMENDMENT TO THE MEMORANDUM OF UNDERSTANDING – HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN

WHEREAS, SBCWD, CITY and SBC entered into the MEMORANDUM OF UNDERSTANDING, HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN (MOU), copy attached as EXHIBIT I; and

WHEREAS, Section 18 of that MOU provides for the incorporation of SSCWD as an additional party to the MOU; and

WHEREAS, the SBCWD, CITY, and SBC have paid for the development of the current draft MASTER PLAN and the services of a Program Manager, a portion of which are allocated to the SSCWD service areas;

NOW, THEREFORE, BE IT RESOLVED THAT the Amendment to the Memorandum of Understanding, Hollister Urban Area Water and Wastewater Master Plan is hereby approved and the Mayor is authorized to execute the Memorandum of Understanding.

PASSED AND ADOPTED by the City Council of the City of Hollister at a regular meeting duly held on this 4th Day of February, 2008, by the following vote:

AYES: Council Members Valdivia, Pike, Johnson, Sanchez, and Mayor Emerson.
NOES: None.
ABSENT: None.

Douglas A. Emerson, Mayor

ATTEST:

Geri Johnson, City Clerk

APPROVED AS TO FORM:

Stephanie Atigh, City Attorney

DUPLICATE OF ORIGINAL
ON FILE IN THE
OFFICE OF THE CITY CLERK
CITY OF HOLLISTER

EXHIBIT 7.5

STATEMENT OF INTENT, 2011

DRAFT

(8/12/11)

HOLLISTER URBAN AREA
WATER SUPPLY AND TREATMENT AGREEMENT
STATEMENT OF INTENT

CITY OF HOLLISTER (CITY)

SAN BENITO COUNTY WATER DISTRICT (SBCWD)

SUNNYSLOPE COUNTY WATER DISTRICT (SSCWD)

Based upon prior agreements and studies, the above Parties have determined that it is in their mutual interest to complete a Water Supply and Treatment Agreement (Agreement) to implement the Hollister Urban Area Water and Wastewater Master Plan and the Coordinated Water Supply and Treatment Plan.

- This program will provide additional treated surface water to use conjunctively with existing groundwater supplies to improve the quality and reliability of drinking water.
- This program will also provide high quality recycled water from the Hollister Water Reclamation Plant and the Ridgemark Wastewater Treatment Plant. This high quality recycled water will be used for urban and agricultural irrigation to further enhance water supply reliability in San Benito County.

The purpose of this Statement of Intent is to establish the key principles developed to date and to be used in negotiating The Agreement.

Acceptance of this Statement of Intent will allow the Parties to authorize annual program funding and proceed with critical activities (i.e., the Lessalt Water Treatment Plant (WTP) environmental review and final design, the West Hills WTP environmental review, and operational modeling of the North County Groundwater Bank) to maintain the schedule while concluding negotiations and finalizing the Agreement.

The program includes facilities such as water treatment plants, pumping stations and pipelines, as well as services such as design, permitting, construction management, and commissioning. The Agreement will address the implementation, including financing, ownership and operation of the program components listed below; however, the Parties recognize that more detailed descriptions of these facilities will likely be developed during negotiations for the final Agreement.

- Lessalt WTP Upgrade, including land acquisition,
- West Hills WTP, including the raw water pump station and pipeline from the Hollister Conduit connection to the plant, as well as associated land acquisition and easements,
- Transmission pipeline from West Hills WTP to the distribution system, near the intersection of Nash Road and Line Street,
- Transmission pipeline in Fairview Road from the Lessalt WTP to the High Pressure Zone, and land acquisition as needed,
- Transmission pipeline from the Low Pressure Zone (near intersection of Nash Road and Line Street) to the Middle Pressure Zone (connection point is yet to be determined), and
- North County Groundwater Bank, including wells and associated infrastructure.

Collectively, these program components are referred to herein as the Water Supply and Treatment Program. Financing for these program components will include all costs from the date of acceptance of this Statement of Intent, for final design, environmental review, permitting, construction, and construction management services. To accommodate the schedule for critical program activities, costs incurred for these services prior to finalizing the Agreement will be accounted for in the final financing strategy.

1.0 TYPE OF AGREEMENT

1.1 As stated in Section 2.2.6 of the Memorandum of Understanding, the supply and treatment of surface water for wholesale delivery shall be the responsibility of the SBCWD.

1.2 The form of the proposed Agreement shall be a Wholesale Water Supply and Treatment Agreement.

1.3 SBCWD shall be the wholesale agency.

1.4 The City and SSCWD shall be the retail agencies.

1.5 Upon execution of the Agreement, the Parties shall form a three member Advisory Committee composed of one management representative from each agency. The function of the Advisory Committee shall be to facilitate communication and to coordinate response to mutual concerns regarding water supply, water quality, water treatment operation and maintenance, and related issues.

2.0 SERVICE AREA AND PLACE OF USE

2.1 The place of use is the Hollister Urban Area as defined in the Master Plan.

2.2 The retail service areas are the water service areas of the City and SSCWD.

2.3 Treated surface water from the Lessalt WTP shall be provided primarily to the High and Middle Pressure Zones.

2.4 Treated surface water from the West Hills WTP shall be provided primarily to the Low and Middle Pressure Zones.

3.0 WATER SUPPLY

3.1 The sources of supply to be delivered by SBCWD to the water treatment plants may include the following:

- Existing USBR CVP Contract
- Proposed North County Water Bank
- Out-of-Basin Banking (Semitropic and/or others)
- Imported water purchases
- Existing water rights from Pacheco Creek, Arroyo Dos Picachos, and Arroyo De Las Viboras
- Other potential sources

3.2 Surface water supplies shall be delivered by SBCWD at a weighted average cost to be established based upon results of operational modeling, SBCWD analysis of projected water supply reliability, operational needs at the Hollister Conduit, and costs.

3.3 In the event of shortage, available surface water supplies shall be allocated to the retailers in proportion to their respective annual production requirements subject to the special provisions of Subsection 3.4.

3.4 Should a certain area within the distribution system (e.g., SSCWD wastewater service area) require a higher reliability of treated surface water, the Parties agree that this increased degree of reliability requires a surcharge in the rates applied for the area.

4.0 WATER TREATMENT

4.1 The initial capacities of the surface water treatment plants shall be as follows:

- Lessalt WTP – 3 mgd

- West Hills WTP – 6 mgd

4.2 The treatment process for each surface water treatment plant will meet State and Federal drinking water regulations. The treatment process shall be as follows:

- Lessalt WTP – Microfiltration/Nanofiltration
- West Hills WTP – ActifloCarb/Gravity Media Filtration

4.3 The Parties have agreed that it is in their mutual interest to have a single owner for both water treatment plants to facilitate coordination of water supply, Hollister Conduit operations, water treatment plant production, and to derive benefits from financing to be provided through SBCWD. Therefore:

- Ownership of the Lessalt WTP shall be transferred from the City and SSCWD to the SBCWD;
- The West Hills WTP shall be owned by the SBCWD;
- The two parcels at the West Hills site may be reconfigured to accommodate plant layout at no cost to the Water Supply and Treatment Program;
- The City and SSCWD shall transfer ownership of the easterly parcel in West Hills to SBCWD for construction of the New West Hills WTP at no cost to the Water Supply and Treatment Program; and
- The City and SSCWD shall retain ownership of the westerly parcel for future use.

4.4 The Parties have agreed that it is in their mutual interest to have a single water treatment plant operator for both water treatment plants to provide equitable distribution of treated surface water, minimize staffing and reduce operation and maintenance (O&M) costs. Therefore:

- O&M of both water treatment plants shall be provided by SSCWD;

- The O&M services shall be provided by a separate contract to be developed between the SBCWD and SSCWD; and
- The initial term of the O&M services contract shall extend five years from acceptance of the West Hills WTP by the Department of Public Health.

5.0 FINANCING

5.1 SBCWD has proposed to provide $10 million investment for the Water Supply and Treatment Program.

5.2 The remaining Water Supply and Treatment Program cost shall be allocated to the City and SSCWD. The allocation of these costs between the City and SSCWD shall be determined through results of an independent analysis of benefits and costs.

5.3 SBCWD has proposed to provide financing for the City and SSCWD share of capital costs. The City and SSCWD have proposed to repay their share of debt service to SBCWD through rates.

5.4 The capital cost for water supply projects (e.g., North County Water Bank) will be shared by all SBCWD municipal and industrial water customers. The portion allocated to the City and SSCWD will be recovered through the water supply component of rates.

5.5 The Parties recognize the need to minimize rate impacts to retail water customers. The financing arrangements shall consider the use of capitalized interest and other approaches to minimize initial rate impacts.

It is proposed that the Water Supply and Treatment Agreement be negotiated based upon the contents of this Statement of Intent. The Parties recognize that time is of the essence and agree to negotiate in good faith to complete the Agreement in a timely manner.

EXHIBIT 7.6

DRAFT SYSTEM OPERATIONS TECHNICAL MEMORANDUM
DECEMBER 2012

SYSTEM OPERATIONS

Hollister Master Plan Implementation Program December 17, 2012

The purpose of this technical memorandum is to describe the operation of the Hollister Urban Area (HUA) water system with the addition of currently proposed capital improvements for 2015. Prior reports, technical memoranda, and modeling results have provided information regarding distribution of treated surface water, water quality, and system pressure. To assist with the ongoing development of institutional agreements and facilities design, proposed system operations have been summarized and documented with currently available information and the recommended facilities for 2015.

Background

The City of Hollister (City), San Benito County Water District (SBCWD), and the Sunnyslope County Water District (SSCWD) accepted the Water Supply and Treatment Agreement Statement of Intent (SOI) in September 2011. The SOI formalized the capacity of two surface water treatment plants, stating that the Lessalt WTP would be 3 mgd and the West Hills WTP would be 6 mgd. Subsequently, a preliminary financial analysis indicated that the capital and operation and maintenance (O&M) costs associated with the facilities, as described in the SOI, would result in significant rate increases.

In order to provide a program that is affordable, the facilities were reconsidered and an initial downscaled phase was proposed. With respect to the surface water treatments plants, it was determined that the Lessalt WTP would have a capacity of 2 mgd and the West Hills WTP would have an initial capacity of 4.5 mgd.

The water quality analysis documented in the *Water Distribution System Hydraulic Model Update and Analysis Memorandum*, dated February 6, 2012, recommended the following phasing strategy which forms the basis for the facilities described in this memorandum:

- Phase 1 facilities for the 2015 planning horizon
  - Lessalt WTP, 2 mgd
  - West Hills WTP, 4.5 mgd
  - Pipeline to High Zone
  - Rely on Existing Memorial Booster Pump Station (BPS) for Low to Middle Zone Transmission
- Phase 2 facilities for the 2020 planning horizon
  - West Hills WTP expansion from 4.5 mgd to 7 mgd
  - Cross-town pipeline from Low Zone to Middle Zone

This memorandum describes the anticipated operating conditions under Phase 1.

Existing System

This section briefly describes the existing system and current operations prior to the addition of new surface water treatment and transmission facilities.

Water Demand

Table 1 presents the existing water demands for each pressure zone. Due to the respective Waste Discharge Requirements (WDR) for the City and SSCWD wastewater treatment plants (WWTP), the water demands for the high zone are shown by their respective sewershed.

Table 1: Existing Water Demands by Pressure Zone

Pressure Zone	ADD (mgd)	Max Month (mgd)	Min Month (mgd)
Low	3.32	4.98	1.99
Middle	2.25	3.38	1.35
High – City WW[a]	0.10	0.15	0.06
High – Ridgemark WW[a]	0.69	1.04	0.41
Total	6.36	9.54	3.82

a. Demands for the High Zone have been separated based on the sewershed in which they are located, the City's sewershed (City WW) or the Ridgemark WWTP sewershed (Ridgemark WW).

Water Supply Sources

Water supplies for the HUA currently include local groundwater, imported surface water, and recycled water as described in the following subsections.

Groundwater

The HUA overlies the Gilroy-Hollister groundwater basin, designated as DWR Basin No. 3-3. The San Benito County portion of the basin is bounded by the Pajaro River in the north, the Diablo Range on the east and the Gabilan Range to the southwest. The basin covers 200 square miles of the Pajaro River watershed and is drained by its tributaries, most notably the San Benito River.

Both the City and SSCWD utilize groundwater wells for municipal and industrial (M&I) supply. In 2010, the City and SSCWD pumped a total of 4,177 AFY (2,194 AFY and 1,983 AFY respectively) from the groundwater basin for water supply in the HUA.

The groundwater has a high mineral content with some wells exceeding 1,200 mg/L total dissolved solids (TDS) compared to the California recommended secondary drinking water standard of 500 mg/L TDS.

Each water year, SBCWD oversees the preparation of an Annual Groundwater Report that describes current groundwater conditions. The report documents water supply sources and use, groundwater levels and storage, and management activities over the water year (October to September). Recommendations are provided with regard to the future water year imports, groundwater replenishment, groundwater pumping, and groundwater charges.

Surface Water

The SBCWD purchases imported Central Valley Project (CVP) surface water from the United States Bureau of Reclamation (USBR). SBCWD's contract with the USBR is for a total supply of 43,800 acre-feet per year (AFY), of which 35,550 AFY is for agricultural use and 8,250 AFY is for M&I use. The current contract extends until the year 2027 and may be renewed thereafter.

CVP water is imported through the Sacramento River-San Joaquin River Delta to San Luis Reservoir and conveyed through the Hollister Conduit. The Hollister Conduit is a pressurized pipeline consisting of 60-inch and 42-inch diameter pipeline. The Hollister Conduit has a design capacity of 83 cfs and extends approximately 19.5 miles from the bifurcation with the Santa Clara Conduit to the terminus at San Justo Reservoir. San Justo Reservoir is located south of the City of Hollister and has a storage capacity of 10,300 af.

Imported water is delivered to agricultural, municipal, and industrial customers through 120 miles of pressurized laterals and has also historically been released at controlled rates to local creeks and the San Benito River. Releases for groundwater recharge have diminished in recent years due to the widespread recovery of groundwater levels. Zebra mussels, an invasive species, were discovered in San Justo reservoir in January 2008. The SBCWD is working with the USBR, the Department of Fish and Game, the County and Santa Clara Valley Water District (SCVWD) to mitigate the zebra mussels.

As a result of over-commitments of CVP supplies and supply limitations imposed by environmental constraints, the reliability of imported CVP supplies has been reduced. The USBR utilizes a Shortage Policy to allocate supplies in below normal, dry, and critical years. For M&I supply, SBCWD's historic use has been set at 5,556 af/yr.

On an annual basis, the SBCWD allocates CVP supplies to local customer accounts based upon water supply availability, including CVP supply plus any available carry-over storage. The current total entitlement for all accounts is 37,955 AFY (28,192 AFY irrigation and 9,763 AFY M&I).

During years in which the SBCWD has a larger available supply of agricultural water than that needed by agricultural users, the balance of the available supply can be converted for M&I use; however, the cost of converted water would be charged at M&I rates.

Recycled Water

In addition to the ground and surface water supplies described above, the City also produces approximately 2,350 AFY of recycled water at its Water Reclamation Facility (WRF). A portion of this recycled water is used for irrigation at Riverside Park on the southwest side of the City and at spray fields at the Hollister municipal airport. The remainder is disposed of using percolation ponds at the WRF.

Groundwater Wells

The City has six groundwater wells in the HUA, Wells 1 through 6. Well No. 1 is inactive due to the presence of high levels of nitrate. Well No. 3 recently collapsed and is no longer in service; however the City has plans to replace this well as soon as possible. Wells No. 3, 4 and 5 are equipped with standby power. The City also has portable generators to supply emergency power the other active wells.

A summary of well pressure ranges and pumping rates is presented in Table 2. Operation of City Wells No. 2, 4 and 5 are controlled by the Park Hill Reservoir water levels. These wells are located in the low pressure zone.

Table 2: City of Hollister Wells

City of Hollister Wells	Well Pressure Ranges (psi)		Maximum Pumping Rate (gpm)
	Minimum	Maximum	
Well No. 1 San Felipe (Inactive)	50	90	--
Well No. 2 Bundeson	38	62	1,425
Well No. 3 Fallon (Inactive)	45	98	--
Well No. 4 South	50	85	1,670
Well No. 5 Nash	40	65	1,825
Well No. 6 Airline	75	110	--

psi – pounds per square inch

gpm – gallons per minute

SSCWD has a total of five groundwater wells. A summary of well pressure ranges and pumping rates is presented in Table 3. Operation of SSCWD Wells No. 2, 7 and 11 are controlled by the Fairview Reservoir water levels. These wells are located in the middle pressure zone. Operation of SSCWD Wells No. 5 and 8 are controlled by the Ridgemark Reservoir water levels. These wells are located in the high pressure zone.

Table 3: SSCWD Wells

SSCWD Wells	Well Pressure Ranges (psi)		Maximum Pumping Rate (gpm)
	Minimum	Maximum	
Well No. 2 Southside	85	99	1095
Well No. 5 Ridgemark	83	94	900
Well No. 7 Enterprise	80	93	700
Well No. 8 Ridgemark	63	76	1065
Well No. 11 Lico	unk	unk	1000

Lessalt Water Treatment Plant

The Lessalt Water Treatment Plant (WTP), a jointly-owned facility between the City and the SSCWD, was placed into operation in January 2003. The plant was designed to treat imported CVP water using microfiltration and chlorine disinfection. The treated water is distributed to both City and SSCWD customers.

The plant was designed with a rated capacity of 3.0 mgd capable of treating 3,360 ac-ft of imported CVP supply annually. However, historically, the plant has produced less than 1.6 mgd on an annual average basis.

Distribution System

Together, the City and SSCWD have over 128 miles of water mains for transmission and distribution. The distribution system is made up of three pressure zone, as shown in the hydraulic profile presented in Figure 1.

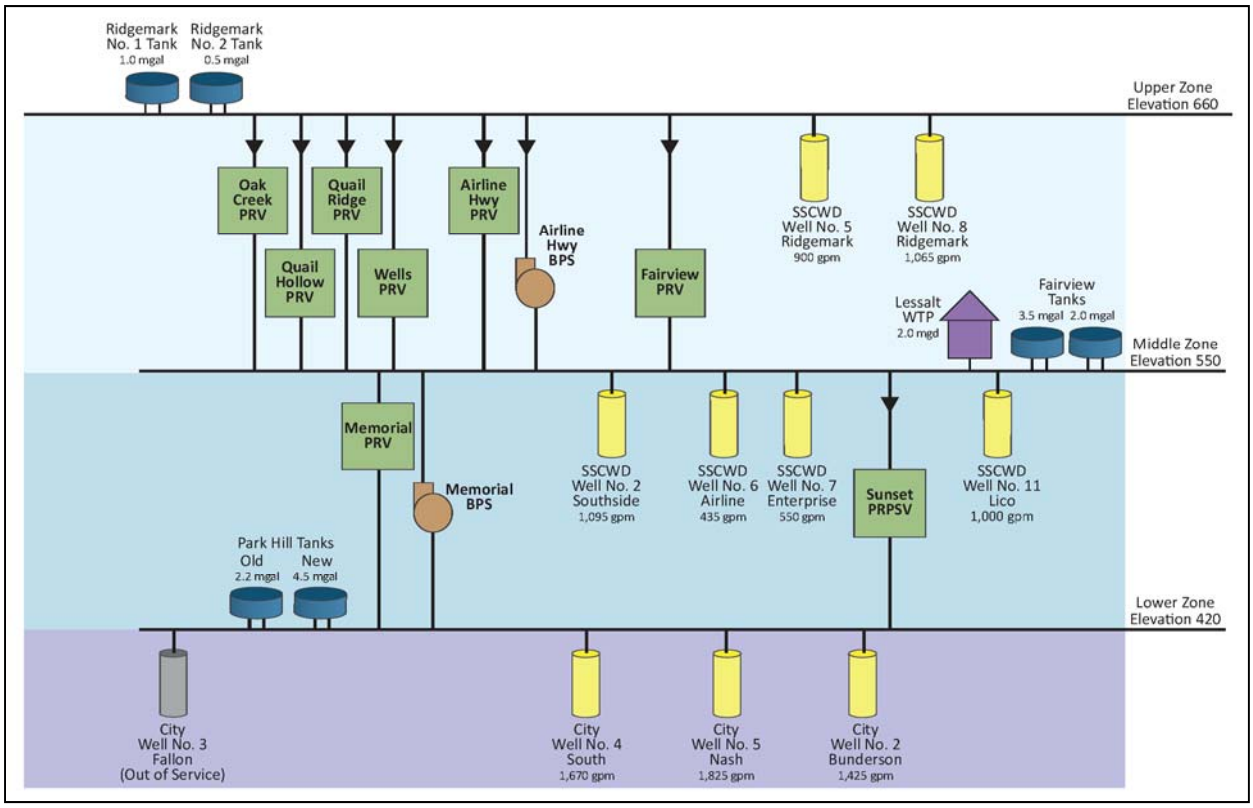


Figure 1. Existing Water Distribution System Hydraulic Profile

The City and SSCWD maintain a close interrelationship due to service area proximity and configuration of the low and middle pressure zones. There are three connection points within the SSCWD system that are tied to the City's water distribution system. The following connections allow the transfer of metered water flows between the two systems:

- Intersection of Hillcrest Road and Memorial Drive
- Intersection of Sunnyslope Road and Memorial Drive
- Intersection of Sunset Drive and Memorial Drive

Water can be transferred in either direction at the Memorial Booster Pump Station located on Hillcrest Road. However, water can only be transferred from the SSCWD to the City's system at the other two locations.

The City has four storage reservoirs for a total capacity of 9.2 million gallons (MG) as shown in Table 4. SSCWD has three reservoirs for a total capacity of 5 MG. The Fairview Road Tanks consist of two tanks with a total capacity of 5.5 MG. The facility is shared between the City and SSCWD as shown in Table 4.

Table 4: System Storage Reservoirs

Storage Reservoirs	Capacity (MG)	Overflow Elevation (ft above MSL)	Base Elevation (ft above MSL)	Diameter (feet)
City Storage Reservoirs				
Fairview Road Tanks	2.0[(a)]	550	515	100
Park Hill (Old)	2.2	425	383	95
Park Hill (New)	4.5	460	383	135
Total	8.2			
SSCWD Storage Reservoirs				
Fairview Road Tanks	3.5[(a)]	550	515	100
Ridgemark No. 1	1.0	660	625	70
Ridgemark No. 2	0.5	460	625	45
Total	2.5			

(a) Fairview Road Tanks have a total capacity of 5.5 MG with 2 MG allocated to the City and 3.5 MG allocated to SSCWD.

Water Quality

Although the imported CVP supply has relatively low levels of TDS and hardness, the average water quality in the distribution system is heavily impacted by the poor groundwater quality. As previously described, the local groundwater wells have high mineral content and high TDS. Table 5 summarizes the existing source water quality.

Table 5: Existing Source Water Quality

Source	Hardness (mg/L)	TDS (mg/L)
CVP Surface Water	100 - 120	290 - 310
Municipal Groundwater	340 - 420	550 - 1200

Table 6 summarizes the average water quality of each pressure zone and of the system as a whole, based upon analyses conducted using a hydraulic and water quality model of the distribution system under existing conditions.

Table 6: Existing System Water Quality

Area of System	Hardness (mg/L)		TDS (mg/L)	
	ADD	MMD	ADD	MMD
High, Ridgemark WW	400	400	800	800
High, City WW	400	400	800	800
High Zone, Combined	400	400	800	800
Middle Zone	334	348	637	656
Low Zone	324	354	667	716
Total System	337	356	669	699

Goals of Water System Improvements

This section describes the level of service goals presented in the MOU, Master Plan, and Coordinated Plan relative to water quality, reliability, and distribution of treated surface water.

Reliability of Supply

System reliability goals for the overall system are described below. In addition, the reliability goals with respect to source water and water quality for the high zone are also described.

Overall System

The agreed upon levels of system reliability for annual supply, long-term drought and short-term power outages are described below.

- Annual Supply
  - 4760 AFY surface water annual supply and balance from existing municipal wells
  - ADD, MDD, and Planned Outages (Refer to Attachment A - Level of Service Table)
- Long-Term Drought Reliability
  - Year 1, 100% of surface water supply
  - Year 2, 75% of surface water supply
  - Year 3, 75% of surface water supply
  - Year 4, 50% of surface water supply
  - Year 5, 50% of surface water supply
- Short-Term Power Outages
  - Connections for temporary standby generators will be provided at each WTP and the West Hills raw water pump station
  - Acceptable duration of outage (Refer to Attachment A - Level of Service Table)

High Zone

The Waste Discharge Requirements (WDR) for the Ridgemark wastewater treatment plant (WWTP) requires a reduction in salinity in the treated water effluent (refer to Table 7). In order to achieve these lower salinity levels, connections to the domestic water system within

the boundary of the Ridgemark WWTP sewershed will require a reliable supply of surface water, such that homeowners can remove water softeners which are the primary source of salt in the wastewater influent to the Ridgemark WWTP.

Based on the WDR salinity requirements, it is estimated that approximately 88% of the water supply to the Ridgemark area must be surface water.

Water Quality

Section 2.2 of the Memorandum of Understanding (MOU) defined the following water quality objectives for the potable and recycled water systems:

- 2.2.2 Drinking water shall have a TDS concentration of not greater than 500 mg/L and a hardness of not greater than 120 mg/L (Calcium Carbonate).
- 2.2.3 Recycled wastewater shall have a target TDS of 500 mg/L and shall not exceed 700 mg/L TDS.

The proposed program elements for Phase 1 implementation will not fully achieve these objectives for the HUA's existing customers; however, the Phase 1 facilities will provide a significant improvement in water quality and represent a first step toward achieving these objectives.

The system-wide water quality objectives for the Phase 1 facilities are described in the following subsections.

Total Dissolved Solids and Hardness

Due to the scaled down size of the Phase 1 facilities, the hardness objective for the potable water system was relaxed to approximately 225 mg/L (not including the Ridgemark area, as previously described) and the goal for TDS was maintained at 500 mg/L.

Wastewater Effluent

The City's Water Reclamation Facility (WRF) and SSCWD's Ridgemark WWTP have requirements within their Master Reclamation Requirements (MRR) and WDR, respectively, to reduce salinity, including TDS, chloride and sodium in their treated effluent. The requirements for each plant area summarized in Table 7.

Table 7: Wastewater Effluent Requirements

Parameter	City WRF[(a)]	Ridgemark WWTP[(b)]
TDS	1200 mg/L	1200 mg/L
Sodium	200 mg/L	200 mg/L
Chloride	150 mg/L	200 mg/L

(a) Information from MRR Order No. 2008-0069 for the City's WRF. Limits are effective after January 2015. Compliance is based on an annual average, determined on a rolling 12-month basis.

(b) Information from WDR Order No. R3-2004-0065 for the Ridgemark WWTP. Limits were effective January 2010. Compliance is based on a 30-day average.

Recycled Water

Since the MOU was originally signed in 2004, additional work has been done regarding the quality of recycled water required for agricultural irrigation in the proposed initial use area in the Wright Road and Buena Vista area. The initial use area is currently reliant on groundwater with TDS in the range of 1,000 mg/L to 1,400 mg/L. Thus, many farmers have expressed interest in recycled water if the TDS is the range of 700 to 1,000 mg/L.

Treated Water Storage

Based on a recent analysis, documented in a memo dated June 21, 2012, no new treated water storage is required until the 2020 timeframe. Approximately 11.5 million gallons (MG) of treated water storage will be required in 2015. The existing storage capacity within the system is sufficient for the 2015 timeframe.

Proposed Facilities and Improvements

This section describes the proposed improvements for Phase 1, including the upgrade at the Lessalt WTP, the new West Hills WTP, and upgrades to the treated water system. The location of the new facilities is illustrated in Figure 2 and a hydraulic profile with the new facilities is shown in Figure 3.

Lessalt Water Treatment Plant

The Lessalt WTP will have a capacity of 2 mgd. The Lessalt WTP will be upgraded to remove additional organic material to meet the Stage 2 Disinfection Byproducts Rule (Stage 2 DBP Rule), process improvements to treat iron and manganese, and hydraulic improvements. The hydraulic improvements will include new raw water connections both upstream and downstream of the 9L Pump Station to take advantage of those times when pressure in the Hollister Conduit is sufficient to meet pressure requirements. In addition, a new treated water pump station will serve the middle pressure zone and will include dedicated pumps to serve to the high pressure zone.

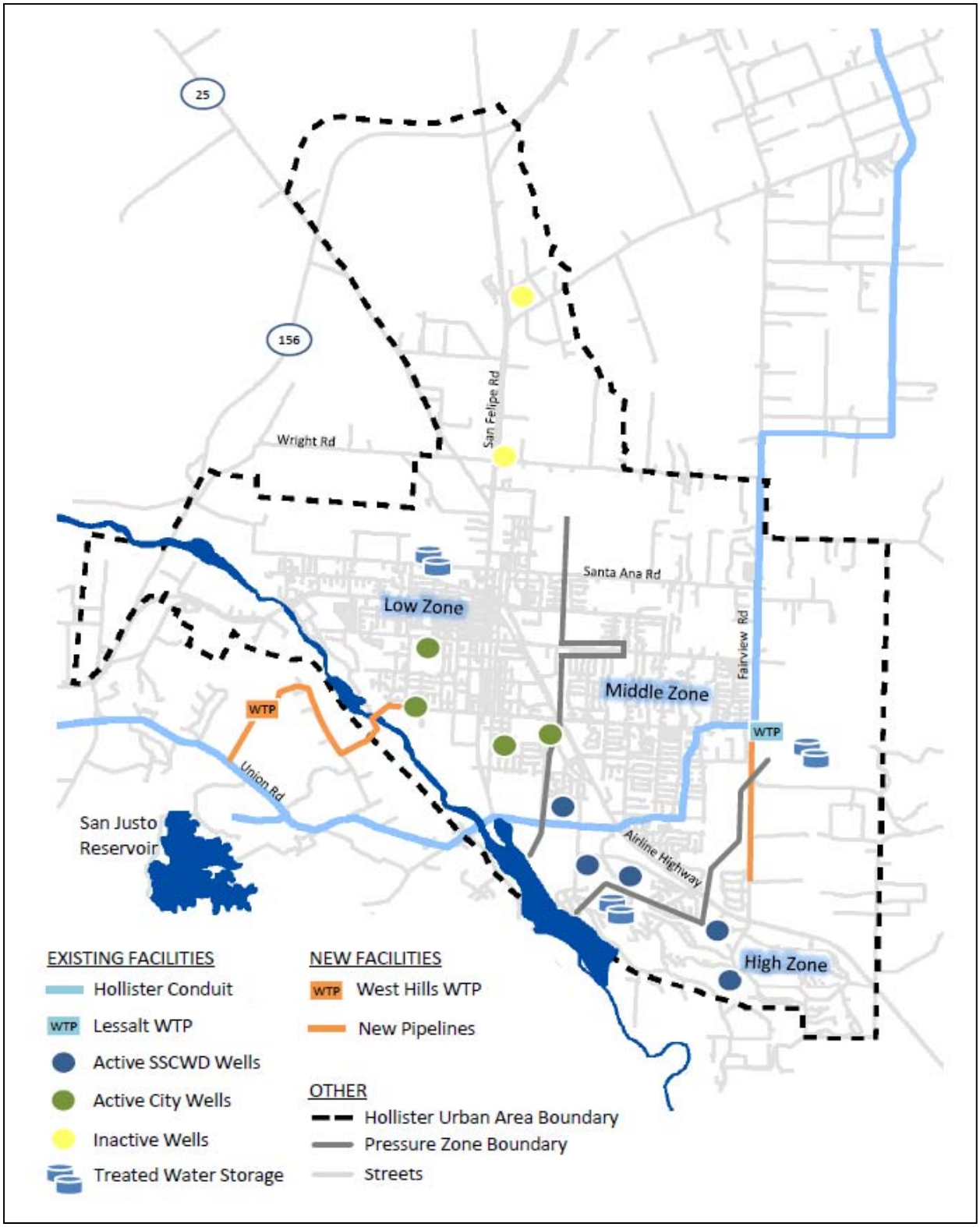


Figure 2: Phase 1 Facilities

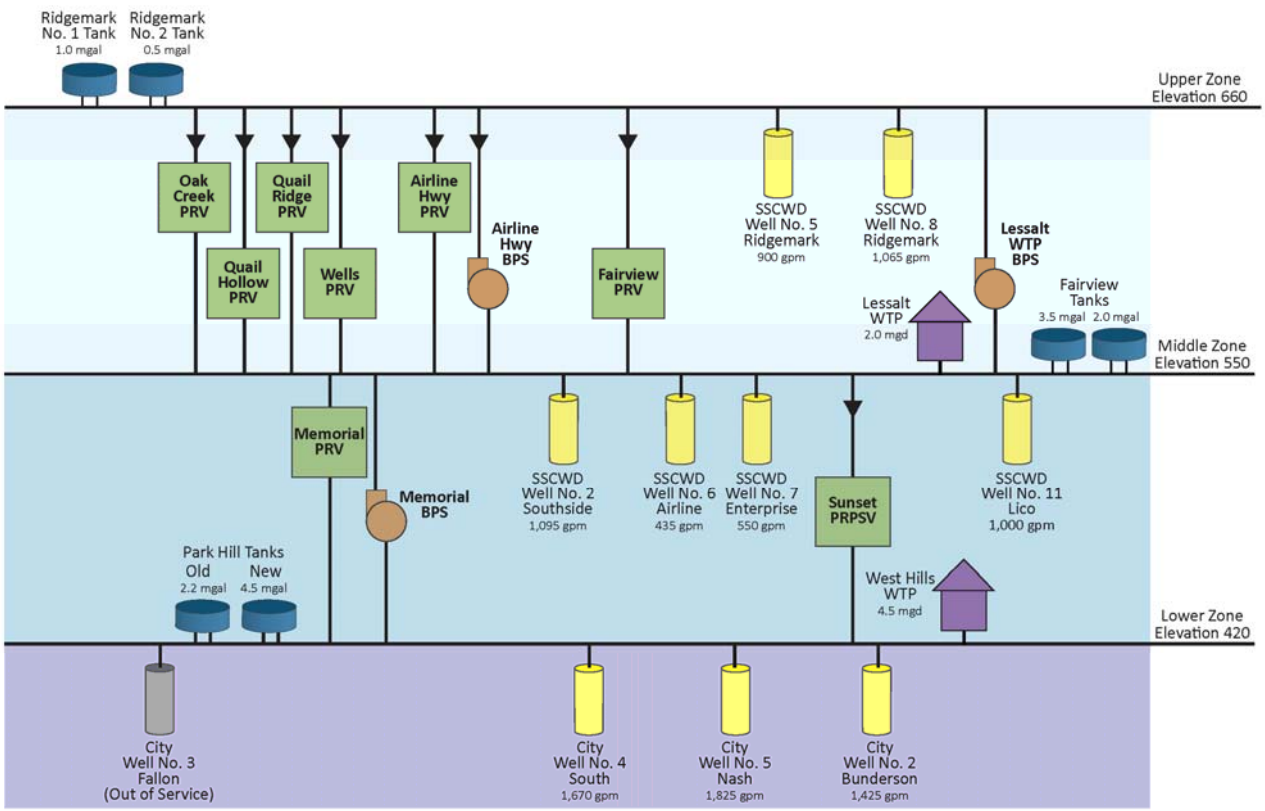


Figure 3. Phase 1 Water Distribution System Hydraulic Profile

West Hills Water Treatment Plant

The West Hills WTP and associated transmission facilities will be designed for an ultimate capacity of 9 mgd. The Phase 1 treatment and raw water pumping facilities will be constructed with an initial capacity of 4.5 mgd. The treatment objectives for the West Hills WTP include:

- Reliably meet all applicable drinking water regulations, in particular the Stage 2 Disinfectants and Disinfection Byproducts (D/DBP) Rule.
- Remove total organic carbon (TOC) from the source water such that byproducts formed during disinfection within the 14 day distribution system water age remain within the regulated limits.
- Provide pretreatment to reduce iron and manganese in the San Justo Reservoir source water.

The West Hills WTP process and facilities include a raw water pump station, raw water conveyance and treated water transmission pipelines, pre-oxidation for iron and manganese removal, ballasted flocculation clarification pretreatment with enhanced organics removal, conventional gravity filtration, chemical feed and storage, treated water storage tank, and solids handling systems. Water will be pumped from the Hollister Conduit to the plant. Once on-site, the primary treatment processes, storage tank, and the distribution system will operate by gravity. The treated water pipeline will connect to the existing distribution system near the intersection of Line Street and Nash Road.

Distribution System

As part of the Phase 1 improvements, a new transmission pipeline will be constructed from the Lessalt WTP to the high pressure zone, connecting near the intersection of Fairview Road and Maranatha Drive at the Fairvew PRV. No new distribution pipelines or storage tanks are included in Phase 1.

Flow meters will be provided at the main connections points from the Lessalt WTP and the West Hills WTP in order to measure the surface water deliveries to each pressure zone. In addition, flow meters capable of measuring conductivity (i.e., magnetic flow meters) are already installed at the connection points between the middle and low pressure zones.

SCADA System

In the future, the main control system will be located at the operations center at the West Hills WTP, which will include controls for both the West Hills and the Lessalt WTPs. In addition, operations information for the City and SSCWD wells will also be accessible at the operations system such that the status of entire water supply system is available in real time.

Proposed Operations

This section describes the currently proposed operation of the system following completion of new facilities, including the operation of the treatment plants and distribution facilities.

Water Supply

Approximately 4,760 AFY of surface water from existing CVP supply and spot market purchases will be needed to operate the Lessalt WTP and West Hills WTP as described later. The remainder of the demand, approximately 2,370 AFY, will be supplied with ground water from existing municipal wells. The average monthly production from each water supply source is illustrated in Figure 4.

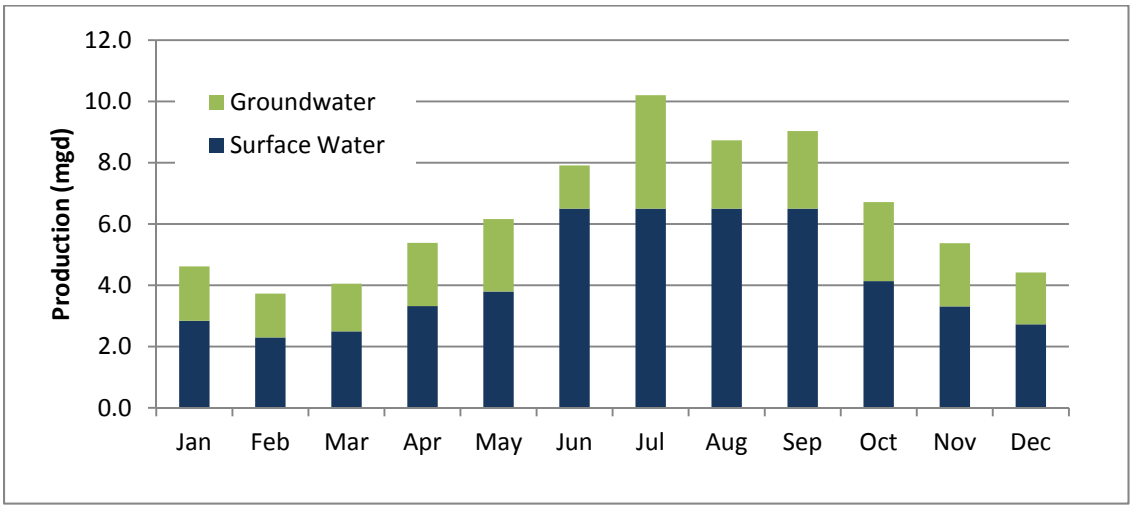


Figure 4: Annual Water Supply

Delivery of surface water to the respective water treatment plants is dependant on the Hollister Conduit and San Justo Reservoir, which are described below.

San Justo Reservoir

The San Justo Reservoir provides off-stream storage for operation of the Hollister Conduit and the SBCWD untreated water distribution system. A summary of the reservoir operations and the role of the reservoir in the operation of the M&I water system, including both supply reliability and water quality, is provided in the *San Justo Reservoir Operations Technical Memorandum*, included in Attachment B.

Hollister Conduit

As previously described, the Hollister Conduit is a pressurized pipeline that delivers untreated surface water for both agricultural and M&I use in the region. Surface water in the conduit can come from both San Luis Reservoir and from San Justo Reservoir. With respect to the water treatment plants, their location, upstream or downstream of San Justo Reservoir, impacts the frequency with which it will receive water from each source.

The Lessalt WTP is located upstream from the San Justo Reservoir, and upstream of the Flow 2 control station. As a result, the Lessalt WTP will receive water more frequently from San Luis Reservoir. However, there will be periods when supply is provided from San Justo Reservoir, and at least a minimum of two weeks in the fall when Lessalt WTP will receive hypoxic water from San Justo Reservoir with elevated levels of iron and manganese.

The Lessalt WTP will continue to rely on SBCWD's 9L pump station for its raw water supply. Approximately 130 feet of head is required for the new treatment process at the Lessalt WTP.

The turnout from the Hollister Conduit for the West Hills WTP will be located downstream of San Justo Reservoir in Union Road. Thus, it is expected that the source water supply to the West Hills WTP will vary based on whether San Justo Reservoir is in a fill or draw period. Further, it is expected that the supply source will change rapidly (e.g., daily) during the peak agricultural irrigation demand period.

Lessalt Water Treatment Plant

The following subsections describe the future operations of the Lessalt WTP.

Production Rates

The Lessalt WTP will generally operate as a baseload plant with a production of 2 mgd. However, during low winter demand periods, the plant production may be reduced to approximately 1.3 mgd to meet surface water demands in the high and middle pressure zones. Daily peaks of up to 2.5 mgd may be produced for short durations (e.g., days) during high demand periods

Staffing Requirements

The upgraded Lessalt WTP will require a T-3 Grade Operator certification. It is expected that staffing levels will remain the same as existing (40 hours/week) until the West Hills WTP is in operation. Once the West Hills WTP is online, operations staff will be based at that site. An estimated 4-5 operators are needed to operate both plants (8-10 hours per day); Lessalt will require approximately 40 hours per week.

Operators from the West Hills site will be dispatched to conduct regular (e.g., once per day) checks at the Lessalt WTP and to collect samples and verify proper operation.

Delivery of treated water

Water from the Lessalt WTP will be measured at the treated water pump station at the plant. Water pumped to the high pressure zone will be measured separately from that delivered to the middle pressure zone.

West Hills Water Treatment Plant

The following subsections described the future operations of the West Hills WTP.

Production Rates

The West Hills WTP will generally operate as a peaking plant with an annual average production rate of 2.25 mgd and a peak production rate of 4.5 mgd. During low winter demand periods the plant production may be reduced to 1.3 mgd to meet surface water demands in the low pressure zone.

Staffing Requirements

The new West Hills WTP will require a T-3 Grade Operator certification. Operations staff will be based at the West Hills WTP. An estimated 4-5 operators are needed to operate both the West Hills WTP and the Lessalt WTP (8-10 hours per day); the West Hills WTP will require approximately 95 hours per week.

Delivery of Treated Water

Water produced at the West Hills WTP will be delivered by gravity to the distribution system. Treated water deliveries will be measured at a meter located before the connection near Line Street and Nash Road.

Distribution System

The following subsections describe the future operations of the distribution system and the existing municipal wells, as well as the expected water quality in the distribution system.

Treated Water Distribution

The projected demands for the HUA are not expected to change significantly between now and 2015. The projected demands for 2015 are summarized by pressure zone in Table 8.

Table 8: 2015 Water Demands by Pressure Zone

Pressure Zone	ADD (mgd)	Max Month (mgd)	Min Month (mgd)
Low	3.32	4.98	1.99
Middle	2.25	3.38	1.35
High – City WW[a]	0.10	0.15	0.06
High – Ridgemark WW[a]	0.69	1.04	0.41
Total	6.36	9.54	3.82

a. Demands for the High Zone have been separated based on the sewershed in which they are located, the City's sewershed (City WW) or the Ridgemark WWTP sewershed (Ridgemark WW).

In order to facilitate the distribution of high quality surface water throughout the distribution system, the surface water supply will be allocated by pressure zone, as shown in **Error! Reference source not found.**. Both average day and maximum month allocations are shown.

The allocation will rely on the Memorial BPS to move water from the West Hill WTP from the low zone to the middle zone. Since the surface water will be blended with groundwater in the low zone, the quantity of water pumped from the low to the middle zone will necessarily be more than that shown in **Error! Reference source not found.**. Thus, it will be important, as previously noted, to use magnetic flow meters such that the volume of surface water and ground water, respectively, pumped to the middle zone can be quantified.

In addition, the allocation of surface water relies on the dedicated pipeline and pump station from the Lessalt WTP to the high zone in order to improve water quality in that zone to help meet the Ridgemark WWTP WDR.

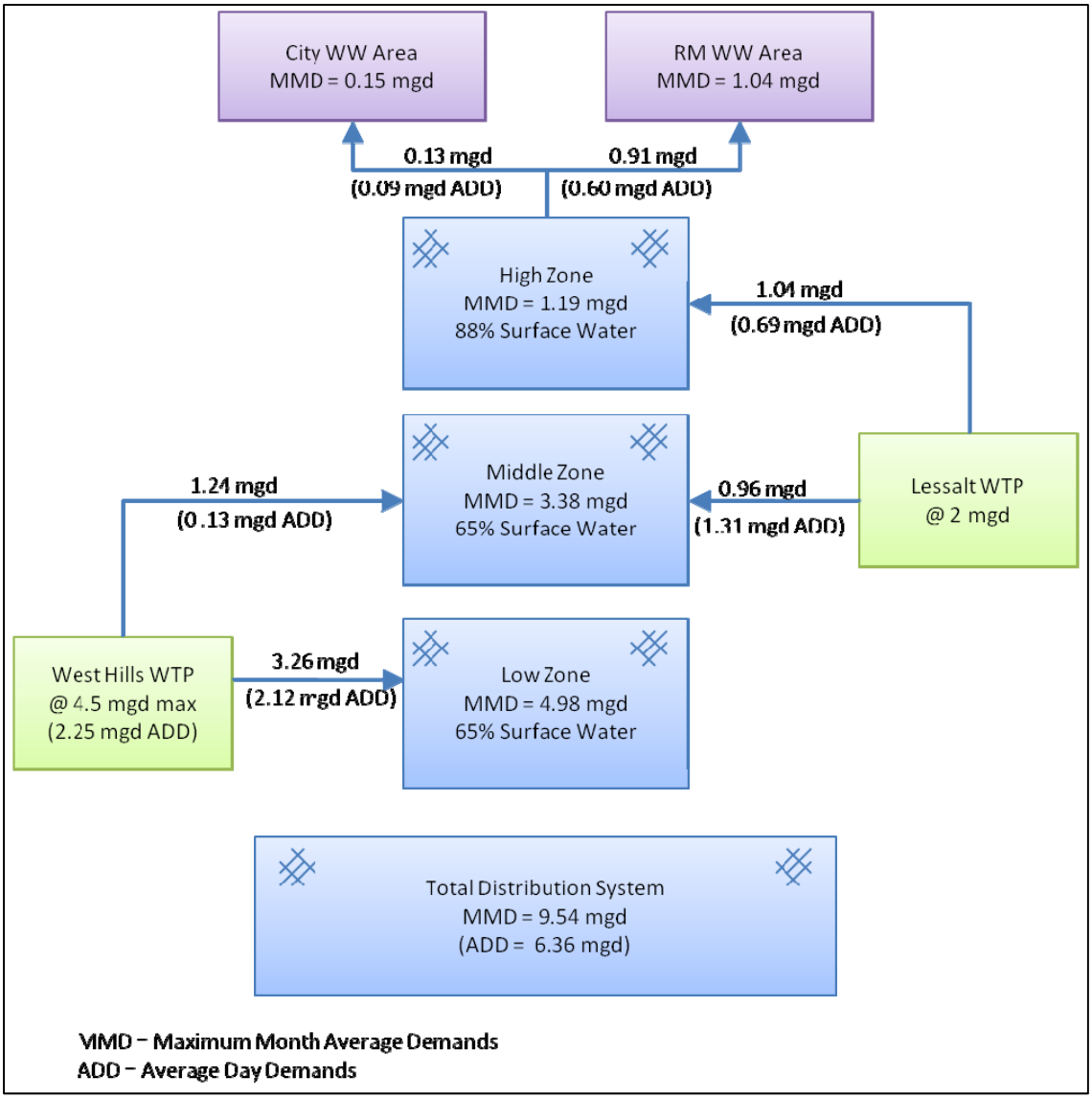


Figure 5: Surface Water Allocation by Pressure Zone, Phase 1

Wells

With the introduction of the West Hills WTP as a source of supply for both the low zone and the middle zone, the distribution system will be more integrated. As a result, the operation of the municipal wells will need to be coordinated to facilitate the movement of surface water between zones as described in Figure 5.

The City will continue to operate its wells and similarly, SSCWD will continue to operate its wells; however, City staff will coordinate with SSCWD regularly (e.g., weekly) regarding well production requirements.

Water Quality

The water quality in the distribution with the Phase 1 facilities in place and based on the allocation of surface water described above, is summarized Table 9. These results represent

general averages over a pressure zone or the whole system. It is understood that localized areas may have higher or lower hardness and TDS concentrations, as illustrated in Figure 6 and in Figure 7, respectively.

Table 9. Existing System Water Quality Results

Area of System	Hardness Concentration (mg/L)		TDS Concentration (mg/L)	
	ADD	MMD	ADD	MMD
High, Ridgemark WW[(a)]	165	167	407	412
High, City WW[(a)]	110	110	300	300
High Zone, Average	153	154	384	387
Middle Zone	255	268	519	522
Low Zone	218	202	487	473
System-wide Average	227	226	490	485

(a) Due to the Ridgemark WWTP WDR requirements, a greater portion of surface water will be delivered to the high pressure zone, resulting in better water quality than the middle and low pressure zones.

Water quality (i.e., TDS and hardness concentration) will be monitored at various locations throughout the system to confirm the distribution of high quality surface water and to help support decision making to improve its distribution to provide a more uniform water quality. Water quality will also be monitored at the City and SSCWD WWTP, respectively, to confirm the respective MRR and WDR requirements are achieved.

Metering and SCADA

Surface water exchanges between pressure zones will be metered by the City and SSCWD at the existing system interties. Metering will include a measure of conductivity, correlated to the amount of surface water transferred between the respective zones. The City and SSCWD will self report the amount of surface water transferred between zones to SBCWD for billing purposes. Sunnyslope and the City agree to monitor and bill each other directly for groundwater exchanged between the two agencies.

Well SCADA controls will continue to be located at the City and SSCWD facilities, respectively; however, the operations center at the West Hills WTP will have real time monitoring capability for the status of well operations.

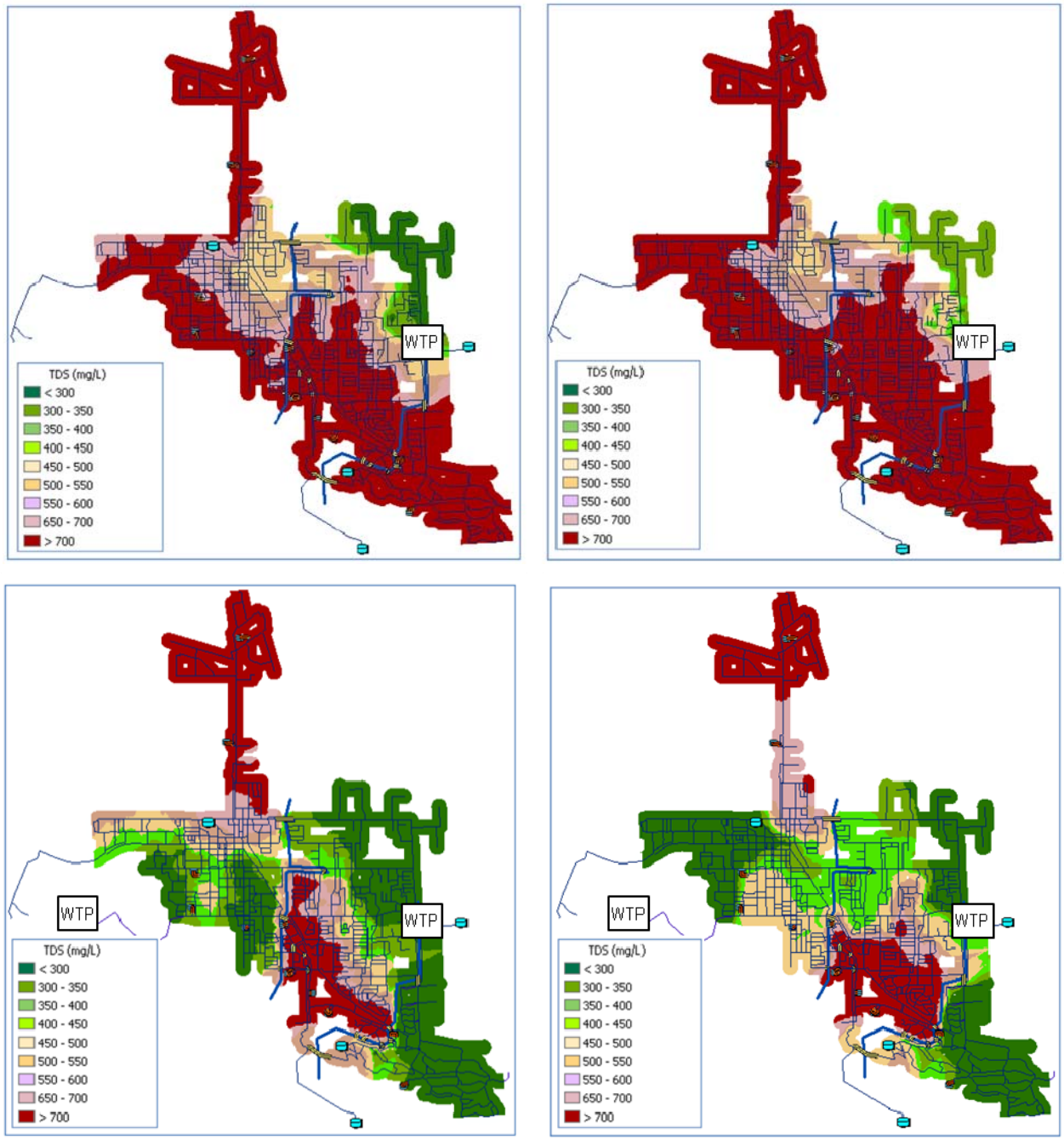


Figure 6: Existing (top) and Phase 1 (bottom) Water Quality, Hardness for Average Day (left) and Maximum Month (right)

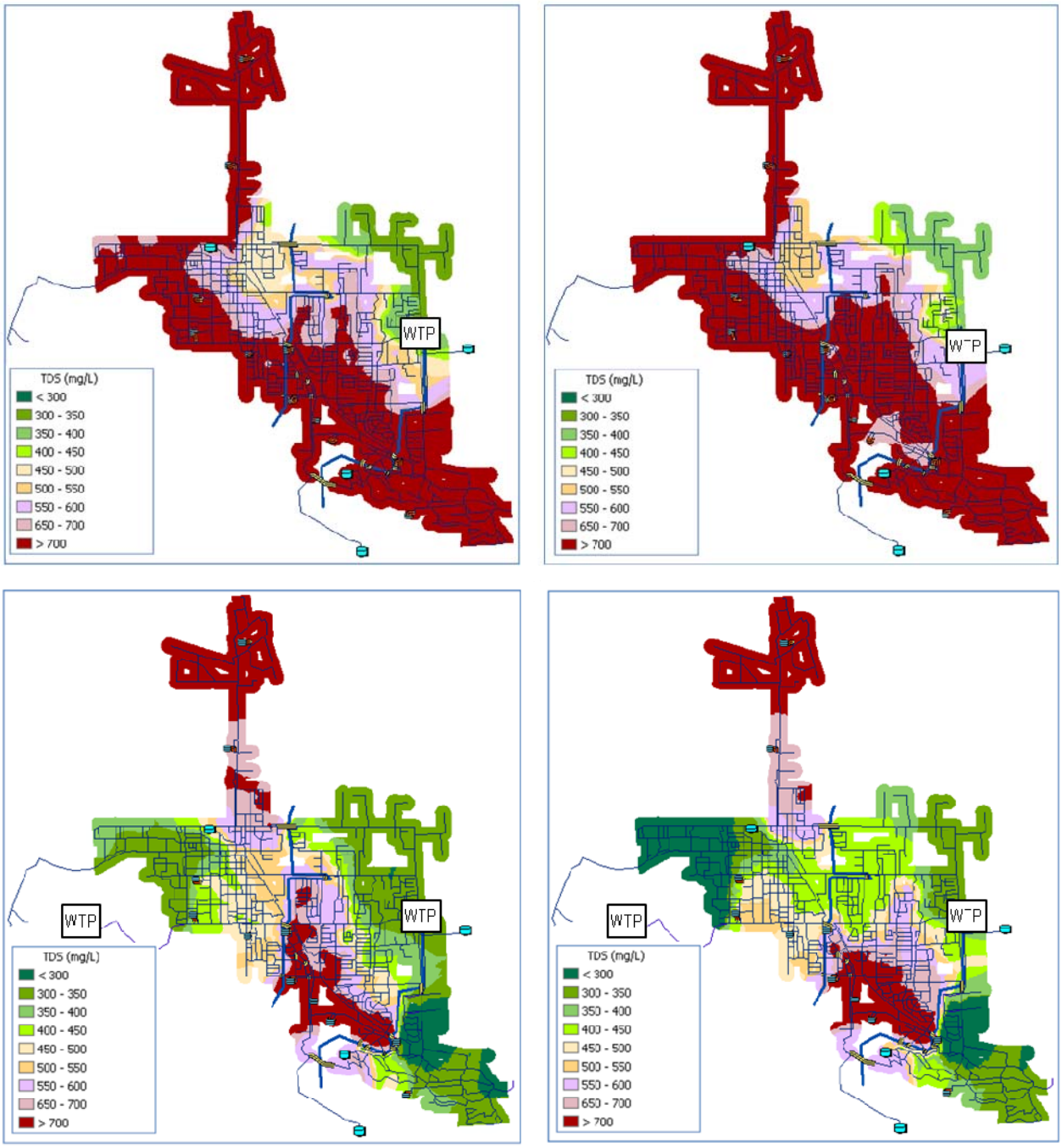


Figure 7: Existing (top) and Phase 1 (bottom) Water Quality, TDS for Average Day (left) and Maximum Month (right)

Attachment A – Level of Service

Attachment B

San Justo Reservoir Operations Technical Memorandum

EXHIBIT 7.7

COORDINATED WATER SUPPLY AND TREATMENT PLAN, 2010

Hollister Urban Area
Master Plan Implementation Program

Coordinated Water Supply and Treatment Plan

November 16, 2009

(Revised January 2010)

Prepared under the responsible charge of

Robert H. Ellis
C 24676

2121 N. California Blvd. Suite 475
Walnut Creek, CA 94596

2290 North First St. Suite 212
San Jose, CA 95131

January 2010 Revisions

Several minor revisions were made to the original report to respond to comments, correct data, and clarify recommendations. The revisions made are identified below:

- Page ES-2: Section ES-3 retitled "Surface Water Treatment" and divided into two subsections to provide more detail on a new second water treatment plant.
- Page ES-5: On Figure ES-1, added "Investigate Acquisition of Additional Surface Water Supplies."
- Page ES-7: Added "Initiate CEQA on Master Plan and initial water supply and treatment projects."
- Page 1-4: Clarified description of plan objective in Section 1.2.
- Page 2-4: Added new Section 2.3 Historical Imported Water Supplies. This section relocated from Section 3.2 in original report. Change SBCWD historical M&I usage from 6,966 to 4,026 ac-ft. Change 60 percent of historical use from 4,180 ac-ft to 2,416 ac-ft.
- Page 3-3: In Section 3.3.1, change Hollister Conduit to Subsystem 9 Pump Station.
- Page 3-4: In Section 3.4, change CVP M&I entitlement to allocation. Add clarification on availability of CVP M&I supply.
- Page 5-1: Section 5.1 retitled "Surface Water Treatment" and divided into two subsections to provide more detail on a new second water treatment plant.
- Page 5-6: On Figure 5-1, added "Investigate Acquisition of Additional Surface Water Supplies."
- Page 5-8: Added "Initiate CEQA on Master Plan and initial water supply and treatment projects."

Contents

Executive Summary ES-1
ES-1 Current Conditions ES-1
ES-2 Objective ES-2
ES-3 Lessalt Water Treatment Plant ES-2
ES-4 Groundwater Treatment ES-3
ES-5 Estimated Costs ES-4
ES-6 Schedule ES-5
ES-7 Next Steps ES-6

1.0 Introduction 1-1
1.1 Background 1-1
1.1.1 Hollister Urban Area Water and Wastewater Master Plan 1-1
1.1.2 SSCWD Long-Term Wastewater Management Plan 1-2
1.1.3 Recycled Water Facilities Plan 1-2
1.1.4 Current Conditions 1-3
1.2 Objective 1-4
1.3 Report Format 1-5
1.4 Abbreviations 1-5

2.0 Master Plan Recommendations 2-1
2.1 Common Elements 2-1
2.1.1 Program Solutions 2-3
2.1.2 Base Case Water, Wastewater, and Recycled Water Facilities 2-3
2.2 Urban Water Supply Plan 2-4
2.3 Long Term Water Supplies and Regional Options 2-4

3.0 Lessalt Water Treatment Plant 3-1
3.1 Existing Facilities 3-1
3.2 Historical Annual Water Production 3-1
3.3 Proposed Hydraulic and Process Modifications 3-2
3.3.1 Hydraulic Modifications 3-2
3.3.2 Membranes 3-3
3.4 Water Supply Alternatives 3-4
3.4.1 Imported Surface Water Alternatives 3-4
3.4.2 Local Surface Water 3-6
3.4.3 North County Groundwater 3-10
3.5 New Surface Water Treatment Plant 3-11
3.6 Service to Ridgemark 3-11
3.6.1 Infrastructure Requirements 3-11
3.6.2 Operational Scenarios 3-14
3.6.3 Water Quality 3-15

4.0 Groundwater Treatment 4-1
4.1 Groundwater Treatment Alternatives Analysis 4-1
4.2 Groundwater Treatment Site Selection Analysis 4-3
4.3 Concentrate Management Alternatives 4-4
4.3.1 Concentration Alternatives 4-5
4.3.1.1 Evaporation Ponds 4-5
4.3.2 Salt Disposal Alternatives 4-6
4.4 Demineralization Enhancements 4-7
4.4.1 City Well No. 1 4-7
4.4.2 Wetland and Greenbelt Habitat Brine Management 4-9
4.4.3 Renewable Energy 4-9
4.5 Time Phasing of Demineralization Facilities 4-10

5.0 Recommended Plan.....5-1
5.1 Lessalt Water Treatment Plant.....5-1
5.2 Groundwater Treatment.....5-2
5.3 Estimated Costs.....5-4
5.4 Schedule.....5-5
5.5 Next Steps.....5-6

Figures

Figure ES-1. Coordinated Water Supply and Treatment Plan Implementation Schedule.....ES-6
Figure 2-1. Master Plan Recommended Program.....2-2
Figure 3-1: Lessalt Water Treatment Plant.....3-1
Figure 3-2. Surface Water Diversion Locations.....3-7
Figure 3-3. Existing Dam on Arroyo de las Viboras.....3-9
Figure 3-4. North County Groundwater TDS.....3-12
Figure 3-5. Pipeline from the Lessalt WTP to the Ridgemark Service Area.....3-13
Figure 3-6. Estimated Wastewater Quality, Operational Scenario A – Delivery of 1.5 mgd.....3-15
Figure 3-7. Estimated Wastewater Quality, Operational Scenario B – Delivery of 0.712 mgd.....3-16
Figure 4-1. Potential Groundwater Treatment Plant Sites.....4-3
Figure 4-2. Demineralization Enhancements.....4-8
Figure 4-3. Demineralization Phasing.....4-11
Figure 5-1. Coordinated Water Supply and Treatment Plan Implementation Schedule.....5-6

Tables

Table ES-1. Preliminary Cost Estimates for Water Supply and Treatment Facilities.....ES-5
Table 2-1. Integrated Water and Wastewater Master Plan.....2-1
Table 2-2. Hollister Urban Area Estimated Costs of Alternative Water Supplies.....2-3
Table 3-1. Historical Annual Water Production at Lessalt WTP.....3-2
Table 3-2. Potential Water Availability.....3-8
Table 3-3. Monthly Water Demand Summary for the Ridgemark Service Area.....3-14
Table 3-4. Estimated Wastewater Salinity.....3-16
Table 4-1. Groundwater Treatment Analysis Results.....4-2
Table 4-2. Groundwater Treatment Site Evaluation.....4-4
Table 5-1. Preliminary Cost Estimates for Water Supply and Treatment Facilities.....5-4
Table 5-2. Estimated Costs of Alternative Water Supplies.....5-5

Appendices (Bound Separately)

A. Hollister Conduit Hydraulic Analysis
B. SSCWD Potable Water System Improvements - Treatment Process Selection
C. SSCWD Potable Water System Improvements – Site Selection
D. SSCWD Potable Water System Improvements – Brine Disposal Alternatives
E. Potential Funding Opportunities for the Hollister Urban Area Demineralization Program

Executive Summary

This Hollister Urban Area Coordinated Water Supply and Treatment Plan provides a regional approach to implement the water treatment recommendations presented in the 2008 Hollister Urban Area Water and Wastewater Master Plan (Master Plan). This report updates the Master Plan recommendations with respect to current conditions including the ongoing drought, the Hollister Conduit capacity, recycled water quality needs, slower growth in water demands, and the economic downturn. The result of this work is a regional solution resulting in improved water quality, lower costs, and time phased implementation to reduce rate payer impacts.

ES-1 Current Conditions

Since the Master Plan was completed in November 2008, several key conditions have changed, including:

- **Ongoing Drought.** San Benito County, like all of California, is in the third year of a drought. The impacts of the ongoing drought have been intensified by pumping restrictions put in place on the Sacramento-San Joaquin Delta due to environmental concerns. The combination of these hydrologic and administrative droughts has resulted in significant reductions of both Agricultural and M&I CVP deliveries by the USBR.
- **Hollister Conduit Capacity.** Development of a new hydraulic model has provided a better understanding of the capacity and operation of the Hollister Conduit. The model indicates there is available delivery capacity in the Conduit during all but the peak demand hours on a maximum summer day.
- **Recycled Water Quality.** Although the MOU set a TDS concentration target of 500 mg/L for agricultural recycled water use, initial meetings with interested growers indicate that a concentration of approximately 700 mg/L would be acceptable.
- **Water Demands.** Water demands in the Hollister Urban Area (HUA) have not increased as rapidly as projected in the Master Plan due to the current economic downturn and specifically due to the housing crisis. Water demands in 2008 were 7,026 ac-ft, or approximately 1,100 ac-ft less than projected in the Master Plan.
- **Economic Downturn.** In addition to causing a delay in the development of water demands, the current economic downturn has also made it more difficult to implement high cost capital improvement programs and resulting rate increases.

The Coordinated Water Supply and Treatment Plan was developed by considering the impacts of the changed conditions noted above on the Master Plan recommendations.

ES-2 Objective

The objective of the Coordinated Water Supply and Treatment Plan is to update the concepts and recommendations presented in the Master Plan based on current conditions and provide a regional plan for water quality improvements. Drinking water quality improvements are necessary for both City and SSCWD customers. Due to the location of the existing Lessalt water treatment plant (WTP), delivery of high quality CVP supplies is concentrated in the eastern portion of the HUA. Improvements are needed to provide a more equitable distribution of high quality drinking water. Improving the drinking water quality will also improve the quality of recycled water for agricultural users.

This plan will provide improved drinking water and recycled water quality at the lowest practical cost. Specifically, this report describes a plan to maximize the use of the Lessalt WTP as the first step in implementing the Master Plan recommendations and defines the available water supply options to serve the Lessalt WTP and a new surface water treatment plant. This report also provides an update of the groundwater demineralization recommendations and describes the steps necessary to continue implementation in a time phased approach.

ES-3 Surface Water Treatment

Institutional agreements will be developed by the parties to define the equitable distribution of water supply to the urban users. Surface water treatment will be provided through improvements to the Lessalt WTP and a new second water treatment plant.

ES-3.1 Lessalt Water Treatment Plant

The Lessalt WTP was completed in 2002 with a nominal design capacity of 3.0 mgd. However, due to hydraulic constraints, process limitations, and reductions in CVP water availability, the plant has operated at an average rate of less than 1.6 mgd. As a result, the Lessalt WTP is an under-utilized asset which represents the most cost-effective potential increment of additional high quality water supply.

To maximize use of the Lessalt WTP, both hydraulic and process modifications will be required, including hydraulic improvements to allow consistent production of 3.0 mgd, and process improvements to meet the Stage 2 Disinfectant and Disinfection Byproducts Rule (D/DBP) and to allow removal of iron and manganese from water supplied from San Justo Reservoir. In addition to these improvements, the water supply to the Lessalt WTP must be firmed up to provide a reliable supply.

Several alternatives have been identified to firm up the water supply, including spot market purchases, longer-term contract purchases, local seasonal surface water supplies, and high groundwater from the North County. Initial investigations indicate that sufficient supply may be available from local sources to allow expansion of the Lessalt WTP and/or construction of a second surface water treatment plant.

Finally, to allow SSCWD to be in compliance with its Waste Discharge Requirements, a new pump station and pipeline would be constructed to provide treated water to the Ridgemark service area. Supplying water treated from the Lessalt WTP to the Ridgemark area would also facilitate the use of recycled water at the Ridgemark Golf Course, thereby freeing up M&I CVP supply currently used for golf course irrigation.

ES-3.2 New Surface Water Treatment Plant

The second surface water treatment plant would be sized to provide approximately 6,000 AF of treated water in conjunction with the Lessalt WTP. It would be constructed at a location to provide a high quality drinking water supply to the western areas of the City that currently receive groundwater.

Water supply for the new water treatment plant will be developed consistent with: (1) the MOU dated December 2004; (2) the current contracts between SBCWD and the USBR; (3) the results of feasibility studies; (4) the needs of the urban water users; and (5) subsequent agreements amongst the parties. These potential supplies include additional imported surface water and/or water from high groundwater areas in North County.

ES-4 Groundwater Treatment

The recommended groundwater treatment in the Master Plan was phased demineralization using reverse osmosis. Time phased implementation of the demineralization facilities was proposed to minimize initial capital costs, evaluate the effectiveness of blending, and take advantage of improving technology and the potential future lower cost of membranes.

The recommended time phasing of the groundwater demineralization projects has been updated to reflect the addition of a second surface water treatment plant and is based upon maintaining recycled water quality at approximately 700 mg/L TDS. This phasing results in 3.0 mgd of demineralization capacity by 2015 and an additional 2.0 mgd by 2019, for a total of 5.0 mgd through 2023. The need for additional demineralization facilities beyond 2023 would be based

on water quality and growth considerations. Availability of outside funding sources may accelerate implementation of the groundwater demineralization facilities.

As part of completing this coordinated water supply and treatment plan, several enhancements have been developed to provide additional benefits, reduce costs, and improve opportunities for outside funding for the groundwater treatment facilities. Enhancements include utilizing renewable energy (solar and/or wind) to supplement power needs and developing brackish wetlands for brine disposal.

An additional refinement would be to locate the first phase of demineralization at City Well No. 1. This well has a capacity of 2,400 gpm (3.4 mgd) and has been inactive for several years due to high nitrate levels. Demineralization at Well No. 1 would reduce hardness, total dissolved solids, and nitrates providing the opportunity to put this high capacity well back in service. The well is north of the City, in an ideal location to provide significant water quality benefits to the northern and western areas of the City.

The location of future wellhead or centralized groundwater treatment is still being evaluated. Several potential sites for a centralized treatment plant south of the City have been identified and evaluated. Results of work to date by SSCWD indicate that two feasible sites are the 38 acre Brigantino parcel located north of Hospital Road on the east side of the San Benito River and the 52 acre Campisi property located north of Hospital Road on the west side of the San Benito River. These sites are located near City and SSCWD wells. These sites are also along the Hollister Conduit which would provide the potential for collocating the second surface water treatment plant.

The final treatment process recommendations, which may include softening, demineralization, or a combination, are still under review and will be finalized during additional facilities planning to be completed by June 2010. Selection of a final process recommendation will be based upon capital and O&M costs, energy consumption, and operational considerations.

ES-5 Estimated Costs

Preliminary cost estimates for the proposed water supply and treatment facilities are summarized in Table ES-1. These cost estimates assume implementation of a North County wellfield to firm up supply to the Lessalt WTP and to provide supply for a new surface water treatment plant.

Table ES-1. Preliminary Cost Estimates for Water Supply and Treatment Facilities

Facilities	Estimated Cost
Lessalt WTP Upgrade	$4,100,000 [(a)]
Pump Station and Pipeline from Lessalt WTP to Ridgemark	2,800,000 [(b)]
North County Wellfield	12,600,000 [(c)]
New Surface Water Treatment Plant	10,900,000 [(d)]
Phased Groundwater Demineralization	48,800,000 [(e)]
Total	$79,200,000

(a) Based upon preliminary estimates for hydraulic improvements and membrane replacement. Costs for process modifications for Stage 2 D/DBP Rule compliance are currently being developed and are not included in this estimate.
(b) Some of these costs to be allocated to the Lessalt WTP upgrade.
(c) Based upon annual potential production capacity of 4,900 ac-ft pumped and delivered to the Hollister Conduit.
(d) Assumes a new 3.0 mgd membrane water treatment plant.
(e) Estimate from Master Plan revised to reflect reduction in demineralization capacity from 7.1 mgd to 5.0 mgd.

The water supply and treatment costs total $79.2 million compared to $96.2 million in the Master Plan for facilities providing similar benefits, resulting in a cost reduction of $17.0 million. The projected expenditures through 2015 total an estimated $66.0 million.

ES-6 Schedule

A preliminary schedule for implementation of the coordinated water supply and treatment plan is presented in Figure ES-1. As shown on the preliminary schedule, development of the North County wellfield will be completed after the Lessalt WTP upgrade. Depending upon the availability of CVP supplies, spot market or short-term contract purchases of imported water may be required on an interim basis to supply the upgraded Lessalt WTP.

The first phase of the groundwater demineralization facilities are schedule to be completed by 2015, consistent with the schedule provided in the Master Plan.

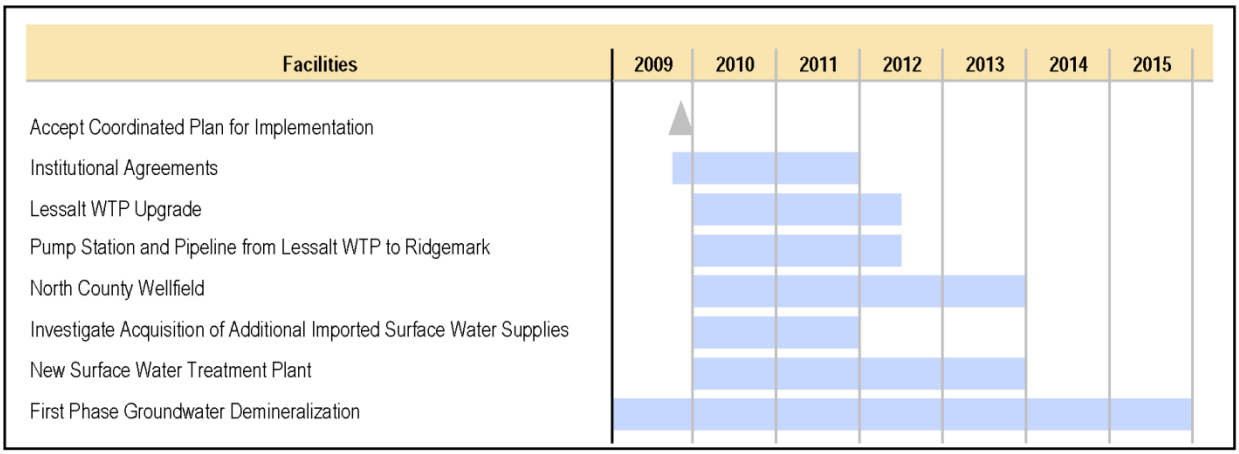


Figure ES-1. Coordinated Water Supply and Treatment Plan Implementation Schedule

Successful implementation of the phased demineralization facilities is highly dependent upon developing a favorable financial plan and equitable cost allocation. Numerous opportunities are also being pursued for supplemental outside funding from state and federal sources.

ES-7 Next Steps

The recommended next steps for implementation of the coordinated water supply and treatment plan include the following:

- Complete predesign of the Lessalt WTP to eliminate hydraulic constraints and provide process improvements. The hydraulic improvements should evaluate benefits and costs for expansion beyond 3.0 mgd.

- Complete evaluation of process improvement alternatives for the Lessalt WTP to meet the Stage 2 D/DBP Rule and to treat water from San Justo Reservoir with high concentrations of iron and manganese. Process options for meeting the Stage 2 D/DBP Rule should include the following:

  - Oxidation, coagulation, microfiltration (MF), free chlorine disinfection, and chloramination for distribution system residual;
  - Oxidation, coagulation, MF, granular activated carbon (GAC), and free chlorine disinfection;
  - Oxidation, coagulation, MF, and nanofiltration (NF) treatment;
  - Oxidation, coagulation, MF ozone disinfection, and biological GAC treatment; and

- MIEX process, oxidation, coagulation, MF, and free chlorine disinfection.

The process evaluation should include completion of the proposed nanofiltration pilot testing, collection of operational data from plants with processes similar to those proposed for the Lessalt WTP, and bench scale testing of options for iron and manganese removal.

- Initiate hydrogeologic and facilities planning studies of a North County wellfield and groundwater bank. Include an evaluation of potential conjunctive use operations using local seasonal streams and Pacheco Creek. Investigate current status of Water Rights Decision No. 187, dated 1928, for 11,000 acre-feet of water from Pacheco Creek and originally issued to the Hollister Irrigation District. Initiate discussions with Pacheco Pass Water District regarding coordinated operations of Pacheco Reservoir, Pacheco Creek and Arroyo de las Viboras.

- Determine the availability and cost of additional imported surface water supplies, including spot market, contract purchase, and out-of-basin banking.

- Complete further evaluation of operational scenarios and complete institutional negotiations for use of Lessalt WTP water supplied to Ridgemark, including providing average day or maximum day demand.

- Implement a water softener removal or replacement program in the Ridgemark service area in conjunction with the new supply from the Lessalt WTP. This activity should be coordinated with previous work by the Water Resources Association of San Benito County for the entire Hollister Urban Area.

- Request an extension from the Regional Board for the Ridgemark Wastewater Treatment Plant Waste Discharge Requirements to match the implementation schedule in this coordinated water supply and treatment plan.

- Evaluate the feasibility of constructing a new surface water treatment plant to serve the Hollister Urban Area. This new water treatment plant would be comparable in size to the Lessalt WTP and should be located to provide high quality water to the western areas of the City. Complete modeling of water distribution system to determine the optimum capacity and location of this new surface water treatment plant.

- Continue site selection studies for time phased demineralization facilities. Investigate use of City Well No. 1 for the initial demineralization facility. Complete modeling of water distribution system to confirm water quality benefits provided by this facility.

- Finalize process recommendations for groundwater treatment. Continue evaluation of brine disposal options including development of brackish wetlands. Investigate development of brackish wetlands on sites previously evaluated by SSCWD, including locations near Union and Hospital Roads along the San Benito River and lands formerly and currently used for quarry operations. Coordinate development of brackish wetlands with plans being developed by San Benito County for the River Parkway project.

- Continue active pursuit of outside funding from state and federal agencies to support implementation of the integrated water resources program for the Hollister Urban Area.

- Initiate CEQA on Master Plan and initial water supply and treatment projects.

1.0 Introduction

This Hollister Urban Area Coordinated Water Supply and Treatment Plan provides a regional approach to implement the water treatment recommendations presented in the 2008 Hollister Urban Area Water and Wastewater Master Plan (Master Plan). This report updates the Master Plan recommendations with respect to current conditions including the ongoing drought, the Hollister Conduit capacity, recycled water quality needs, slower growth in water demands, and the economic downturn. The result of this work is a regional solution resulting in improved water quality, lower costs, and time phased implementation to reduce rate payer impacts.

1.1 Background

Three planning studies provide the basis for the regional plan presented in this report, including the Master Plan, Sunnyslope County Water District's (SSCWD) Long-Term Wastewater Management Plan, and the Recycled Water Facilities Planning project. The key findings of each of these planning studies are briefly described below.

1.1.1 Hollister Urban Area Water and Wastewater Master Plan

The Master Plan, completed in November 2008, provides a long-term vision, through 2023, to meet the existing and future water resource needs of the Hollister Urban Area.

The Master Plan was initiated through a Memorandum of Understanding (MOU) developed in 2004 by the City of Hollister, San Benito County, and the San Benito County Water District (SBCWD), and was later amended to include SSCWD, hereafter referred to as the MOU Parties.

The goals of the Master Plan were based upon the principles and objectives defined in the MOU which include addressing the following regional water resource issues:

- Quality of drinking water and recycled water
- Reliability of water supply
- Coordination of water and wastewater system improvements
- Regional balance of water resources including high groundwater areas

The Master Plan recommendations are described in more detail in Section 2.

1.1.2 SSCWD Long-Term Wastewater Management Plan

The SSCWD completed a Long-Term Wastewater Management Plan (LTWMP) in 2006 which evaluated the two Ridgemark Wastewater Treatment Facilities and provided guidance on capital improvement projects necessary to meet both future growth needs and regulatory requirements.

The Central Coast Regional Water Quality Control Board (RWQCB) defined new regulatory requirements for SSCWD in Waste Discharge Requirement (WDR) Order No. R3-2004-0065. The new WDR permit, which will be in effect January 30, 2010, includes more stringent effluent quality requirements for nitrogen, total dissolved solids (TDS), chloride, sodium and other constituents. The new requirements for TDS, chloride and sodium, collectively referred to as salinity, are of particular concern due to the high hardness concentration of the groundwater wells which serve the Ridgemark service area. Local residents use water softeners to reduce the hardness, however, these softeners add significant amounts of salinity to the wastewater. As a result, the effluent quality at the existing Ridgemark Wastewater Treatment Facilities significantly exceeds the salinity requirements set forth in the new WDR permit.

The LTWMP recommended several potential alternatives for improvements to the Ridgemark Wastewater Treatment Facilities to address regulatory requirements for ammonia, nitrate, total suspended solids (TSS), and biochemical oxygen demand (BOD). However, to meet the WDR salinity requirements, the LTWMP recommended potable water quality improvements through either a CVP surface water supply or a groundwater demineralization project.

1.1.3 Recycled Water Facilities Plan

The Recycled Water Facilities Plan is being completed by the City and SBCWD. The objective of the project is to identify a market for and define the facilities necessary to provide recycled water for high value agriculture.

Initially, recycled water from the City's newly completed Water Reclamation Facility (WRF), which produces Title 22 unrestricted use recycled water, will be percolated at existing ponds or delivered to spray fields at the City's municipal airport, evaporated on-site at the WRF, and used for irrigation at the new Riverside Park.

As recommended in the 2008 Recycled Water Feasibility study, future expansion of the facilities would allow potential use in one or more of the following areas:

- Wright Road / McCloskey Road,
- Lone Tree Road Area,
- Santa Ana Valley, or
- East of Fairview Road.

The facilities would be phased, with the first phase extending from the Phase 1 facilities at the intersection of Wright and Briggs Roads, along Wright and McCloskey Roads to the intersection of Fairview Road. This location would provide a "hub" for future distribution of recycled water to one or more locations to the east or south including a potential interconnection to the proposed SSCWD recycled water system along Fairview Road.

The MOU established a recycled water TDS target of 500 mg/L not to exceed 700 mg/L. Blending recycled water with imported CVP water was identified as an interim measure for meeting the recycled water objectives. The recycled water objectives were to be achieved as soon as practical, but not later than 2015.

Initial meetings with interested growers indicate that a TDS concentration of approximately 700 mg/L would be acceptable. Other parameters of concern include the Sodium Adsorption Ratio (SAR), and chloride and sodium concentrations. The required water quality improvements would be achieved by implementing the wastewater treatment and groundwater demineralization projects recommended in the Master Plan.

1.1.4 Current Conditions

Since the Master Plan was completed in November 2008, several key conditions have changed, including:

- **Ongoing Drought.** San Benito County, like all of California, is in the third year of a drought. The impacts of the ongoing drought have been intensified by pumping restrictions put in place on the Sacramento-San Joaquin Delta due to environmental concerns. The combination of these hydrologic and administrative droughts has resulted in significant reductions of both Agricultural and Municipal and Industrial (M&I) CVP deliveries by the USBR.
- **Hollister Conduit Capacity.** Development of a new hydraulic model has provided a better understanding of the capacity and operation of the Hollister Conduit. The model

indicates there is available delivery capacity in the Conduit during all but the peak demand hours on a maximum summer day.

- **Recycled Water Quality.** As noted in the previous section, although the MOU set a TDS concentration target of 500 mg/L for agricultural recycled water use, initial meetings with interested growers indicate that a concentration in the range of 700 mg/L would be acceptable.
- **Water Demands.** Water demands in the HUA have not increased as rapidly as projected in the Master Plan due to the current economic downturn and specifically due to the significant slowdown in construction of new homes. Water demands in 2008 were 7,026 ac-ft, or approximately 1,100 ac-ft less than projected in the Master Plan.
- **Economic Downturn.** In addition to causing a delay in the growth of water demands, the current economic downturn has also made it more difficult to implement the rate increases associated with high cost capital improvement programs.

The following section of this report summarizes the original Master Plan recommendations. The Coordinated Water Supply and Treatment Plan was developed by considering the impacts of the changed conditions noted above on the Master Plan recommendations.

1.2 Objective

The objective of the Coordinated Water Supply and Treatment Plan is to update the concepts and recommendations presented in the Master Plan based on current conditions and provide a regional plan for water quality improvements. Drinking water quality improvements are necessary for customers of the City and SSCWD. Due to the location of the existing Lessalt WTP, delivery of high quality CVP supplies is concentrated in the eastern portion of the HUA. Improvements are needed to provide a more equitable distribution of high quality drinking water. Improving the drinking water quality will also improve the quality of recycled water for agricultural users.

The plan described in this report will provide improved drinking water and recycled water quality at the lowest practical cost. Specifically, this report describes a plan to use the Lessalt WTP and a second water plant as the first steps in implementing the Master Plan recommendations and defines the available water supply options to serve the water treatment plants. This report also provides an update of the groundwater demineralization

recommendations and describes the steps necessary to continue implementation in a time phased approach.

1.3 Report Format

This report summarizes the key findings and recommendations of the Coordinated Water Supply and Treatment Plan. Detailed technical memorandums references in this report are included in a separately bound appendix.

1.4 Abbreviations

To conserve space and improve the text, the following abbreviations have been used in this Master Plan:

ac	acre
ac-ft	acre-feet
ADD	average daily demand
af/yr	acre-feet per year
ASR	aquifer storage and recovery
$CaCO_3$	calcium carbonate
CEQA	California Environmental Quality Act
cfs	cubic feet per second
City	City of Hollister
County	San Benito County
CVP	Central Valley Project
D/DBP	Disinfectant/Disinfectant Byproducts
Delta	San Joaquin Delta
DWR	California State Department of Water Resources
EIR	Environmental Impact Report
ENR	Engineering News Record Construction Cost Index
fps	feet per second
ft	feet
GAC	granular activated carbon
GMP	Groundwater Management Plan

gpm	gallons per minute
HGL	hydraulic grade line
HUA	Hollister Urban Area
LTWMP	Long-term Wastewater Management Plan
Master Plan	Hollister Urban Area Water and Wastewater Master Plan
MF	microfiltration
mgal	million gallons
mgd	million gallons per day
mg/L	milligrams per liter
M&I	municipal and industrial
MOU	memorandum of understanding
MOU Parties	City of Hollister, San Benito County, San Benito County Water District, and Sunnyslope County Water District
NF	nanofiltration
O&M	operation and maintenance
PPWD	Pacheco Pass Water District
psi	pounds per square inch
PVWMA	Pajaro Valley Water Management Agency
RO	reverse osmosis
RWQCB	California Regional Water Quality Control Board, Central Coast Region
SBCWD	San Benito County Water District
SDWA	Safe Drinking Water Act
SSCWD	Sunnyslope County Water District
SLDMWA	San Luis and Delta Mendota Water Authority
SRF	State Revolving Funds
State	State of California
SWP	State Water Project

TDS	total dissolved solids
TM	Technical Memorandum
TSS	total suspended solids
USBR	United States Bureau of Reclamation
VESP	Vibratory Shear Process
WDR	waste discharge requirements
WRA	Water Resources Association of San Benito County
WRF	water reclamation facility
WTP	water treatment plant
WWTP	wastewater treatment plant
yr	year

2.0 Master Plan Recommendations

The integrated water resources plan presented in the Master Plan is summarized in Table 2-1 and the existing and proposed facilities are shown in Figure 2-1.

Table 2-1. Integrated Water and Wastewater Master Plan

2023 Master Plan		Long Term Water Supplies and Regional Options	
Common Elements	Urban Water Supply Plan		
Program Solutions ▪ Water Conservation ▪ Softener Ordinance ▪ Salinity Education ▪ Dual Distribution Systems in New Developments Base Case Water, Wastewater, and Recycled Water Facilities ▪ Lessalt WTP Upgrade ▪ SSCWD Softening and Demineralization Projects ▪ SSCWD Ridgemark WWTP and Recycled Water Projects ▪ Treated Water Storage Facilities ▪ Phase 2A Recycled Water Facilities (By 2015) ▪ New Wells ▪ WRP Expansion	Alternative 3B ▪ Phased Demineralization of Urban Wells (By 2015) Alternative 3A ▪ Demineralize Urban Wells to Meet MOU Water Quality Goals	Alternative 1A ▪ Exchange Agricultural CVP Supply for Recycled Water – Treat Locally and/or Use for Exchange as Part of Regional Option Alternative 1B ▪ Reallocate Unused CVP M&I Entitlements Alternative 2A ▪ Develop Local Surface Water Supply	Concept 4 ▪ Utilize Water from High Groundwater Basins ▪ Exchange North Area Groundwater for CVP Supply from PVWMA ▪ Demineralize or Soften Groundwater from San Juan Subbasin and Import to Urban Area
		Other Water Supplies and Options Identified Through Ongoing Regional Studies and Future Updates to Master Plan	
Implementation Timing →			

The recommended program includes three principal elements:

- Common elements,
- Urban water supply plan, and
- Long term water supplies and regional options.

2.1 Common Elements

The elements common to all alternatives considered include program solutions and base case water, wastewater, and recycled water facilities.

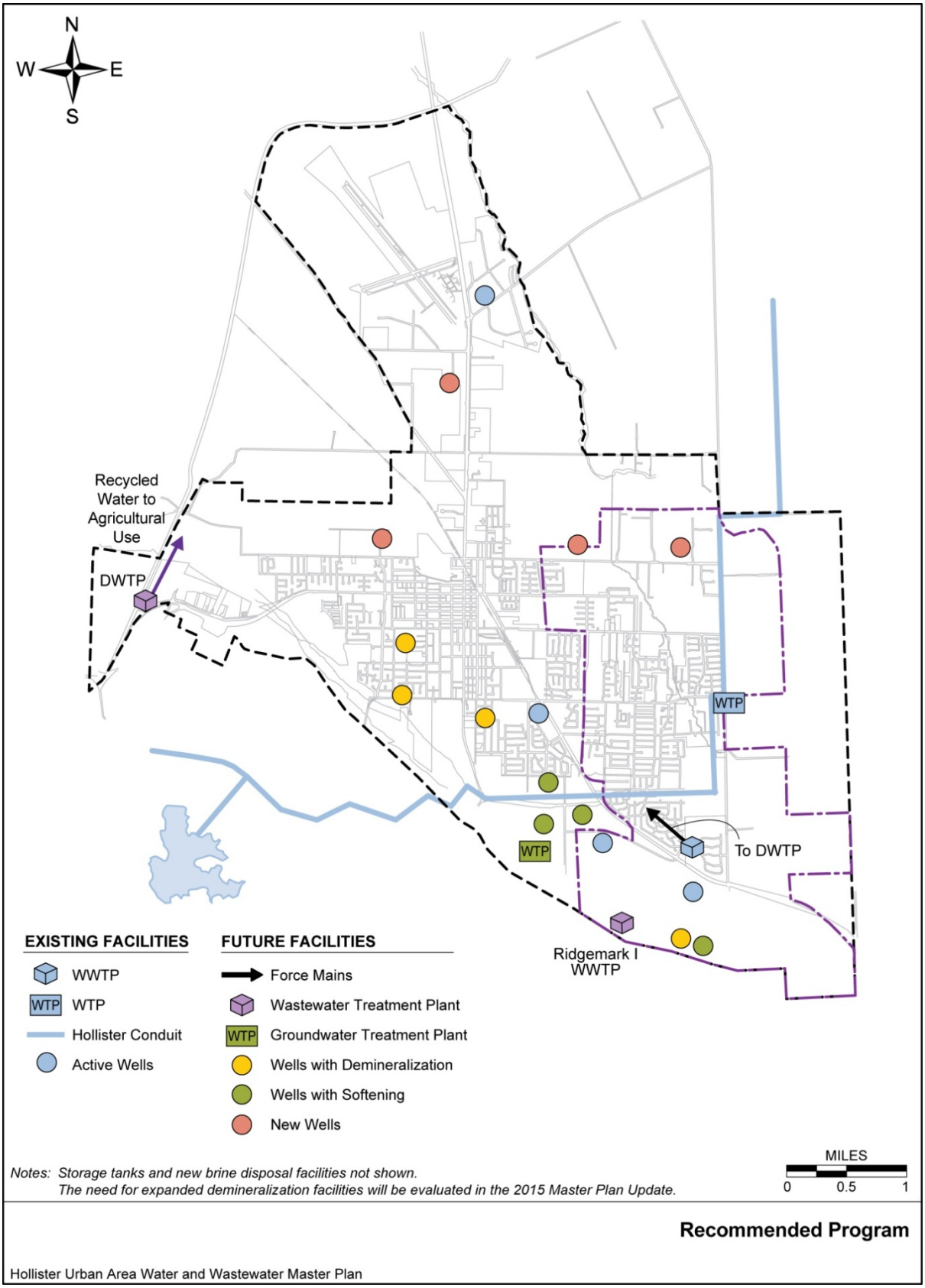


Figure 2-1. Master Plan Recommended Program

2.1.1 Program Solutions

Program solutions include water conservation, salinity education, a softener ordinance, and dual distribution systems in new development. These general programs are ongoing activities being implemented by the MOU Members. These program solutions are intended to provide reductions in water demand, reduced salinity, and opportunities for the use of recycled water.

2.1.2 Base Case Water, Wastewater, and Recycled Water Facilities

The base case includes common facilities which were considered along with the urban water supply alternatives. Many of these base case facilities were already in the planning or feasibility level at the time the Master Plan was completed. Other facilities such as new wells or treated water storage are infrastructure improvements required regardless of the ultimate source of water supply. The major treatment projects in the base case facilities include upgrading the Lessalt WTP, softening and/or demineralization of drinking water for Ridgemark, and an upgrade of the Ridgemark Wastewater Treatment Plant.

The Lessalt WTP was originally designed to produce 3.0 mgd but currently operates at about half of design capacity. Upgrades are required to improve hydraulics and comply with new drinking water regulations. Upgrading the Lessalt WTP will provide the most cost-effective increment of high quality drinking water as shown by the unit costs in Table 2-2.

Table 2-2. Hollister Urban Area Estimated Costs of Alternative Water Supplies

Alternative Supply	Estimated Unit Cost ($/AF)
Existing Lessalt WTP with CVP Supply[(a)]	413
Upgraded Lessalt WTP at Design Capacity with CVP Supply[(b)]	454
Phased Groundwater Demineralization[(c)]	2,000 – 2,250

Notes:
(a) Based on 1,840 AF average annual production from 2003 through 2008.
(b) Based on 3,360 AF annual production at original design capacity.
(c) Unit costs to provide groundwater demineralization for the Ridgemark Service Area only are higher.

Improvements to the Ridgemark Wastewater Treatment Plant are required to comply with new WDR requirements issued to SSCWD by the RWQCB. Improved wastewater treatment will also facilitate the use of recycled water on the Ridgemark Golf Course and free up some imported M&I CVP supply for other uses. Drinking water improvements are also required to reduce salinity and meet the TDS limits in the WDR.

2.2 Urban Water Supply Plan

The urban water supply plan is a phased solution implementing initially Master Plan Alternative 3B – Phased Demineralization of Urban Wells, and later, if required, expanding the demineralization of urban wells in accordance with Master Plan Alternative 3A – Demineralization of Urban Wells to Meet MOU Goals. The need for and timing of future expansion should consider both growth in water demand and the performance of and ability to optimize the initial phase of demineralization. There may be opportunities to optimize the initial demineralization facilities using a new approach for well operations and/or additional infrastructure improvements. Additionally, as the demineralization technology develops, there could be lower cost treatment and brine disposal options in the future. The flexibility provided by the phased solution will allow the MOU Parties to revisit this Master Plan by 2015 and evaluate the need to expand demineralization and the timing of the expansion.

2.3 Historial Imported Water Supplies

As a result of over-commitments of CVP supplies, drought, and supply limitations imposed by environmental constraints, the USBR has instituted its Shortage Policy in three of the past six years, as indicated in Table 3-1. The Shortage Policy provides that the allocation of M&I CVP water will be based on a contractor's historical use of CVP M&I water, as adjusted for growth, extraordinary water conservation measures, and non-CVP water. Under the Shortage Policy, SBCWD's historical M&I usage is currently set at 4,026 ac-ft compared to the CVP M&I contract amount of 8,250 ac-ft per year.

In 2009, the third year of an ongoing drought, the M&I allocation was only 60 percent of historical use, or 2,416 ac-ft. Since over half of the District's M&I supply is committed to other entitlements, insufficient water supply would be available for the surface water treatment plants to operate at design capacity. The minimum M & I CVP allocation available for surface water treatment is estimated to be 1,320 af/yr based upon actual 2008 allocations. Therefore, it is assumed that up to approximately 5,000 af/yr of additional supply could be required to ensure a sufficient water supply to surface water treatment plants.

2.4 Long Term Water Supplies and Regional Options

Between the year 2023 and buildout, an additional 8,300 ac-ft of water will be required on an annual basis. To meet this long-term need, the options shown in Table 2-1 provide a starting point for pursuing the necessary water supplies. Due to the time required and risks associated

with developing major water supplies, it was recommended in the Master Plan that multiple options be investigated in parallel to provide the greatest flexibility for future implementation.

Due to the ongoing drought, Delta pumping restrictions, and the need to firm up surface water supply, several long-term water supply options need to be accelerated. As described in the following section, the options to be considered for early implementation include purchase of additional imported CVP water, local surface supplies, and North County groundwater supplies from areas subject to high groundwater conditions.

3.0 Lessalt Water Treatment Plant

One of the first steps recommended in the Master Plan was to maximize use of the Lessalt WTP. The Lessalt WTP was completed in 2002 with a nominal design capacity of 3.0 mgd. However, due to hydraulic constraints, process limitations, and reductions in CVP water availability, the plant has operated at an average rate of less than 1.6 mgd. In 2008, it produced only 1,323 ac-ft, an average annual production rate of 1.18 mgd.

3.1 Existing Facilities

The Lessalt WTP, a jointly-owned facility between the City and the SSCWD, was placed into operation in 2002. The plant, shown in Figure 3-1, was designed to treat imported CVP water using microfiltration and chlorine disinfection. The treated water is distributed to both City and SSCWD customers in the middle (Fairview) and lower (Park Hill) pressure zones.

Figure 3-1: Lessalt Water Treatment Plant

The Lessalt WTP was constructed to provide replacement water for groundwater and improve water quality. The plant was designed with a rated capacity of 3.0 mgd capable of treating 3,360 ac-ft of imported CVP water supply annually. However, since the plant was placed in service in 2002, it has been unable to achieve its design capacity due to hydraulic constraints and the inability to treat iron and manganese from water supplied by San Justo Reservoir. The plant will also require upgrades to address treated water capacity issues related to the Stage 2 Disinfectant/Disinfection Byproducts Rule (Stage 2 D/DBP) which takes effect in 2013.

3.2 Historical Annual Water Production

Since 2003, the Lessalt WTP has operated at an annual average rate of 1.6 mgd. In addition to the hydraulic constraints and treated water capacity issues described above, the plant also

experiences water supply shortages due to a reduction in CVP allocations. The historical annual water production at the plant is summarized in Table 3-1.

Table 3-1. Historical Annual Water Production at Lessalt WTP

Year	Annual Production (af/yr)	Annual Average Daily Production (mgd)	Annual CVP Allocation [(a)] (percentage)
2003	2000	1.8	100
2004	2330	2.1	95
2005	1777	1.6	100
2006	1300	1.2	100
2007	1718	1.5	75
2008	1323	1.2	75
Average	1741	1.6	

(a) In years when the percentage is less than 100 percent, the allocation percentage is applied to the historical use. Under the USBR Shortage Policy, historical use is defined as the average quantity of CVP water put to beneficial use within the service area during the last 3 years of water deliveries, unconstrained by the availability of CVP water.

3.3 Proposed Hydraulic and Process Modifications

To maximize use of the Lessalt WTP, both hydraulic and process modifications will be required as described in the following subsections.

3.3.1 Hydraulic Modifications

The Lessalt WTP currently operates off the available hydraulic grade line (HGL) of the Subsystem 9 pump station. This means the HGL of the Subsystem 9 pump station is the only driving force of flow through the Lessalt membranes and into the distribution system. The current arrangement does not have sufficient pressure to produce 3.0 mgd of treated water as originally planned in the design capacity of the Lessalt WTP.

As part or the predesign studies, hydraulic process improvements will be evaluated. Previously completed studies have recommended a clearwell and pump station downstream of the membranes to resolve the hydraulic constraints. Any proposed hydraulic improvements should be consistent with an overall plan for the Lessalt WTP including provision for the preferred process selected from the alternatives described in the following section. Process Modifications

The Lessalt WTP also needs to be upgraded to meet the U.S. Environmental Protection Agency (EPA) Stage 2 D/DBP Rule that goes into effect in October 1, 2013 for community water systems servicing 10,000 to 49,999 persons. The Stage 2 D/DBP maximum contaminant levels (MCL) are 0.080 mg/l for Total Trihalomethanes (TTHM) and 0.060 mg/l for Haloacetic Acids (HAA5) based on location running annual average (LRAA) at each monitoring location. At select monitoring points, recent TTHM LRAA exceeded the Stage 2 D/DBP MCL. SSCWD

and the City are currently evaluating the following alternatives to meet the water quality regulations:

- Oxidation, coagulation, microfiltration (MF), free chlorine disinfection, and chloramination for distribution system residual;
- Oxidation, coagulation, MF, granular activated carbon (GAC), and free chlorine disinfection;
- Oxidation, coagulation, MF, and nanofiltration (NF) treatment;
- Oxidation, coagulation, MF ozone disinfection, and biological GAC treatment; and
- MIEX process, oxidation, coagulation, MF, and free chlorine disinfection.

Depending on the environmental review requirements and project schedule, the process improvements to meet the new regulations could be completed in conjunction with the hydraulic improvements or as a separate project.

Under current operation, the Lessalt WTP is shutdown when water from the San Justo Reservoir is backfed to the Hollister Conduit. This shutdown is due to the inability of the existing process to treat San Justo Reservoir water iron and manganese concentrations. Alternatives to address iron and manganese are under evaluation and may be implemented with other process improvements.

3.3.2 Membranes

The Lessalt WTP was completed in 2002 and has been in operation for over 7 years. Typically, membranes are replaced at intervals ranging from 7 to 10 years. However, since the Lessalt WTP has not been operating at design capacity, the existing membranes may have significant remaining useful life. In conjunction with the predesign work for the hydraulics and process improvements, the condition of the existing membranes should be evaluated.

Significant advances in membrane technology have been made since the Lessalt WTP was completed in 2002. Currently available membranes provide improved reliability at lower cost. In addition, an initial investigation indicates that the plant capacity may be expanded up to 4.5 mgd generally within the existing footprint. Newer, more efficient membranes would accommodate this potential increase in capacity. Additional evaluation and facility review is

required to confirm the feasibility of this capacity expansion. Firming up the original design capacity or expanding the Lessalt WTP capacity will require consideration of additional water supply options as discussed in Subsection 3.4.

3.4 Water Supply Alternatives

In years when the SBCWD receives 75 percent or greater of the M&I contract allocation, there is sufficient supply to operate water treatment plants up to 3.0 mgd. However, actual annual allocations may be less due to drought and/or administrative-related reductions. Therefore, additional water supply is required to increase reliability and firm up supply.

As shown in Table 2-1, numerous options for meeting long-term water supply needs were identified in the Master Plan. Due to the ongoing drought, administrative restrictions on Delta pumping, and the need for a firm water supply, it is necessary to accelerate implementation of some of these water supply options. The water supply options investigated include additional imported water, local surface water supplies, and North County groundwater.

3.4.1 Imported Surface Water Alternatives

The SBCWD has an existing contract for surface water imported from the CVP the San Luis Reservoir, the San Felipe Project, and the Hollister Conduit. As described in previous subsections, actual deliveries are subject to the USBR Shortage Policy and have been curtailed due to drought and Delta pumping restrictions in recent years.

Water transactions in California are classified as permanent sales of water rights or entitlements, long-term transfers, or short-term transfers (spot market). Out-of-basin groundwater banking is also used to facilitate transfers.

3.4.1.1 Permanent Sales and Long-Term Transfers

These type of transactions are typically permanent or temporary reallocation of water from agricultural to urban or environmental uses. These reallocations are often accomplished by temporary or long-term land fallowing. Sale prices for permanent and long-term transfers can vary substantially and have been increasing over the past decade. Recent transactions involving CVP and State Water Project (SWP) supplies have ranged from $2,500 to over $5,000 per ac-ft as a single up-front payment. Delivery costs through state and federal facilities are incurred annually.

Long-term transfers are different from permanent sales because they allow the seller to retain the underlying water right. The duration and price of these long-term transfers vary significantly. The term of these transfers may range from 10 to 40 years. Prices may be tied to type of water year and can range from $60 to over $300 per ac-ft annually.

3.4.1.2 Spot Market

Short-term transfers (spot market sales) are different from long-term transfers because they are negotiated and implemented within a single year. Due to the shorter term nature of these transactions, the price is typically higher than a long-term transfer. Prices are also strongly influenced by year type and water availability. Over the past decade, prices have ranged from less than $50 to more than $500 per ac-ft annually.

In response to the ongoing drought, the State of California Department of Water Resources (DWR) operates an annual Drought Water Bank. The purpose of the drought bank is to facilitate spot market transfers from willing water suppliers north of the Delta. The water is then transferred using SWP or CVP facilities to water suppliers that are at risk of experiencing water shortages due to drought conditions and that require supplemental water supplies to meet anticipated demands. Water supplies from the Drought Water Bank are open to all water suppliers that can obtain water from the Delta either directly or by exchange with other suppliers that have access to Delta water supplies from the SWP or CVP.

The SBCWD is a member of the San Luis and Delta Mendota Water Authority (SLDMWA). As a SLDMWA member, SBCWD has access to spot market sales negotiated on their behalf by the SLDMWA.

3.4.1.3 Out-of-Basin Banking

Groundwater banking is accomplished in two ways, including in-lieu recharge and direct recharge.

In-lieu recharge involves storing water by utilizing surface water in-lieu of pumping groundwater, thereby retaining or storing an equal amount in the groundwater basin. Direct recharge is accomplished by allowing water to percolate directly into the groundwater basin.

In California, the major out-of-basin groundwater bank is operated by Semitropic Water Storage District. Located near Wasco, California just north of Bakersfield, this groundwater bank can store up to 1.6 million ac-ft of water.

3.4.2 Local Surface Water

The Master Plan considered several concepts for the development of local surface water supplies. Specifically, the Master Plan recommended that the development of Arroyo Dos Picachos, Arroyo de las Viboras, and Pacheco Creek be further considered for long-term water supply.

These streams are seasonal in nature, yielding water only during the winter through late spring. Therefore, the Master Plan recommended that these supplies be developed using seasonal diversion dams (e.g., inflatable dams, rehabilitation or reoperation of an existing structure) along with earthwork to create a small impoundment upstream of the diversion structure. Once diverted, water could be directed to a groundwater recharge area for later pumping and recovery, conveyed to the Hollister Urban Area for treatment and distribution, or to the San Justo Reservoir for storage.

At the time the Master Plan was completed, the Hollister Conduit was considered to be at or near its capacity. Therefore, while the capture of intermittent stream flows was considered to be feasible, it was coupled with the construction of a new parallel transmission pipeline, thus significantly increasing the capital costs required for implementation. However, with the development of a new hydraulic model, the capacity of the Hollister Conduit is now better understood. Based on a review of flows in the Conduit (refer to Appendix A), it was determined that there is sufficient capacity remaining in the Hollister Conduit to convey water diverted from the seasonal streams into the Hollister Urban Area, particularly considering that surface water diversions would occur during the wet season.

Potential diversion locations on Pacheco Creek, Arroyo de las Viboras, and Arroyo Dos Picachos, shown in Figure 3-2, range from 0.1 to 1.2 miles from the Hollister Conduit.

Table 3-2 summarizes the potential water supply availability for Pacheco Creek, Arroyo de las Viboras, and Arroyo Dos Picachos. While SBCWD holds a water right for Arroyo Dos Picachos, a Hollister Irrigation District water right for Pacheco Creek must be reviewed to determine its current status, and a new water right filing would be required for Arroyo de las Viboras.

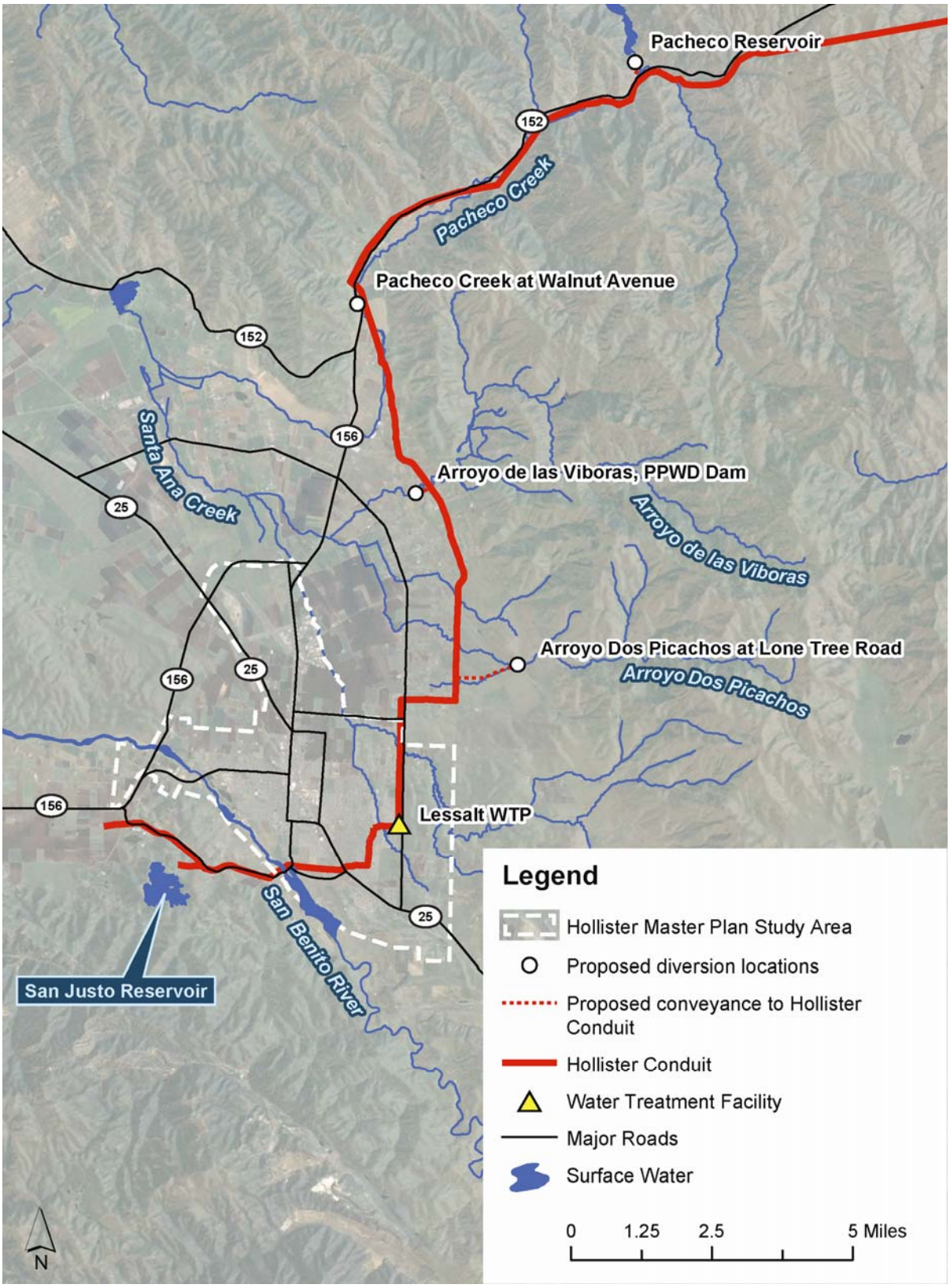


Figure 3-2. Surface Water Diversion Locations

Table 3-2. Potential Water Availability

Source	Water Right	Diversion Rate	Potential Water Supply (acre-feet)
Pacheco Creek	Hollister Irrigation District	15.19 cfs, 365 days/yr	11,000[(a)]
	Pacheco Pass Water District	-	7,250 [(b)]
Arroyo de las Viboras	Pacheco Pass Water District	3.75 cfs, Dec 15 – May 1	2,226.5 [(c)]
	Unadjudicated	-	1,377[(d)]
Arroyo Dos Picachos	SBCWD	4.75 cfs, 151 days/yr	1,422

(a) Water rights Decision No. 187 dated 1928. Additional unadjudicated supply may also exist in above normal and wet years.
(b) License 2879, dated October 24, 1933
(c) License 2486, dated February 20, 1935
(d) Estimated average year unadjudicated supply, based on GMP Update.

Diversions from the Arroyo de las Viboras and Arroyo Dos Picachos would occur during the wet months, typically December through April. Diversions from Pacheco Creek could potentially occur throughout the year due to the storage provided by Pacheco Reservoir.

For each of the streams, water could be diverted, when available, to the Hollister Conduit and conveyed to the Lessalt WTP for treatment and distribution to M&I customers. Excess water could bypass the Lessalt WTP and be conveyed to the San Justo Reservoir for storage. Alternatively, these local surface streams could be more actively managed for recharge in a conjunctive management system involving North County groundwater. Each of the local surface water supplies is described in more detail in the following subsections.

3.4.2.1 Pacheco Creek

According to the GMP Update, Pacheco Creek may have an average of 25,551 af/yr supply available. A Hollister Irrigation District water right for up to 11,000 af/yr (15.19 cfs for 365 days) was established in 1928 but the current status must be determined. Pacheco Pass Water District (PPWD) has a water right up to 16,000 af/yr (22.10 cfs for 365 days). Use of available unadjudicated wet season water would require coordination with PPWD and development of institutional agreements for the use of the Pacheco Reservoir or coordination of releases from the reservoir.

Pacheco Reservoir, constructed in 1938, is owned and operated by PPWD. The reservoir capacity is approximately 6,140 ac-ft. PPWD releases water from the reservoir to Pacheco Creek during the dry season to increase groundwater recharge in the Pacheco Subbasin. Diversion of water for use in the Hollister Urban Area could come directly from Pacheco Reservoir, or alternatively, from a new impoundment downstream near Walnut Avenue.

Historical data indicates that TDS levels in Pacheco Creek may be as low as 235 mg/L. However, other water quality constituents such as turbidity, algae, and microbiological contamination from cattle would require additional water quality testing to determine suitability for M&I treatment and supply at the Lessalt WTP.

3.4.2.2 Arroyo de las Viboras

According to the GMP Update, Arroyo de las Viboras may have an average of 3,159 af/yr supply available in an average year, of which 1,782 af/yr (13.685 cfs) has been allocated. Thus, there may be up to 1,377 af/yr of unadjudicated seasonal water supply available during an average year.

The unadjudicated wet season flow could be diverted at an existing PPWD diversion structure downstream of the Hollister Conduit. The existing dam at the diversion site is in disrepair, as shown in Figure 3-3, requiring a seismic stability assessment and structural upgrades. Depending on the magnitude of the dam repairs required, it may be more desirable to construct a new facility, such as inflatable dam. Either option would require coordination with PPWD and development of institutional agreements for the use of the facility and site.

Figure 3-3. Existing Dam on Arroyo de las Viboras

An intake facility, pump station and transmission piping to the Hollister Conduit are also required for a diversion on Arroyo de las Viboras. Furthermore, the soils in the impoundment area should be examined to determine if heavy metals or other constituents of concern have accumulated over the years.

The TDS concentration in Arroyo de las Viboras is expected to be approximately 360 mg/L, based on a 1954 study.

3.4.2.3 Arroyo Dos Picachos

SBCWD currently holds a water right to divert 4.75 cfs from December 1 to May 1of the subsequent year, or approximately 1,422 af/yr, from Arroyo Dos Picachos. The water right allows diversions when there is active flow from Arroyo Dos Picachos into Arroyo de las Viboras during the wet season.

Between 2005 and 2007, SBCWD diverted an annual average of approximately 180 ac-ft at an existing diversion structure near Lone Tree Road. The diverted water was used for groundwater recharge in nearby ponds.

PPWD also holds a water right on Arroyo Dos Picachos, for up to 45.25 cfs. The GMP Update indicates that approximately 2,100 af/yr may be available during most wet and normal year. Thus, the 1,422 af/yr water right should be available as long as PPWD does not exercise its water rights. However, a water rights contract could be negotiated to minimize this impact.

The existing diversion structure would require significant improvement or replacement with an inflatable dam. The upstream channel would also require modifications to create a small impoundment. An intake facility and pump station would be constructed adjacent to the impoundment; the pump station would pump water out of the impoundment and into a transmission pipeline, approximately 1.2 miles along Lone Tree Road to the Hollister Conduit.

According to a study conducted in 1954, the TDS concentration in Arroyo Dos Picachos is approximately 500 mg/L.

3.4.3 North County Groundwater

In addition to the development of local surface water supplies, the development of the North County groundwater subbasins as a long-term water supply source for the Hollister Urban Area was also recommended in the Master Plan.

The 2006 *Draft Occurrence and Management of High Groundwater North Area* report (Draft North Area Report) was prepared for SBCWD to define the geologic controlling features creating high groundwater conditions in the North County subbasins, locate the recharge areas, assess the hydraulic characteristics and water quality in each aquifer, and finally, to propose management options to lower the groundwater levels.

The Draft North Area Report found that there is a surplus of approximately 3,000 af/yr in the north area, which is creating the high groundwater levels and artesian springs. To lower the groundwater levels, the study recommended pumping over 4,900 af/yr. These findings and recommendations indicate that there is more than enough water available from this supply to firm up supply to the Lessalt WTP. There may also be sufficient supply from this source to expand the Lessalt WTP beyond 3.0 mgd or supply a second water treatment plant.

As shown in Figure 3-4, the Draft North Area Report also identified a lobe of good water quality, with a TDS of less than 500 mg/L, extending from the mouth of Pacheco Creek and Arroyo de las Viboras to the west. This area is typically associated with low concentrations of boron as well, ranging from 0.1 to 0.7 mg/L compared to a State drinking water limit of 1.0 mg/L. The study also found that properly located wells could improve groundwater quality in the North County.

3.5 New Surface Water Treatment Plant

As described in the previous subsection, there could be sufficient water available from North County groundwater to supply a second surface water treatment plant. In addition, local surface streams could be more actively managed for recharge in a conjunctive management system to augment the supply from North County groundwater.

The new surface water treatment plant will be located to provide high quality water supply to the western area of the City, an area that currently receives groundwater. Capacity of the new water treatment plant would be determined based on water supply availability, and the results of feasibility studies. Additional modeling of the distribution system would be required to determine the optimum capacity and location of this new surface water treatment plant.

3.6 Service to Ridgemark

A significant benefit from the Lessalt WTP upgrade would be providing service to the Ridgemark area of SSCWD. Providing treated water from the Lessalt WTP in combination with enforcing the softener ordinance would allow SSCWD to meet the WDR requirements for the upgraded Ridgemark Wastewater Treatment Plant in the most cost-effective manner.

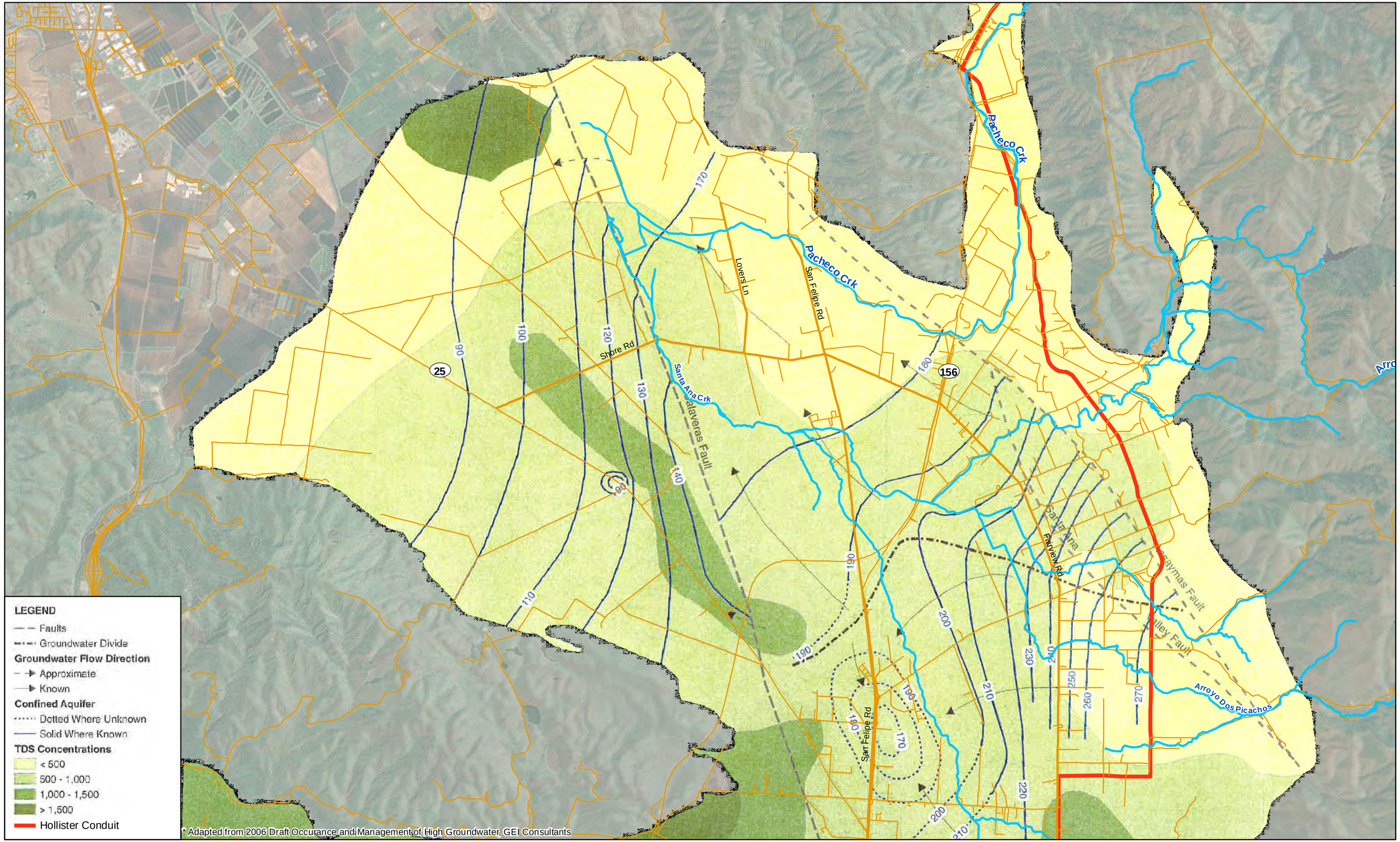


Figure 3-4. North County Groundwater TDS

Coordinated Water Supply and Treatment Plan

HDR
ONE COMPANY | Many Solutions™

3.6.1 Infrastructure Requirements

From the Lessalt WTP, the nearest connection point to the Ridgemark (high) pressure zone is approximately 4,000 feet south along Fairview Road. As shown in Figure 3-5, a new 4,000 feet pipeline would be constructed from the Lessalt WTP down Fairview Road to a connection point near the junction between the Ridgemark and Fairview pressure zones to supply the Ridgemark zone. A new pump station would also be required at the Lessalt WTP.

Figure 3-5. Pipeline from the Lessalt WTP to the Ridgemark Service Area

3.6.2 Operational Scenarios

As shown in Table 3-3, the average day demand for Ridgemark is 0.712 mgd and the maximum day demand is 1.627 mgd. Two operational scenarios have been developed and are described below.

Table 3-3. Monthly Water Demand Summary for the Ridgemark Service Area

Month	Net Total Water Demand (mgal)	Average Day Water Demand (mgd)	Maximum Day Water Demand (mgd)
January	9.8	0.315	0.360
February	10.3	0.368	0.470
March	9.7	0.313	0.393
April	14.2	0.473	0.675
May	27.0	0.870	1.501
June	31.3	1.043	1.384
July	37.1	1.197	1.515
August	34.7	1.119	1.521
September	30.8	1.027	1.627
October	26.8	0.865	1.432
November	16.5	0.550	0.712
December	11.8	0.382	0.506
	260.0	0.712	1.627

(a) Based on SSCWD well pumping records from November 2004 through May 2006.
(b) Net water demand is the total well pumping less the flow to the Fairview (middle) zone through the pressure relief stations, plus the incremental demand of the Oak Creek and Quail Hollow subdivisions.

- **Scenario A.** SSCWD could use up to 1.5 mgd of CVP water, its share of the capacity of the Lessalt WTP, in the Ridgemark service area. Groundwater wells would be required to supplement the water supply during the days when the Ridgemark demand exceeds 1.5 mgd, which is estimated to be approximately 6 days per year. During the winter months, more customers in the Fairview and Park Hill pressure zones would receive water treated at the Lessalt WTP. During the summer months, those customers would receive about the same as existing conditions.

- **Scenario B.** In this scenario, SSCWD would provide up to 0.712 mgd to the Ridgemark service area. Sizing the supply from the Lessalt WTP for average day demands would meet all Ridgemark demands for the six months from November through April. In addition, the 0.712 mgd supply would meet 60 percent of the average demand during the maximum month of July. Groundwater would be required to supplement the Lessalt WTP during the six months from May through October.

The following subsection describes the water quality associated with the potential operational scenarios.

3.6.3 Water Quality

The objective of providing water from the Lessalt WTP to the Ridgemark service area is to provide a water quality that will enable SSCWD to meet its WDR salinity requirements, which are 1,200 mg/L TDS, and 200 mg/L each for sodium and chloride.

Currently, the average effluent TDS at the Ridgemark Wastewater Treatment Facilities is over 1,800 mg/L. The high TDS is attributed to the use of water softeners which are used to reduce water hardness. A report completed by Bracewell Engineering in 2006 estimated that nearly 80 percent of residences in the Ridgemark service area have self-regenerating, brine discharging water softeners which increase the TDS, sodium and chloride in the wastewater stream. It is estimated that approximately 760 mg/L TDS are currently being added to the wastewater stream as a result of brine discharging water softener use in the Ridgemark service area.

The water quality in the Ridgemark service area will depend on the selected operational scenario. Implementation of Scenario A would provide water from the Lessalt WTP to meet the full demand in the Ridgemark service area on all but approximately 6 days during the summer months. During these days, groundwater would be used to meet peak demands. The estimated wastewater quality for Scenario A is shown in Figure 3-6.

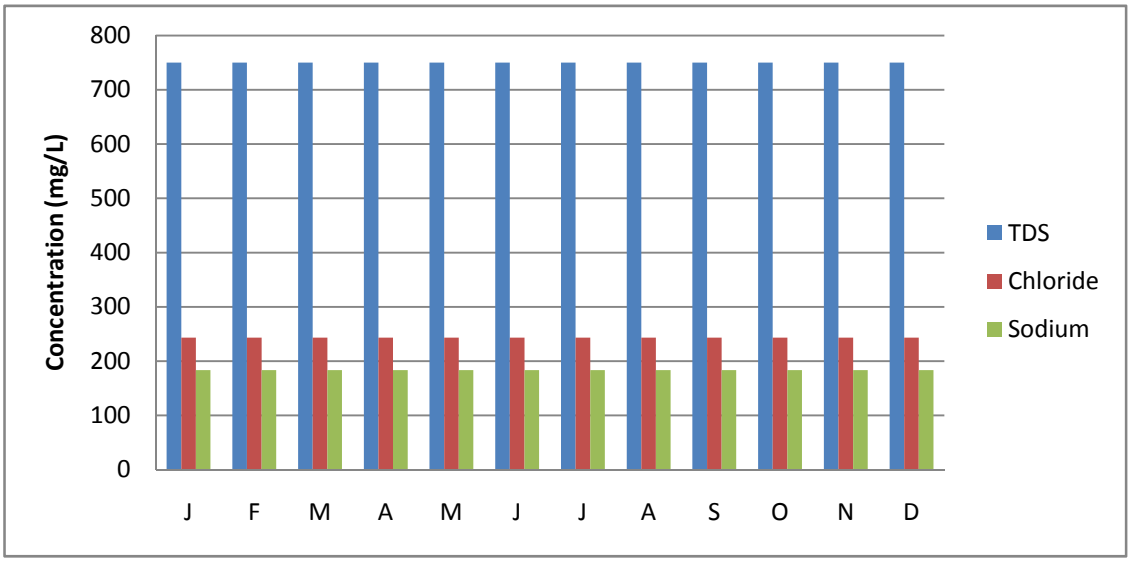


Figure 3-6. Estimated Wastewater Quality, Operational Scenario A – Delivery of 1.5 mgd

As shown in Figure 3-6, if water softeners are not removed, the resulting water quality at the wastewater treatment plant is expected to exceed the WDR requirements for chloride. To meet the WDR requirements, an estimated 35 percent of water softeners would need to be removed

or replaced with non-brine discharging softeners; the resulting wastewater salinity is shown in Table 3-4. Since the water quality in the distribution system will be consistently high quality, low hardness water throughout most of the year, it is reasonable to require that water softeners be removed. However, a public education campaign will also be required to inform residents of the new, higher water quality they can expect.

Table 3-4. Estimated Wastewater Salinity

Operational Scenario	Required Softener Removal	TDS (mg/L)	Sodium (mg/L)	Chloride (mg/L)
WDR Salinity Requirement[(a)]	--	1200	200	200
Scenario A	35%	680	155	200
Scenario B[(b)]	75%	600 – 830	125 – 170	150 – 200

(a) Waste Discharge Requirements Order No. R3-2004-0065.Limits, effective January 30, 2010, are based on 30-day average.
(b) Lower end of range represents average day with water supplied by the Lessalt WTP. Upper end of range represents maximum day salinity, with water provided by both the Lessalt WTP and groundwater.

Implementing Scenario B would result in a varying water quality in the distribution system, specifically during the summer months. The supply from the Lessalt WTP could meet the full water demand November through April; however, groundwater would be required to supplement the Lessalt WTP supply during the higher-demand, summer months. The water quality will change seasonally based on the amount of groundwater entering the distribution system. The customers located nearest to the existing wells will be the most impacted by the shift in water quality. The estimated wastewater quality under Scenario B is shown in Figure 3-7.

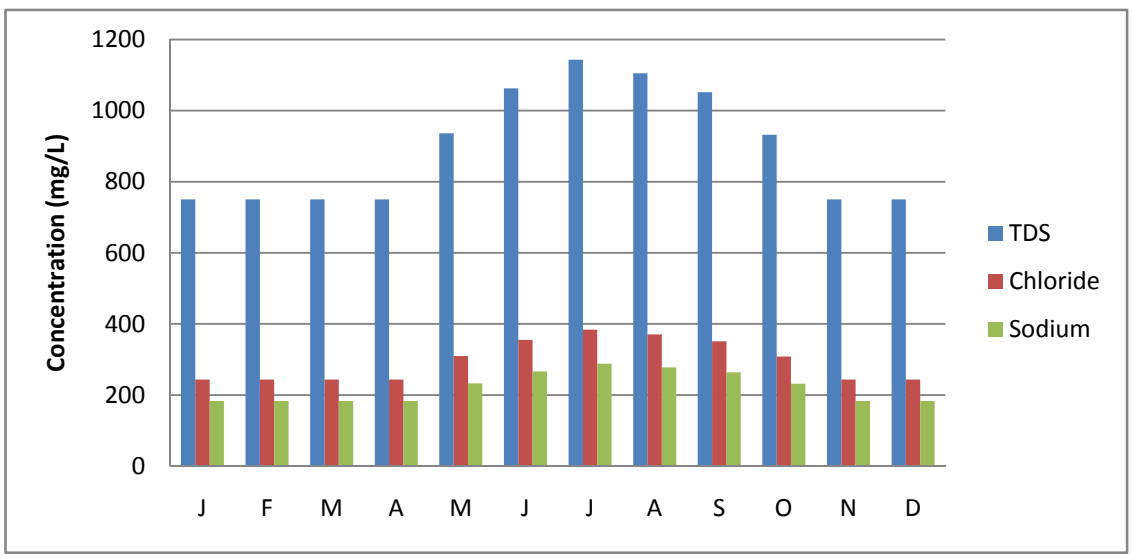


Figure 3-7. Estimated Wastewater Quality, Operational Scenario B – Delivery of 0.712 mgd

The estimated wastewater quality for Scenario B exceeds both the sodium and chloride requirements during the summer months. To meet the WDR requirements, an estimated 75 percent of water softeners would need to be removed or replaced with non-brine discharging softeners, as shown in Table 3-4. Since the water quality will vary throughout the year for much of the distribution system, it is unlikely that residents would voluntarily remove their water softeners under this scenario.

4.0 Groundwater Treatment

The recommended near-term groundwater treatment in the Master Plan included demineralization at three City wells and one SSCWD well and two softening plants in the SSCWD service area. The softening plants were recommended to allow SSCWD to meet its immediate WDR requirements for its Ridgemark Wastewater Treatment Plant, as described in Section 1.1.2. The plan was to add demineralization at the SSCWD softening plants in a later phase in order to meet the water quality goals in the MOU.

As described in the previous section, treated water will be provided to the Ridgemark service area through the upgraded Lessalt WTP. This revised plan will allow SSCWD to work with the other MOU Members in developing the best and most cost-effective regional groundwater treatment plan. However, several groundwater treatment-related studies were conducted prior to the Lessalt WTP supply solution, including a groundwater treatment evaluation, site evaluation, and concentrate management evaluation. These studies are summarized in this section so that the information can be used and built upon as a regional groundwater treatment program is further developed.

In addition, several demineralization project enhancements have been developed to provide additional benefits, reduce costs, and improve opportunities for outside funding. These enhancements are also described below, followed by a proposed strategy for time phased implementation of a regional groundwater treatment program.

4.1 Groundwater Treatment Alternatives Analysis

The *Potable Water Improvements – Treatment Process Selection TM*, completed in July 2009 and included as Appendix B, evaluated groundwater treatment alternatives for the Ridgemark service area. The evaluation was focused on improving groundwater quality for the Ridgemark service area to meet the WDR salinity requirements and the MOU water quality goals. The groundwater treatment alternatives evaluated included demineralization with a reverse osmosis (RO) membrane process and lime softening. Brine disposal and sludge treatment were also evaluated as part of this analysis.

The results of the analysis, based on treating water from SSCWD Well No. 8, are summarized in Table 4-1.

Table 4-1. Groundwater Treatment Analysis Results

Parameter	MOU Water Quality Goal	Raw Water, Well No. 8	Alt 2a - RO, VSEP, Evaporation Ponds[(a)]	Alt 2b - RO, Evaporation Ponds[(a)]	Alt 3 - Lime Softening, Sludge Drying [(b)]
TDS, mg/L	500	811	247	247	547
Total Hardness, mg/L as CaCO3	110	417	120	120	120
Calcium, mg/L as CaCO3	--	195	21	21	80
Magnesium, mg/L as CaCO3	--	218	16	16	40
Sodium, mg/L	--	108	31	31	110
Chloride, mg/L	--	115	33	33	130
Brine / Sludge Disposal Area, acres [(c)]	--	-	20	50	10

(a) Data based on results of pilot test of Hydronautics membranes (74% demineralized water blended with groundwater).
(b) Data based on Trussell TM, Alternative #8.
(c) Acreage requirement is based on the brine produced at a facility with an annual average flow of 0.71 mgd with 83% water recovery.

As shown in Table 4-1, demineralization with RO membranes could yield a water quality that would meet all of the potable water quality goals and enable SSCWD to meet its WDR requirements. However, the process is very energy intensive and can create a significant quantity of brine. Brine disposal, or concentrate management, requires significant land area for evaporation ponds (50 acres for a 0.71 mgd facility) or complex, and often energy intensive technology for advanced brine concentration such as the Vibratory Shear Evaporation Process (VSEP). Concentrate management is described further in Subsection 4.3.

Several lime softening approaches were also evaluated for their ability to treat the water from SSCWD Well No. 8. While lime softening could result in a water quality that would enable SSCWD to meet the WDR requirements, none of the treatment approaches evaluated were able to simultaneously achieve both TDS and total hardness goals from the MOU. However, one approach which used both lime and potassium carbonate, was found to achieve most of the water quality objectives, while nearly achieving the TDS goal.

A combined treatment facility with lime softening followed by demineralization would meet the water quality goals. The combined treatment process would use lime softening as the primary treatment process and would include a smaller demineralization process train that would treat enough water to meet the water quality goals. A combined facility would reduce the volume of brine produced by demineralization and could be advantageous as the costs of lime softening facilities are less than that of reverse osmosis and concentrate management facilities. The feasibility of a combined facility should be further evaluated.

4.2 Groundwater Treatment Site Selection Analysis

The *Potable Water System Improvements - Site Selection TM*, completed in July 2009 and included as Appendix C, identified and evaluated sites for implementation of a groundwater treatment facility for the Ridgemark service area. Although sites for a long-term regional project were not the primary focus of the evaluation, large site or sites that would be advantageous for future expansion were generally ranked higher. The sites identified and evaluated are shown in Figure 4-1, and include:

- Bray/Brigantino,
- Campisi,
- County Quarry,
- Lower Lompa,
- RMK II, and
- Upper Lompa, Well #8.

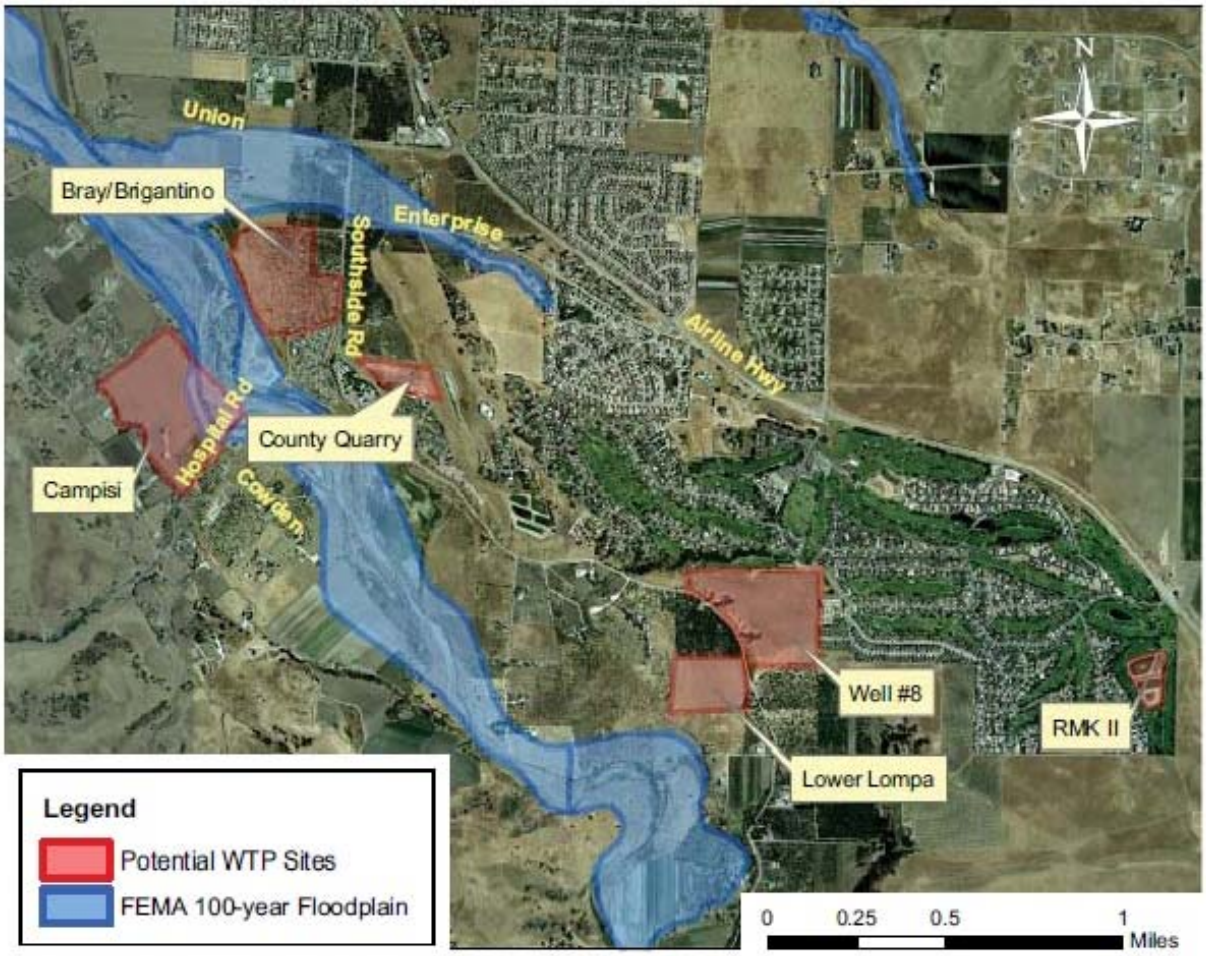


Figure 4-1. Potential Groundwater Treatment Plant Sites

The site evaluation criteria and weighting factors are presented in Table 4-2. The site evaluation indicates that the Bray/Brigantino site has the greatest potential for expansion and the lowest pipeline infrastructure and land costs. Pipeline infrastructure is minimized as the site is close to existing and planned well sites and is close to the existing distribution system. The available acreage, 38 acres, and location make the site advantageous for future expansion and a potential regional project. The biggest challenge for the site is the agricultural land designation that may need to be amended.

Table 4-2. Groundwater Treatment Site Evaluation

Parameter	Weighting Factor	Upper Lompa	RMK II and Lower Lompa	Campisi	County Quarry and Lower Lompa	Bray/ Brigantino
Property Acquisition Constraints	10%	0.10	0.50	0.30	0.30	0.30
Total/available acreage	15%	0.62	0.32	0.75	0.39	0.47
Cost estimate	20%	0.60	0.20	0.80	0.70	1.00
Topography and site development	3%	0.15	0.06	0.15	0.06	0.15
Land use/designation	10%	0.30	0.50	0.10	0.30	0.10
FEMA 100-year floodplain	10%	0.50	0.50	0.20	0.50	0.50
Proximity to the earthquake fault zone	7%	0.35	0.35	0.35	0.14	0.35
Potential environmental impacts	10%	0.30	0.30	0.40	0.40	0.40
Compatibility w/ future regional project	15%	0.15	0.15	0.60	0.60	0.75
Combined Score	100%	3.07	2.88	3.65	3.39	4.02
Rank		4	5	2	3	1

The second best alternative is the 52 acre Campisi site. A portion of the Campisi site is within the flood zone but development in that area could be avoided. If a land intensive alternative for concentrate management is selected, both the Bray/Brigantino and Campisi sites could be purchased. The Bray/Brigantino site would be an ideal treatment plant site with concentrate management facilities located at both Bray/Brigantino and Campisi.

4.3 Concentrate Management Alternatives

For demineralization projects, concentrate management is often the most challenging aspect of the project, particularly for projects located inland which do not have readily available access to an ocean outfall for discharge. The goal is to find the most cost-effective concentrate

management alternative for the project. Concentrate management strategies are comprised of two distinct components including:

- Concentration of the Concentrate Stream
  - Evaporation Ponds
  - Advanced Concentration
- Salt Disposal
  - Salt/Concentrate to a Landfill
  - Salt/Concentrate to the Ocean
  - Deep-Well Injection

The *Potable Water System Improvements – Concentrate Management Alternatives TM*, completed in September 2009 and included as Appendix D, identified and described several alternatives for concentrate management for a groundwater treatment facility. This subsection summarizes the concentration and disposal options described in that TM.

4.3.1 Concentration Alternatives

The following subsections describe both evaporation ponds and advanced concentration methods, including Vibratory Shear Evaporation Process (VSEP) and chemical precipitation.

4.3.2 Evaporation Ponds

Evaporation ponds use solar energy to heat and evaporate water from brine, depositing salts in ever greater concentrations or as a solid on the pond floor. This technology has an advantage in the Southwestern part of the U.S., where evaporation rates are high, and in those areas where land is relatively inexpensive.

Evaporation ponds require less energy and manpower to operate and maintain. This concentration method has low operation and maintenance costs, primarily including pumping costs and concentrated brine disposal costs. Solids must be removed once the storage capacity has been exhausted. Multiple ponds are typically constructed to allow for periodic maintenance.

Design and construction of evaporation ponds are subject to combined SWRCB and California Integrated Waste Management Board Regulations, Division 2, Title 27 for Designated Waste, which among other things, requires liners to be installed to cover all natural geologic materials.

4.3.2.1 Advanced Concentration

Two advanced concentration alternatives were considered and are discussed in the following subsections.

Vibratory Shear Enhanced Process (VSEP). VSEP is a process that uses membrane vibration to minimize surface binding allowing for high water recoveries and minimization of brine flow. This technology was developed by New Logic and uses a proprietary polymeric membrane. The main advantage of this system is high process recovery, without using chemical precipitation processes or thermal energy. However, this technology has not yet been applied for use in municipal water treatment.

Chemical Precipitation with a Secondary RO Process. This alternative uses a chemical precipitation process, such as lime softening, to remove minerals from the concentrate stream such that the concentrate can undergo a second RO pass. In the primary RO system, water recovery becomes limited as the concentrations of scaling constituents (i.e. calcium carbonate, calcium sulfate, and silica) increase. This alternative treats the concentrate from the primary RO system using a chemical precipitation process to reduce the scaling potential of the concentrate. Subsequently, the treated flow is then sent through microfiltration and a secondary RO process for further water recovery.

4.3.3 Salt Disposal Alternatives

The following subsections describe three salt disposal alternatives, including ocean discharge, landfill, and deep well injection.

4.3.3.1 Ocean Discharge

Salt disposal at an ocean discharge requires a transmission pipeline or hauling from the water treatment facility to an ocean outfall. A pipeline to the ocean is not considered as a viable near-term option due to cost for implementation and jurisdictional challenges. Trucking of brine directly from a demineralization plant without going through a concentration step is not a practical option. However, in combination with a brine concentration facility, trucking of brine to the City of Watsonville outfall could be viable.

4.3.3.2 Land Fill

Salt classified as a non-hazardous waste can be disposed of at a Class III landfill. A Class III landfill has at least a portion of the landfill lined to protect groundwater. Three landfills in the area are suitable for salt disposal including:

- Monterey Regional Waste Management District – Marina Landfill
- Salinas Valley Solid Waste Authority – Crazy Horse Landfill
- Salinas Valley Solid Waste Authority – Johnson Canyon Landfill.

Disposal of salt at a landfill would require hauling and tipping fees. Additionally, some landfills may only accept salt wastes during specific periods of the year.

4.3.3.3 Deep Well Injection

This alternative uses injection wells to place brine waste into a non-beneficial geologic formation that have no potential to allow migration of contaminants into potential potable water aquifers. A typical injection well consists of concentric pipes that extend several thousand feet down from the surface level into highly saline, permeable injection zones that are confined vertically by impermeable strata. Well depths can reach as much as 10,000 ft deep, and in some cases, the concentrate may require pretreatment to remove solids in order to prevent plugging of the injection site. Additionally, injection wells typically operate at high pressures, from 200 psi to 500 psi, and failure of an injection well can lead to groundwater contamination. A backup disposal method or brine storage facility is typically also required.

Based on a preliminary review of historic gas and oil well data in San Benito County, deep well injection could be a viable disposal alternative. *Deep Injection Well Feasibility Study* (All Consulting, January 2008) identified potential injection zones in the region between 1,500 ft to 4,500 ft below ground surface. Additional investigation and studies would need to be completed to confirm the feasibility of this disposal option.

4.4 Demineralization Enhancements

Several enhancements have been developed to provide additional benefits, reduce costs, and improve opportunities for outside funding. As shown in Figure 4-2, the enhancements include time phased implementation of demineralization beginning with City Well No. 1, development of brackish wetlands and greenbelt habitat for brine management, and utilizing renewable energy to supplement power requirements and reduce operating costs. Each of the project enhancements are described in the following subsections.

4.4.1 City Well No. 1

City Well No. 1, located near the intersection of San Felipe and McCloskey Road, is currently off-line due to high nitrate levels. Demineralization at Well No. 1 has several advantages. First, it has a relatively high capacity; at 2,400 gpm (3.45 mgd), it would be the largest well in

service. Therefore, bringing this well back on-line would add a significant source of water to the system and reduce the need for additional new wells in the future. It is also located at a point in the distribution system to provide improved drinking water to West Hollister.

A demineralization project for Well No. 1 may also get higher priority for Safe Drinking Water Act (SDWA) State Revolving Funds (SRF) because the nitrate levels exceed drinking water standards thus creating a health concern, as opposed to hardness and TDS which are primarily an aesthetic concern. Removing the high nitrate water from the groundwater basin will, in the long-term, help clean up the groundwater basin, and in turn, provide a means of justifying an application for SDWA SRF funding.

Due to the many benefits associated with Well No. 1 and specifically the potential funding opportunities that a demineralization facility at Well No. 1 could attract, it will be the focus of initial funding applications.

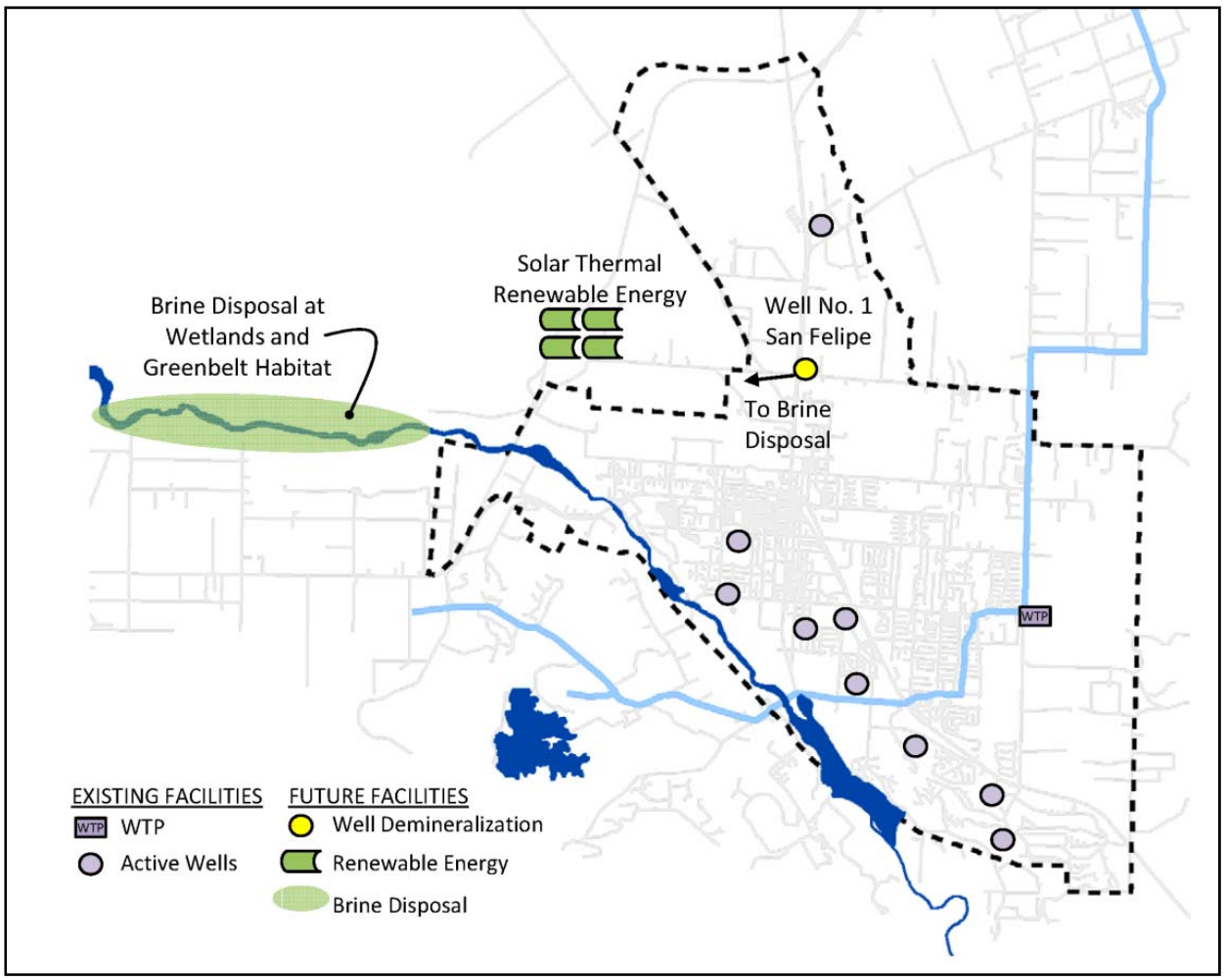


Figure 4-2. Demineralization Enhancements

4.4.2 Wetland and Greenbelt Habitat Brine Management

As described in Section 4.3, there are many alternatives for brine management and disposal. Using wetlands and greenbelt habitat, brine would be concentrated in a series of ponds and plant habitats of increasing salinity. The wetlands and greenbelt habitat could be constructed along the San Benito River and integrated with the River Parkway project being developed by San Benito County.

Wetlands would be constructed as long, narrow, serpentine ponds designed to avoid stagnation. The ponds would be lined to minimize percolation, avoid regulatory concerns, and to be consistent with the GMP EIR. The brine would be used to irrigate salt tolerant and halophytic plants (e.g., eucalyptus and acacia), using evapotranspiration as the primary method of brine disposal. The ponds could create a wetlands habitat for a range of plants, fish and animals, providing an environmental benefit. Long, narrow ponds could also be sited to provide some level of flood control protection for local farms (as a barrier) and for downstream communities (storage).

Brine management must address the ultimate fate of the salinity removed from the groundwater. For the portion of brine evaporated in wetland ponds, the concentrated brine could be dried and disposed of in a landfill, or disposed of at an ocean discharge or using deep well injection. For the portion of the brine used to irrigate habitat, salt would either be retained in the soil or flushed down the San Benito River during local rains.

In addition to the providing additional environmental and community benefits, utilizing wetland and greenbelt habitat for brine management could open new opportunities for outside funding for the demineralization program, such as California Proposition 84 park funding and Clean Water Act SRF loans. If the wetlands and greenbelt habitat were designed to also manage agricultural drainage, additional funding opportunities from the US Department of Agriculture could also become possible.

4.4.3 Renewable Energy

The final enhancement identified for the demineralization program is a provision for renewable energy. Reverse osmosis is an energy intensive process, thus providing a source of renewable energy could reduce future operating costs for electricity and provide a steady electricity rate such that the facility is less vulnerable to peak demand price spikes. In addition, providing renewable energy may enable acquisition of grant funding and/or subsidized loans from the

American Recovery and Reinvestment Act, which includes several programs for renewable energy projects.

Considering the location and purpose of use, solar power may be the best option for renewable energy. Solar power is most efficient on hot summer days, which coincides with peak demands for both water and power. Solar power could be installed in modular phases such that solar capacity is added in correlation with demineralization capacity.

The primary new source of external funding for sustainable desalination is likely to be the federal economic stimulus package. Funds that could be used to offset the cost of renewable energy include:

- Energy Efficiency and Renewable Energy programs which encourage renewable energy;
- Electricity Delivery and Energy Reliability which encourage projects to help the electric grid; and
- Innovative Technology Loan Guarantee Program for credit subsidies to promote renewable technology.

Solar power could also be eligible for financial incentives from Pacific Gas and Electric (PG&E) under the California Solar Initiative.

4.5 Time Phasing of Demineralization Facilities

A time phased implementation plan, shown in Figure 4-3, has been developed for the new water treatment facilities, and specifically for the demineralization facilities. Following the Lessalt WTP upgrade to 3.0 mgd in 2012, a second 3.0 mgd plant would be built to treat surface water purchased on the spot market, and later, to treat groundwater from the North County or local surface water. With these two treatment plants in operation, the drinking water hardness will be reduced from approximately 390 mg/L to approximately 270 mg/L, and as shown in Figure 4-3, the expected recycled water TDS concentration will be between 800 to 900 mg/L during the summer months. While these reductions represent an improvement over current conditions, some demineralization will be required to achieve the recycled water quality goal.

As described in subsection 1.1.3, although the MOU established a recycled water TDS target of 500 mg/L, initial meetings with interested growers indicate that a TDS concentration in the range of 700 mg/L would be acceptable. The MOU also stipulated that the water quality

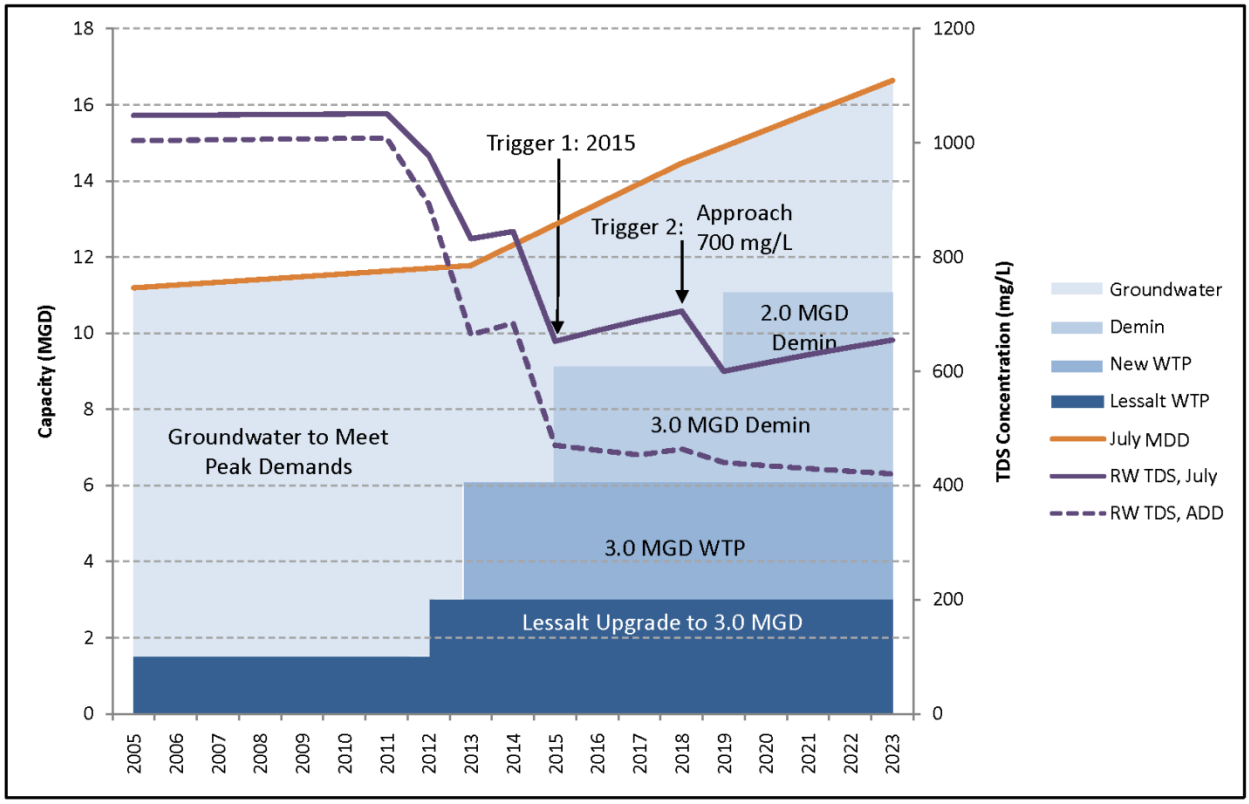


Figure 4-3. Demineralization Phasing

objectives should be achieved as soon as practical, but not later than 2015. Therefore, the first trigger for implementation of a demineralization facility is associated with providing recycled water with a TDS of approximately 700 mg/L by 2015, consistent with the MOU schedule and current understanding of agricultural irrigation requirements.

The first demineralization facility would have a 3.0 mgd capacity and would be targeted to treat water from City Well No. 1, because, as described in subsection 4.4.1, this well is currently out of service due to nitrate contamination. The addition of this demineralization facility will further reduce the drinking water hardness from 270 mg/L to 180 mg/L during the summer months, and to 80 mg/L on an average annual basis.

As shown in Figure 4-3, a second, 2.0 mgd demineralization facility would be needed in 2018 to maintain the recycled water TDS below 700 mg/L. With the second demineralization facility in operation, the drinking water hardness will remain in the range of 150 mg/L to 180 mg/L during the summer months, and 60 mg/L to 80 mg/L on an average annual basis.

5.0 Recommended Plan

The coordinated water supply and treatment plan consists of initial steps recommended in the Master Plan and refined to reflect current conditions. The treatment facilities include upgrading the Lessalt WTP and time phased groundwater treatment to reduce hardness and total dissolved solids. Firming up the water supply for the Lessalt WTP and a new surface water treatment plant will require accelerating some of the options identified as long-term water supplies in the Master Plan. Major benefits from the coordinated water supply and treatment plan include improvements to drinking water and recycled water quality in the most cost-effective manner. The recommended facilities are shown in Figure 3-5 and Figure 4-2.

5.1 Surface Water Treatment

Surface water is the most cost-effective source of high quality water for the Hollister Urban Area. Therefore, maximizing the use of surface water supplies was the recommended first step in the Master Plan. Surface water treatment will be provided through the Lessalt WTP and a new second surface water treatment plant.

5.1.1 Lessalt Water Treatment Plant

Improvements to the Lessalt WTP may include the following:

- Hydraulic improvements to allow consistent production of 3.0 mgd.
- Process improvements to meet the Stage 2 Disinfectant and Disinfection Byproducts Rule.
- Process improvements to allow removal of iron and manganese from water supplied from San Justo Reservoir.
- Review of existing membranes to determine remaining useful life and need for replacement.

These improvements will allow the Lessalt WTP to consistently produce 3.0 mgd and meet all current drinking water regulations.

In addition to the hydraulic and process improvements, the water supply to the Lessalt WTP must be firmed up to provide a reliable supply of treated water. Although a sufficient entitlement of M&I supply has been established by the SBCWD through the USBR CVP contract, the actual supply is limited due to shortages from the ongoing drought and Delta pumping restrictions.

To firm up the water supply, several alternatives have been identified including spot market purchases, longer-term contract purchases, local seasonal surface water supplies, and high

groundwater from North County. To reduce the risk associated with supplemental water supply development, it is recommended that all of these alternatives be investigated further to ensure that one or more alternatives are available in a timely manner. Initial investigations indicate that sufficient supply may be available from local sources to allow expansion of the Lessalt WTP to 4.5 mgd and/or construction of a second surface water treatment plant.

Finally, a new pump station and pipeline would be constructed to provide treated water to the Ridgemark area of SSCWD's service area. This transmission system would provide treated water to Ridgemark to allow compliance with the Waste Discharge Requirements of the upgraded wastewater treatment plant and would also facilitate the use of recycled water. Use of recycled water at the Ridgemark Golf Course would also free up M&I CVP supply for other uses.

5.1.2 New Surface Water Treatment Plant

The second surface water treatment plant would be sized to provide approximately 6,000 AF of treated water in conjunction with the Lessalt WTP. It will be constructed at a location to provide a high quality drinking water supply to the western areas of the City that currently receive groundwater.

Water supply for the new water treatment plant will be developed consistent with: (1) the MOU dated December 2004; (2) the current contracts between SBCWD and the USBR; (3) SBCWD to satisfy the results of feasibility studies; (4) the needs of the urban water users; and (5) subsequent agreements amongst the parties. Potential supplies include additional imported surface water and/or water from high groundwater areas in North County.

5.2 Groundwater Treatment

The recommended groundwater treatment in the Master Plan was phased demineralization using reverse osmosis. Time phased implementation of the demineralization facilities was proposed to minimize initial capital costs, evaluate the effectiveness of blending, and take advantage of improving technology and the potential future lower cost of membranes.

The recommended time phasing of groundwater demineralization is based upon maintaining recycled water quality at approximately 700 mg/L TDS. This phasing results in 3.0 mgd of demineralization capacity by 2015 and an additional 2.0 mgd by 2019 for a total of 5.0 mgd. Additional demineralization facilities would be based on needs determined by water quality and

growth. Availability of outside funding sources may accelerate implementation of the groundwater demineralization facilities.

In the Master Plan, groundwater treatment was recommended for the Ridgemark service area to reduce salinity and allow compliance with Waste Discharge Requirements. However, as described in the previous subsections, treated water will now be provided to Ridgemark through the upgraded Lessalt WTP. This revised plan will allow SSCWD to work with the other MOU Members in developing the most cost-effective regional groundwater treatment plan.

As part of completing this coordinated water supply and treatment plan, several enhancements have been developed to provide additional benefits, reduce costs, and improve opportunities for outside funding for the groundwater treatment facilities. Enhancements include utilizing renewable energy (solar and/or wind) to supplement power needs and developing brackish wetlands for brine disposal.

An additional refinement would be to locate the first phase of demineralization at City Well No. 1. This well has a capacity of 2,400 gpm (3.4 mgd) and has been inactive for several years due to high nitrate levels. Demineralization at Well No. 1 would reduce hardness, total dissolved solids, and nitrates providing the opportunity to put this high capacity well back in service. The well is north of the City, in an ideal location to provide significant water quality benefits to the northern and western areas of the City.

The location of future wellhead or centralized groundwater treatment is still being evaluated. Several potential sites for a centralized treatment plant south of the City have been identified and evaluated. Results of work to date by SSCWD indicate that two feasible sites are the 38 acre Brigantino parcel located north of Hospital Road on the east side of the San Benito River and the 52 acre Campisi property located north of Hospital Road on the west side of the San Benito River. These sites are located near City and SSCWD wells. These sites are also along the Hollister Conduit which would provide the potential for collocating the second surface water treatment plant.

The final treatment process recommendations which may include softening, demineralization, or a combination are still under review. Selection of a final process recommendation will be based upon capital and O&M costs, energy consumption, and operational considerations.

5.3 Estimated Costs

Preliminary cost estimates for the proposed water supply and treatment facilities are summarized in Table 5-1. These cost estimates assume implementation of a North County wellfield to firm up supply to the Lessalt WTP and provide supply to a potential new water treatment plant.

Table 5-1. Preliminary Cost Estimates for Water Supply and Treatment Facilities

Facilities	Estimated Cost
Lessalt WTP Upgrade	$4,100,000 [(a)]
Pump Station and Pipeline from Lessalt WTP to Ridgemark	2,800,000 [(b)]
North County Wellfield	12,600,000 [(c)]
New Surface Water Treatment Plant	10,900,000 [(d)]
Phased Groundwater Demineralization	48,800,000 [(e)]
Total	$79,200,000

(a) Based upon preliminary estimates for hydraulic improvements and membrane replacement. Costs for process modifications for Stage 2 D/DBP Rule compliance are currently being developed and are not included in this estimate.
(b) Some of these costs to be allocated to the Lessalt WTP upgrade.
(c) Based upon annual potential production capacity of 4,900 ac-ft pumped and delivered to the Hollister Conduit.
(d) Assumes a new 3.0 mgd membrane water treatment plant.
(e) Estimate from Master Plan revised to reflect reduction in demineralization capacity from 7.1 mgd to 5.0 mgd.

The water supply and treatment costs total $79.2 million compared to $96.2 million in the Master Plan for facilities providing similar benefits, resulting in a cost reduction of $17.0 million. The projected expenditures through 2015 total an estimated $66.0 million.

The estimated costs per ac-ft are summarized in Table 5-2. These unit costs include those presented previously in Table 2-2, as well as costs for supplies using additional imported water at spot market rates and water from a North County wellfield. These unit costs confirm previous conclusions regarding the cost-effectiveness of maximizing use of the Lessalt WTP. Unit costs for water supplied from an upgraded Lessalt WTP are approximately one-third the cost of water provided by regional groundwater demineralization facilities. Unit costs for water supplied by a second water treatment plant will be comparable to the unit costs of supplies from the Lessalt WTP.

Table 5-2. Estimated Costs of Alternative Water Supplies

Alternative Supply	Estimated Unit Cost ($/AF)
Existing Lessalt WTP with CVP Supply[(a)]	413
Upgraded Lessalt WTP at Design Capacity with CVP Supply[(b)]	454
Upgraded Lessalt WTP with CVP and Spot Market Supplies[(c)]	600 – 650
Upgraded Lessalt WTP with CVP and North County Groundwater Supplies[(d)]	600 – 650
Phased Groundwater Demineralization	2,000 – 2,250

(a) Based on 1,840 AF average annual production from 2003 through 2008.
(b) Based on 3,360 AF annual production at original design capacity.
(c) Assumes 50 percent CVP and 50 percent spot market supplies at $500 per ac-ft.
(d) Assumes 50 percent CVP and 50 percent North County groundwater supplies.

The unit costs presented in Table 5-2 indicate that if sufficient water supplies can be developed, a second water treatment plant would be cost-effective.

Phased demineralization of groundwater remains a key and integral component of the coordinated water supply and treatment plan. Supplemental local surface water and high quality groundwater supplies from North County have limited capacity. In addition, demineralization and the use of urban groundwater is required to maintain the hydrologic balance, provide reliability, improve drinking water quality, facilitate use of recycled water, and reduce salt loading to the groundwater basin.

5.4 Schedule

A preliminary schedule for implementation of the coordinated water supply and treatment plan is presented in Figure 5-1. As shown on the preliminary schedule, development of the North County wellfield will be completed after the Lessalt WTP upgrade. Depending upon the availability of CVP supplies, spot market or short-term contract purchases of imported water may be required on an interim basis to supply the upgraded Lessalt WTP.

The first phase of the groundwater demineralization facilities are schedule to be completed by 2015 consistent with the schedule provided in the Master Plan.

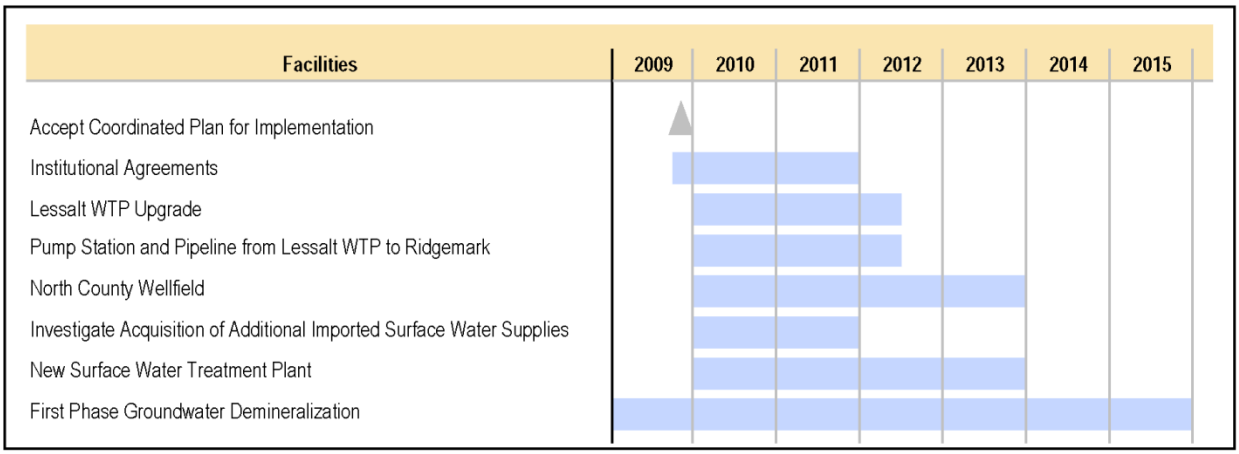


Figure 5-1. Coordinated Water Supply and Treatment Plan Implementation Schedule

Successful implementation of the phased demineralization facilities is highly dependent upon developing a favorable financial plan and equitable cost allocation. Numerous opportunities are also being pursued for supplemental outside funding from state and federal sources.

5.5 Next Steps

The recommended next steps for implementation of the coordinated water supply and treatment plan include the following:

- Complete predesign of the Lessalt WTP to eliminate hydraulic constraints and provide process improvements. The hydraulic improvements should evaluate benefits and costs for expansion beyond 3.0 mgd. Complete evaluation of process improvement alternatives for the Lessalt WTP to meet the Stage 2 D/DBP Rule and to treat water from San Justo Reservoir with high concentrations of iron and manganese. Process options for meeting the Stage 2 D/DBP Rule should include the following:
  - Oxidation, coagulation, microfiltration (MF), free chlorine disinfection, and chloramination for distribution system residual;
  - Oxidation, coagulation, MF, granular activated carbon (GAC), and free chlorine disinfection;
  - Oxidation, coagulation, MF, and nanofiltration (NF) treatment;
  - Oxidation, coagulation, MF ozone disinfection, and biological GAC treatment; and
  - MIEX process, oxidation, coagulation, MF, and free chlorine disinfection.

The process evaluation should include completion of the proposed nanofiltration pilot testing, collection of operational data from plants with processes similar to those proposed for the Lessalt WTP, and bench scale testing of options for iron and manganese removal.

- Initiate hydrogeologic and facilities planning studies of a North County wellfield and groundwater bank. Include an evaluation of potential conjunctive use operations using local seasonal streams and Pacheco Creek. Investigate current status of Water Rights Decision No. 187, dated 1928, for 11,000 acre-feet of water from Pacheco Creek and originally issued to the Hollister Irrigation District. Initiate discussions with Pacheco Pass Water District regarding coordinated operations of Pacheco Reservoir, Pacheco Creek and Arroyo de las Viboras.

- Determine the availability and cost of additional imported surface water supplies, including spot market, contract purchase, and out-of-basin banking.

- Complete further evaluation of operational scenarios and complete institutional negotiations for use of Lessalt WTP water supplied to Ridgemark, including providing average day or maximum day demand.

- Implement a water softener removal or replacement program in the Ridgemark service area in conjunction with the new supply from the Lessalt WTP. This activity should be coordinated with previous work by the Water Resources Association of San Benito County for the entire Hollister Urban Area.

- Request an extension from the Regional Board for the Ridgemark Wastewater Treatment Plant Waste Discharge Requirements to match the implementation schedule in this coordinated water supply and treatment plan.

- Evaluate the feasibility and sizing of a new surface water treatment plant to serve the Hollister Urban Area. This new water treatment plant will be located to provide high quality water to the western areas of the City. Complete modeling of water distribution system to determine the capacity and optimum location of this new surface water treatment plant.

- Continue site selection studies for time phased demineralization facilities. Investigate use of City Well No. 1 for the initial demineralization facility. Complete modeling of water distribution system to confirm water quality benefits provided by this facility.

- Finalize process recommendations for groundwater treatment. Continue evaluation of brine disposal options including development of brackish wetlands. Investigate development of brackish wetlands on sites previously evaluated by SSCWD, including locations near Union and Hospital Roads along the San Benito River and lands formerly and currently used for quarry operations. Coordinate development of brackish wetlands with plans being developed by San Benito County for the River Parkway project.

- Continue active pursuit of outside funding from state and federal agencies to support implementation of the integrated water resources program for the Hollister Urban Area.

- Initiate CEQA on Master Plan and initial water supply and treatment projects.

Appendices (Bound Separately)

A. Hollister Conduit Hydraulic Analysis

B. SSCWD Potable Water System Improvements - Treatment Process Selection

C. SSCWD Potable Water System Improvements – Site Selection

D. SSCWD Potable Water System Improvements – Brine Disposal Alternatives

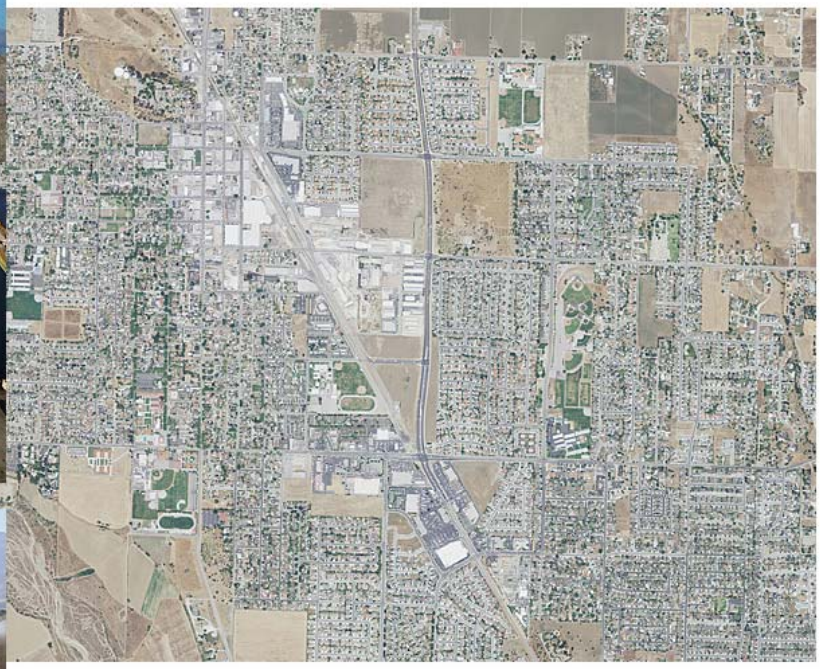
E. Potential Funding Opportunities for the Hollister Urban Area Demineralization Program

EXHIBIT 7.8

HUA WATER AND WASTEWATER MASTER PLAN AND COORDINATED WATER SUPPLY AND TREATMENT PLAN PEIR, 2011

Final Program Environmental Impact Report

Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan



State Clearinghouse #
2010061069

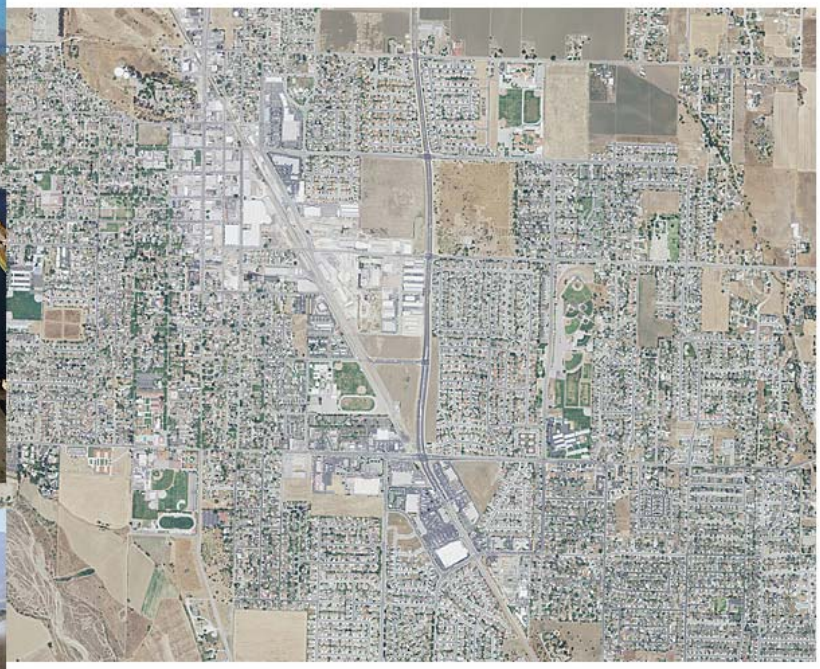
Lead Agency:

San Benito County Water District

January 2011

Final Program Environmental Impact Report

Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan



Lead Agency:

San Benito County Water District
30 Mansfield Road
Hollister, CA 95024-0899

Contact:

Jeff Cattaneo
District Manager
831/637-8218

Prepared by:

AECOM
2020 L Street
Sacramento, CA 95811

Contact:

Samantha Salvia, PE
Project Manager
415/955-2800

10110066.01

January 2011

TABLE OF CONTENTS

Section		Page
ACRONYMS AND ABBREVIATIONS		**v**
EXECUTIVE SUMMARY		**ES-1**
ES.1	Program Purpose and Objectives	ES-1
ES.2	Program Background	ES-1
ES.3	Program Need	ES-2
ES.4	Purpose of This Program EIR	ES-2
ES.5	Program Overview	ES-3
ES.6	Program Alternatives	ES-3
ES.7	Environmentally Superior Alternative	ES-5
ES.8	Areas of Controversy	ES-6
ES.9	Issues to Be Resolved	ES-6
ES.10	Summary of Environmental Impacts	ES-6
ES.11	Public Review and Comment	ES-39
1	**INTRODUCTION**	**1-1**
1.1	Program Purpose and Objectives	1-1
1.2	Program Location and Study Area	1-2
1.3	Program Background	1-2
1.4	Program Need	1-4
1.5	Purpose of This Program EIR	1-7
1.6	Public Participation and the CEQA Process	1-9
1.7	~~Draft~~ PEIR Organization	1-10
2	**PROGRAM DESCRIPTION**	**2-1**
2.1	Program Overview	2-1
2.2	Water	2-3
2.3	Wastewater	2-14
2.4	Recycled Water	2-15
2.5	Non-Structural Solutions	2-17
2.6	Summary of Program Element Construction	2-18
3	**ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION**	**3-1**
	Approach to Environmental Analysis	3-1
3.1	Geology, Soils, and Mineral Resources	3.1-1
3.2	Water Resources	3.2-1
3.3	Biological Resources	3.3-1
3.4	Land Use and Agriculture	3.4-1
3.5	Cultural and Historic Resources	3.5-1
3.6	Paleontological Resources	3.6-1
3.7	Population, Employment, and Housing	3.7-1
3.8	Utilities and Public Services	3.8-1
3.9	Hazards and Hazardous Materials	3.9-1
3.10	Transportation and Traffic	3.10-1
3.11	Air Quality and Global Climate Change	3.11-1
3.12	Noise	3.12-1
3.13	Recreational Resources	3.13-1
3.14	Visual Resources	3.14-1

TABLE OF CONTENTS

Continued **Page**

4 CUMULATIVE IMPACTS 4-1
4.1 Approach 4-1
4.2 Cumulative Effects Analyzed Previously in 2003 Groundwater Management Plan Update EIR 4-1
4.3 Cumulative Impact Analysis 4-3

5 PROGRAM ALTERNATIVES 5-1
5.1 Alternatives Development 5-1
5.2 No Program 5-6
5.3 Alternative 1—Increase Imported Surface Water 5-9
5.4 Alternative 2—Utilize Local Surface Water Supplies 5-11
5.5 Alternative 3—Demineralize Urban Wells 5-12
5.6 Alternative 4—Utilize water from High Groundwater Basins 5-14
5.7 Environmentally Superior Alternative 5-16

6 OTHER CEQA-REQUIRED SECTIONS 6-1
6.1 Growth-Inducing Impacts 6-1
6.2 Significant Irreversible Environmental Impacts 6-4
6.3 Significant and Unavoidable Environmental Impacts 6-4

7 REPORT PREPARERS AND REVIEWERS 7-1

8 REFERENCES 8-1

9 PUBLIC REVIEW AND COMMENT 9-1

10 ERRATA–EDITS TO THE PEIR 10-1

Appendices

A Notice of Preparation and Comment Letters
B Noise Modeling Results
C Proof of Publication of Scoping Ad
NOC with Clearinghouse Stamp
County Fair Flyer
Mailing List
Proof of Publication of Draft PEIR Public Hearing Ad
SBCWD Website Screen Capture
Meeting Sign-in Sheet
Letter from SWRCB on DEIR
Letter from State Clearinghouse Confirming One Response Letter

Figures

1-1 Regional Map of Hollister Urban Area 1-3
1-2 PEIR Study Area 1-5

2-1 Implementation Phasing of Program Elements 2-2
2-2 Existing Percolation Sites in Vicinity of Proposed North County Groundwater Bank 2-6
2-3 Location of Target High Groundwater Reduction 2-7
2-4 Potential Water Treatment Plant Locations 2-11
2-5 Phase 2 Recycled Water Facilities 2-16
2-6 SSCWD Wastewater Service Area 2-19

TABLE OF CONTENTS

Continued **Page**

3.1-1 Alquist-Priolo Fault Zones 3.1-2
3.1-2 Active Faults in the Program Region 3.1-3
3.1-3 Soil Series in the Study Area 3.1-9
3.1-4 Mineral Resources in the Study Area 3.1-13

3.2-1 FEMA Floodzone Map 3.2-3
3.2-2 Groundwater Subbasins 3.2-5
3.2-3 TDS Concentrations in Groundwater 3.2-11

3.3-1 Land Use in the Study Area 3.3-2
3.3-2 Special-Status Species Previously Documented Within a 1-Mile Buffer of the Study Area 3.3-7
3.3-3 Pacheco Creek High Groundwater Areas 3.3-9
3.3-4 Representative Photographs of Pacheco Creek 3.3-11

3.4-1 FFMP Land Use Designations in the PEIR Study Area 3.4-5

3.6-1 Geologic Formations in the Study Area 3.6-2

3.11-1 Summary of 2008 Estimated Emissions Inventory for Criteria Air Pollutants and Precursors 3.11-7
3.11-2 2008 California GHG Emissions by Sector 3.11-10

3.12-1 Common Noise Sources and Levels 3.12-2
3.12-2 2020 Aircraft Noise Contours 3.12-7

3.14-1a Example of Existing Visual Character in PEIR Study Area 3.14-1
3.14-1b Example of Existing Visual Character in PEIR Study Area 3.14-2
3.14-1c Example of Existing Visual Character in PEIR Study Area 3.14-2
3.14-1d Example of Existing Visual Character in PEIR Study Area 3.14-3
3.14-1e Example of Existing Visual Character in PEIR Study Area 3.14-3
3.14-1f City Water Reclamation Facility 3.14-4

Tables

ES-1 Program Elements by Category ES-3
ES-2 Hollister Urban Area Water and Wastewater Master Plan and Coordinated Plan Proposed Program and Alternatives ES-4
ES-3 Summary of Impacts and Mitigation Measures ES-8

2-1 Program Elements by Category 2-1
2-2 Historical Annual Water Production at Lessalt Water Treatment Plant 2-3
2-3 Program Element Construction Summary 2-20

3.1-1 Faults with Evidence of Activity during Holocene Time within and Near the PEIR Study Area 3.1-5
3.1-2 General Soils Types and Properties in the PEIR Study Area 3.1-6
3.1-3 California Division of Mines and Geology Mineral Land Classification System 3.1-11

TABLE OF CONTENTS

Continued **Page**

3.2-1 Average Monthly Stream Flows for Major Streams in the Pajaro River Watershed 3.2-1
3.2-2 Existing Municipal and Industrial Wells in the HUA 3.2-4
3.2-3 Central Coast Region Basin Plan Surface Water Quality Objectives..... 3.2-15
3.2-4 Existing and Projected Water Demands in the Hollister Urban Area 3.2-32

3.3-1 Acreage of Land Cover Types by Location in the Study Area..... 3.3-3
3.3-2 Special-Status Species Previously Documented Within or in the Vicinity of the Study Area..... 3.3-5

3.4-1 City of Hollister Land Use Designations..... 3.4-1
3.4-2 FMMP Farmland Designations in the PEIR Study Area..... 3.4-3

3.7-1 San Benito County Current and Future Population Projections (2010-2035) 3.7-1
3.7-2 San Benito County Employment Projections (2010-2035) 3.7-2
3.7-3 San Benito County Current and Future Housing Projections (2010-2035)..... 3.7-3
3.7-4 San Benito County Regional Housing Needs Allocation for 2007–2014 ..... 3.7-5
3.7-5 San Benito County Adjusted Housing Needs (2009–2014) 3.7-5
3.7-6 City of Hollister Regional Housing Needs Allocation for 2007–2014..... 3.7-6
3.7-7 City of Hollister Adjusted Housing Needs (2009-2014) 3.7-6

3.8-1 Landfills In or Near the Study Area 3.8-2

3.9-1 DTSC- and SWRCB-Listed Hazardous Waste and Substances Sites within the Study Area 3.9-1

3.11-1 Summary of Ambient Air Quality Standards and Attainment Designations..... 3.11-2
3.11-2 Health Effects of Criteria Air Pollutants 3.11-3
3.11-3 Hollister Monitoring Station—Ambient Air Quality 3.11-4
3.11-4 MBUAPCD Air Quality Significance Thresholds 3.11-15
3.11-5 Mitigation Measures for Construction Emissions of PM_{10}..... 3.11-18
3.11-6 Mitigation Measures for Construction Emissions of NO_X and PM_{10} 3.11-19

3.12-1 Summary of Modeled Existing Noise Levels from Vehicular Traffic in the Study Area 3.12-5
3.12-2 Land Use Noise Compatibility Guidelines..... 3.12-10
3.12-3 Noise Emission Levels from Construction Equipment 3.12-15
3.12-4 Construction Traffic Noise Emission Threshold..... 3.12-18
3.12-5 Representative Vibration Source Levels for Construction Equipment..... 3.12-21

3.13-1 Existing Parks and Recreation Facilities Within or Near the Study Area 3.13-1

4-1 Probable Future Residential Projects in the Hollister Urban Area 4-4
4-2 Probable Future Commercial and Industrial Projects in the Hollister Urban Area 4-6

5-1 Hollister Urban Area Water and Wastewater Master Plan and Coordinated Plan Proposed Program and Alternatives..... 5-3
5-2 Ability of Program Alternatives to Meet Program Purpose. 5-4
5-3 Summary of Program Impact Levels before and after Mitigation..... 5-4
5-4 Comparison of Impacts Between the Proposed Program and Alternatives..... 5-5

ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
AB	Assembly Bill
AB 939	California Integrated Waste Management Act of 1989
AEP	annual exceedance probability
af	acre-feet
afy	acre-feet per year
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
ALUC	Airport Land Use Commission
AMA	American Motorcyclist Association
AMBAG	Association of Monterey Bay Area Governments
AQMP	air quality management plan
ARB	California Air Resources Board
ATCM	Airborne Toxics Control Measure
B.P.	Before Present
BACT	best available control technology
BAT	best available technology economically achievable
BCT	best conventional pollutant control technology
BMP	best management practice
BOD	biological oxygen demand
BSC	(California) Building Standards Commission
Business Plan Act	California Hazardous Materials Release Response Plans and Inventory Law of 1985
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
$CaCO_3$	calcium carbonate
CAFÉ	corporate average fuel economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal-OSHA	California OSHA
Caltrans	California Department of Transportation
CAP	Critical Air Pollutant
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCTS	Central California Taxonomic System
CDE	California Department of Education

CDMG	California Division of Mines and Geology
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CI	compression ignition
City	City of Hollister
City General Plan	City of Hollister General Plan
CIWMB	California Integrated Waste Management Board
CLUP	Comprehensive Land Use Plan
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2-equivalency
Coordinated Plan	Hollister Urban Area Coordinated Water Supply and Treatment Plan
County	San Benito County
County General Plan	San Benito County General Plan
CPA	California Power Authority
CPUC	California Public Utilities Commission
CTR	California Toxics Rule
CVP	Central Valley Project
CWA	Clean Water Act of 1972
D/DBP	Disinfectants and Disinfection Byproducts
dB	decibel
dBA	A-weighted sound levels
DEIR	Draft Environmental Impact Report
Delta	Sacramento–San Joaquin River Delta
DFG	California Department of Fish and Game
DPH	California Department of Public Health
DOC	California Department of Conservation

DOF	California Department of Finance
DOT	U.S. Department of Transportation
DPS	distinct population segment
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
DWSAP	Drinking Water Source Assessment and Protection
DWTP	domestic wastewater treatment plant
EIR	Environmental Impact Report
EISA	Energy and Independence Security Act of 2007
EPA	U.S. Environmental Protection Agency
EPCA	Energy Policy and Conservation Act
ESA	environmental site assessment
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FPP	Farmland Protection Program
FPPA	Farmland Protection Policy Act
FR	Federal Register
FRA	(USDOT) Federal Railroad Administration
FTA	Federal Transit Administration
GEI	GEI Consultants Inc.
GHG	greenhouse gas
GMP	Groundwater Management Plan
gpm	gallons per minute
GWMP	Groundwater Management Plan
GWP	global warming potential
HAP	hazardous air pollutant
HCD	California Department of Housing and Community Development
HCFC	hydrochlorofluorocarbon
HFC	hydrofluorocarbon

HI	hazard index
high-GWP	high global warming potential
Hot Spots Act	Air Toxics Hot Spots Information and Assessment Act
HUA	Hollister Urban Area
HZ	hertz
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
IRWMP	Integrated Regional Water Management Plan
IS/MND	Initial Study/Mitigated Negative Declaration
ITP	incidental take permit
IWTP	Industrial Wastewater Treatment Plant
LAFCO	Local Agency Formation Commission
L_{dn}	day-night noise level
L_{eq}	equivalent noise level
LESA	Land Evaluation and Site Assessment
LID	Low Impact Development
L_{max}	maximum noise level
L_{min}	minimum noise level
L_n	the noise level exceeded n percent of a specific period of time, generally accepted as an hourly statistic
LSWS	local small water systems
LTWMP	Long-Term Wastewater Management Plan
LUP	Linear Underground/Overhead Project
LWD	large woody debris
M&I	municipal and industrial
MACT	maximum available control technology
Master Plan	Hollister Urban Area Water and Wastewater Master Plan
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MCL	maximum contaminant level
MEI	maximum exposed individual
mg	million gallons
mg/L	milligrams per liter
mgd	million gallons per day
MLD	most likely descendent
MOU	Memorandum of Understanding
mpg	miles per gallon

MRP	Master Reclamation Permit
MS4	small municipal separate storm sewer system(s)
msl	mean sea level
MY	model year
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAL	numeric action levels
NCCAB	North Central Coast Air Basin
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NEL	numeric effluent limitations
NEPA	National Environmental Policy Act
NESHAP	national emission standards for HAPs
NFIP	National Flood Insurance Program
NHDES	New Hampshire Department of Environmental Services
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOI	Notice of Intent
NOP	notice of preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPL	(EPA's) National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTR	National Toxics Rule
NWI	National Wetland Inventory
NWIC	Northwest Information Center
OAL	Office of Administrative Law
ODS	ozone depleting substance
OEHHA	Office of Environmental Health Hazard Assessment
OES	(California Governor's) Office of Emergency Services
OPR	(California) Office of Planning and Research

OSHA	Occupational Safety and Health Administration
ozone	photochemical smog
pCi/L	picocuries per liter
PEIR	Programmatic Environmental Impact Report
PFC	perflurocarbon
PG&E	Pacific Gas and Electric Company
PL	Public Law
PM	particulate matter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppm	parts per million
PPV	peak particle velocity
PRC	(California) Public Resources Code
program	water, water reclamation, and recycled water program
PRWFPA	Pajaro River Watershed Flood Prevention Authority
PVWMA	Pajaro Valley Water Management Agency
PWWG	Pacheco Watershed Working Group
R value	rainfall erosivity value
R/O	reverse osmosis
RCRA	Resource Conservation and Recovery Act
REAP	Rain Event Action Plan
Reclamation	U.S. Bureau of Reclamation
Region 3	Central Coast Region
RHNA	Regional Housing Needs Allocation
RHNP	Regional Housing Needs Plan
RM I	Ridgemark Wastewater Treatment Plant I
RM II	Ridgemark Wastewater Treatment Plant II
RMS	root-mean-square
ROG	reactive organic gases
RWD	Reports of Waste Discharge
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act of 1986
SBCOG	San Benito County Governments
SBCWD	San Benito County Water District
SBCWDWRA	San Benito County Water District Water Resources Association
SCAQMD	South Coast Air Quality Management District
SCH	State Clearinghouse

SCVWD	Santa Clara Valley Water District
SDR	state discharge requirement
SDWA	Safe Drinking Water Act
SEL	sound exposure level
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act
SMCL	secondary maximum contaminant level
SO_2	sulfur dioxide
SOI	sphere of influence
SR	State Route
SRA	shaded riverine aquatic (habitat)
SSCWD	Sunnyslope County Water District
Streambed Alteration	Game Code Section 1602
study area	program study area
SVP	Society of Vertebrate Paleontology
SWMP	Storm Water Management Plan
SWP	State Water Project
SWPPP	storm water pollution prevention plan
SWRCB	(California) State Water Resources Control Board
TAC	toxic air contaminant
TCDD	dioxin
TDS	total dissolved solids
TMDL	total maximum daily load
TPY	tons per year
TSS	total suspended solids
UBC	(federal) Uniform Building Code
UCD ITS	U.C. Davis Institute of Transportation Studies
UCMP	University of California Museum of Paleontology
UIC	Underground Injection Control
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDW	Underground Sources of Drinking Water
USFWS	U.S. Fish and Wildlife Service

USGS	U.S. Geological Survey
USOTA	U.S. Office of Technology Assessment
VdB	vibration decibels
VMT	vehicle miles traveled
VOC	volatile organic compound
WDID#	waste discharge identification number
WDR	waste discharge requirement
WRA	Water Resources Association
WRF	water reclamation facility
WTP	water treatment plant
WWTP	wastewater treatment plant

EXECUTIVE SUMMARY

This Final Programmatic Environmental Impact Report (Final PEIR) for the Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan (Program) consists of the Draft Programmatic Environmental Impact Report (Draft PEIR) dated October 4, 2010, plus errata and revisions included herein as Chapter 10, written comments received by the San Benito County Water District (SBCWD) on the Draft PEIR, and SBCWD's response to those comments (Chapter 9).

There were no comments received on the Draft PEIR that required any modifications to the Draft PEIR, including changes in the evaluation of potential environmental impacts, mitigation measures, or significance determinations. Any edits to the Draft PEIR are underlined or shown as strikeouts as needed.

ES.1 PROGRAM PURPOSE AND OBJECTIVES

The Program analyzed in this program environmental impact report (PEIR) is defined in the 2008 Hollister Urban Area Water and Wastewater Master Plan (Master Plan) (Memorandum of Understanding [MOU] Parties 2008) and the 2010 Coordinated Water Supply and Treatment Plan (Coordinated Plan) (MOU Parties 2010). The overall purpose of the Program is to:

- Improve the quality of municipal drinking water, industrial supply, and recycled water for urban and agricultural irrigation users.
- Provide a reliable and sustainable water supply to meet the current and future demands of the Hollister Urban Area (HUA).
- Implement goals for the Hollister Water Reclamation Facility to be the primary wastewater treatment plant for incorporated and unincorporated lands in the HUA to protect groundwater quality and public health.

The proposed Program, which constitutes the proposed project in this PEIR under the California Environmental Quality Act (CEQA), consists of a number of individual elements (Program elements or projects) for water, wastewater, and recycled water. The proposed Program is scheduled to be completed by 2023 and is phased to provide flexibility in responding to changing conditions.

ES.2 PROGRAM BACKGROUND

The Program purpose and objectives are based upon the MOU among the City of Hollister (City), San Benito County (County), San Benito County Water District (SBCWD), and Sunnyslope County Water District (SSCWD) (collectively referred to as the MOU Parties). The MOU was developed in 2004 by the City, County, and SBCWD, and was amended in 2008 to include SSCWD (MOU Parties 2008:ES.1). In addition to defining principles and objectives for the Master Plan, the MOU established governance and management committees for the development, guidance, and definition of roles for administration of the Master Plan.

Numerous studies and reports have been prepared regarding water supply and treatment, wastewater treatment and disposal, and recycled water in the HUA. The key planning studies that provide the basis for the Program analyzed in this PEIR are: the Master Plan, the Coordinated Plan, the Urban Water Management Plan Update, the City of Hollister Long-Term Wastewater Management Plan, SSCWD's Long-Term Wastewater Management Plan, the Recycled Water Feasibility Study, and the Groundwater Management Plan.

ES.3 PROGRAM NEED

Although treated drinking water meets all primary federal and state drinking water regulations in the HUA, hardness and minerals in the water supply need to be reduced. The reliability of imported surface water from the federal Central Valley Project (CVP) has declined significantly because of major environmental, regulatory, and legal constraints to pumping and exporting water from the Sacramento–San Joaquin River Delta (Delta). The sustainability of local supplies requires review. The high level of minerals in the treated wastewater limits both disposal and recycling options because of adverse impacts to crops and groundwater. Therefore, the Program was developed to address the following needs:

- Quality of drinking water and recycled water—Substantial differences between groundwater and imported surface water quality exist with regard to constituent concentrations such as total dissolved solids (TDS), hardness, and nitrates. Historically, TDS concentrations in the local groundwater have ranged from 800 to 1,200 milligrams per liter (mg/L), and imported CVP surface water has had TDS concentrations ranging from 250 to 300 mg/L. The higher concentrations of TDS and hardness in the groundwater results in the need for home water softeners and limits opportunities for recycled water use.

- Reliability of water supply—Water supplies for the HUA consist of groundwater and imported CVP surface water supplies. Based on current trends, it is likely that the reliability of imported surface water supplies will continue to decline. Currently, when CVP supplies are insufficient, additional water needs are met using urban groundwater wells.

- Regional wastewater facility—The wastewater service area boundary must be expanded for connection of unincorporated development to the regional City of Hollister WRF, consistent with the principles of wastewater treatment and disposal in the MOU.

- Coordination of water and wastewater system improvements—The County population is projected to increase from 58,388 in 2010 to 83,383 by 2025 (AMBAG 2008; DOF 2010). The water and wastewater facilities required to serve the needs projected in the City and County General Plans must be coordinated to coincide with the timing of new residential, commercial, and industrial development, to be able to provide the required level of service and minimize costs.

- Regional balance of water resources including high groundwater areas—The use of imported CVP surface water has helped stabilize groundwater levels but contributes to high groundwater conditions in the northern portion of the HUA. Previous analyses have concluded that the existing water supplies are sufficient to meet projected demands over the timeframe of the current City and County General Plans (through 2023) under normal (nondrought) conditions. However, because of the water quality, reliability, and wastewater disposal issues, a more effective balance in the use of available water supplies is required.

ES.4 PURPOSE OF THIS PROGRAM EIR

As the lead agency under CEQA, SBCWD has determined that implementation of the proposed Program may have significant effects on the environment and has directed the preparation of this ~~draft~~ PEIR to analyze these potentially significant effects. The City, County, and SSCWD are responsible agencies under CEQA, and with SBCWD, are collectively considered to be the Program proponent.

To certify the PEIR, SBCWD must find that this PEIR has been completed in compliance with CEQA. Under the programmatic approach, additional technical analyses and environmental compliance will be necessary prior to implementation of some of the future actions. Additional mitigation monitoring and reporting programs related to future implementation would be developed and required as part of future project-level environmental documentation as needed.

ES.5 PROGRAM OVERVIEW

The proposed Program consists of a number of individual elements or projects for water, wastewater, and recycled water as summarized in Table ES-1.

Table ES-1
Program Elements by Category

Water	Wastewater	Recycled Water
Purchases or Transfers of Imported Water Supplies	Ridgemark Wastewater Treatment Plant Upgrades	Phase 1 Recycled Water Facilities (completed)
North County Groundwater Bank	Expansion of City of Hollister Water Reclamation Facility	Phase 2a and Phase 2b Recycled Water Facilities
New Urban Wells	Cielo Vista Estates Connection to City of Hollister Water Reclamation Facility	Ridgemark Recycled Water Facilities
Lessalt Water Treatment Plant Upgrades		
New Surface Water Treatment Plant		
Demineralization of Urban Wells (Phases 1 and 2)		
New Pipeline to Ridgemark		
New Treated Water Storage		

Note: Non-structural solutions (water conservation, salinity education, softener ordinance, new development connections to the city sewer, and other measures) is also a Program element considered in this PEIR, but it is not shown in Table ES-1 because it fits under all categories.
Source: Data compiled by AECOM in 2010

The proposed Program would be implemented in three phases: near-term (2015), intermediate (2023), and long-term (buildout). This PEIR evaluates only Phase 1 (near-term) and Phase 2 (intermediate-term) actions, which would be implemented through 2023. The third phase, beyond 2023, is not included in this PEIR because it is not defined at this time and would be too speculative for a meaningful analysis. The need and configuration of Phase 3 actions are also partially dependent on the results from implementing Phases 1 and 2. Phase 3 projects could include demineralization of additional urban wells, increased treated water storage capacity, expansion of the City of Hollister's (City's) Water Reclamation Facility (WRF), continued expansion of recycled water facilities, and long-term water supply development.

Some initial elements of the proposed Program are already being implemented and have obtained CEQA compliance under their own project-level CEQA documentation. Projects already constructed and operating at the time of publication of the notice of preparation (June 22, 2010) are considered part of the existing conditions for this PEIR.

ES.6 PROGRAM ALTERNATIVES

To develop the best plan to achieve the purpose and objectives, a comprehensive alternatives development and screening process was completed for the 2008 Hollister Urban Area Water and Wastewater Master Plan (Master Plan) and the 2010 Coordinated Water Supply and Treatment Plan (Coordinated Plan). That process resulted in a wide range of concepts and specific alternatives to meet the Program purpose and objectives. The proposed Program includes elements from each of the overall concepts that were developed and evaluated. The PEIR alternatives generally conform to the concepts and alternatives presented in the Master Plan and Coordinated Plan. However, some have been modified as needed to reduce or eliminate significant and unavoidable.

Table ES-2
Hollister Urban Area Water and Wastewater Master Plan and Coordinated Plan Proposed Program and Alternatives

Alternative Designation	Alternative Name	Alternative Emphasis	Elements/Projects[a]															
			Water Supply				Water Treatment and Distribution				Wastewater Treatment				Recycled Water			
			Additional Imported Surface Water	Local Surface Water	Additional Urban Groundwater	Water from High Groundwater Basins	Lessalt Water Treatment Plant Upgrades	New Surface Water Treatment Plant	Groundwater Demineralization	New Pipeline to Ridgemark	Treated Water Storage Reservoirs	Expand City Water Reclamation Facility	SSCWD Wastewater Treatment Facility	Connect Cielo Vista Estates to City WRF	Phase 1 Facilities	Phase 2A Facilities	Phase 2B Facilities[b]	SSCWD Ridgemark Facilities
—	Proposed Program	Conjunctive Use of Surface Water and Groundwater	●	●[c]	●	●	●	●	●	●	●	●	●	●	●	●	●	●
—	No Program	Existing Conditions Plus Reasonably Foreseeable Projects			●		●			●	●	●	●	●	●	●		●
1	Increase Imported Surface Water	Imported Surface Water Supply	●				●	●		●	●	●	●	●	●	●		●
2	Utilize Local Surface Water Supply	Local Surface Water from Seasonal Streams		●			●	●		●	●	●	●	●	●	●		●
3	Demineralize Urban Wells	Demineralization of Groundwater			●		●		●	●	●	●	●	●	●	●	●	●
4	Utilize Water from High Groundwater Basins	Water from Local High Groundwater Basins				●	●	●		●	●	●	●	●	●	●		●

Notes: SSCWD = Sunnyslope County Water District; WRF = Water Reclamation Facility.

[a] Proposed Program and all alternatives incorporate Nonstructural Solutions including, Water Conservation, Salinity Education, Water Softener Ordinance, and other measures.

[b] Phase 2B recycled water facilities would be implemented if both water quality and supply reliability is achieved.

[c] Under the Proposed Program, local surface supplies in the North County would be operated in conjunction with the proposed North County Groundwater Bank.

environmental impacts of the proposed Program identified through this environmental review. Alternatives to the proposed Program evaluated in this PEIR are:

- No Program – Existing Conditions with Probable Future Projects
- Alternative 1 – Increase Imported Surface Water
- Alternative 2 – Utilize Local Surface Water Supply
- Alternative 3 – Demineralize Urban Wells
- Alternative 4 – Utilize Water from High Groundwater Basins

ES.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR must identify the "environmentally superior alternative" among the alternatives evaluated. If the environmentally superior alternative is the No Program Alternative, Section 15126.6(e)(2) of the State CEQA Guidelines requires that the EIR identify an environmentally superior alternative among the other alternatives.

This PEIR evaluated five alternatives to the proposed Program including a "No Program" alternative. The No Program Alternative would be the environmentally superior alternative because it would have the least amount construction impacts and changes in existing operations. Because CEQA requires that a "construction" alternative be selected as an environmentally superior alternative in the event that the No Program Alternative is the environmentally superior alternative, construction and operation impacts of Alternatives 1 – 4 were compared with the proposed Program. Alternatives 1, 2, and 3 would all have less significant adverse environmental effects than the Proposed Program. Alternative 4 would have about the same adverse environmental effects as the proposed Program. Alternative 1 was determined to be the environmentally superior alternative among Alternatives 1, 2, and 3 based on the specific differences between the adverse environmental effects, as summarized below.

Alternative 1, Increase Imported Surface Water, would import additional water (and with it, salt) into the basin which could degrade groundwater quality over time and exacerbate existing high groundwater conditions in portions of the study area. However, it would eliminate potentially significant impacts on aquatic, riparian, and wetland habitats because the North County Groundwater Bank and demineralization would not be implemented. All other alternatives (with the exception of No Program) have potentially significant impacts to biological resources. For this reason, Alternative 1 is the environmentally superior alternative.

Alternative 2, Utilize Local Surface Water Supplies, would divert surface water seasonally from Arroyo dos Picachos, Arroyo de Las Viboras, and Pacheco Creek, and would have the greatest potential for significant effects on steelhead trout. For this reason, Alternative 2 is not the environmentally superior alternative.

Alternative 3, Demineralize Urban Wells, would reduce some potential impacts on groundwater quality and the functions and values of aquatic, riparian, and wetland habitats because it would not include implementation of the North County Groundwater Bank Program element. However, there are significant environmental impacts associated with brine disposal including potentially significant impacts to water quality and biological resources depending on the brine disposal option selected. For these reasons, Alternative 3 is not the environmentally superior alternative.

Alternative 4, Utilize Water from High Groundwater Basins, would make use of water from local subbasins with high groundwater conditions to meet the growth in water demand in the HUA. The environmental impacts of Alternative 4 would be similar to the proposed Program. Significant impacts could occur with respect to important mineral resources, degradation of groundwater quality, biological resources, Important Farmland conversion, greenhouse gas emissions, and construction noise. For these reasons, Alternative 4 is not the environmentally superior alternative.

ES.8 AREAS OF CONTROVERSY

Section 15123 of the State CEQA Guidelines requires that an EIR identify areas of controversy. No issues or concerns have been raised by agencies or the public related to the proposed Program.

ES.9 ISSUES TO BE RESOLVED

Section 15123 of the State CEQA Guidelines requires that an EIR identify issues to be resolved. Issues to be resolved for the proposed Program include the following:

- Identify specific locations of various Program elements.
- Conduct additional studies related to the North County Groundwater Bank and potential effects on Pacheco Creek and adjacent riparian habitat, groundwater levels, and groundwater salinity.
- Select brine disposal option for groundwater demineralization Program element.

ES.10 SUMMARY OF ENVIRONMENTAL IMPACTS

ES.10.1 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

CEQA Section 21100(b)(2)(A) provides that an EIR shall include a detailed statement setting forth "any significant effect on the environment that cannot be avoided if the project is implemented." Chapter 3, "Environmental Setting, Impacts, and Mitigation," provides a detailed analysis of all potentially significant environmental impacts of the project, feasible mitigation measures that could reduce or avoid the project's significant impacts, and whether these mitigation measures would reduce these impacts to less-than-significant levels. If a specific impact cannot be reduced to a less-than-significant level, it is considered a significant and unavoidable impact. For this PEIR, there are some impacts that are considered to be "potentially significant and unavoidable" because the occurrence and severity of the impact cannot be determined with certainty at this time. For CEQA purposes, a potentially significant and unavoidable impact is treated as if it were a significant and unavoidable impact.

The proposed Program would have the following significant and unavoidable, or potentially significant and unavoidable, environmental impacts:

- potential loss of mineral resources resulting from the construction of Program facilities (direct and cumulative);
- potential degradation of surface and groundwater quality as a result of brine disposal associated with the Demineralization of Urban Wells Program element and potential degradation of groundwater as a result of operation of the North County Groundwater Bank Program element (direct and cumulative);
- potential adverse affects to aquatic, riparian, and wetland habitats and the special-status species that could occupy them as a result of North County Groundwater Bank operations (direct and cumulative);
- conversion of important farmland to non-agricultural uses (direct and cumulative);
- greenhouse gas (GHG) emissions and contributions to global climate change from proposed Program construction and operation (cumulative); and
- generation of temporary and short-term construction noise (direct).

As noted above, there are some impacts that were considered to be potentially significant and unavoidable because the occurrence and severity of the impact cannot be determined with certainty, although the available substantial evidence indicates at this time that there is a reasonable likelihood that the impact would be potentially significant and unavoidable. This PEIR does not contain any project-level analysis. Consequently, no Program element, unless already approved under CEQA at a project level or exempted from CEQA, can be implemented without further CEQA documentation beyond this PEIR. When project-level CEQA documents are completed in the future for Program elements, the Program elements will be further defined and additional information may be available that would provide substantial evidence that effects found to be potentially significant and unavoidable in this PEIR could be mitigated to less-than-significant levels.

ES.10.2 Growth Inducement

CEQA requires that an EIR evaluate the growth-inducing impacts of a proposed project. Growth inducement itself is not an environmental effect, but it may lead to environmental effects. It is important to note that SBCWD is not charged with the responsibility of weighing and balancing the benefits and burdens of growth in the study area, because SBCWD has no authority either to permit development in the study area or to impose conditions on the development that is permitted. SBCWD is a California Special District that was formed by the San Benito County Water Conservation and Flood Control Act that delivers water to agricultural, municipal, and industrial users. SBCWD has no land use planning authority. Its mission is to serve the demand that is generated by land use plans that are adopted by the land use agencies.

Within the study area, development and growth are controlled by the local governments of the City and County. Both of these agencies have adopted general plans consistent with state law. These general plans provide an overall framework for growth and development within the jurisdiction of each agency. Growth and development are also directly affected by local, regional, and national economic conditions.

The proposed Program was developed in response to projected growth in the study area, as determined by land use designations and zoning in the City's and County's General Plans. Implementation of the proposed Program would meet the needs of planned growth, and it would not directly induce growth beyond levels already specified in the City's and County's General Plans. Program elements would be constructed on an incremental basis over the proposed Program's phased implementation period, thus incrementally increasing the availability of water supplies and water and wastewater collection, conveyance, and treatment facilities to meet the needs of planned growth in the study area.

Based on the analysis conducted for the PEIR, there is substantial evidence that the proposed Program would accommodate planned regional growth in a manner that would be consistent with the City's and County's growth principles and would not directly induce growth. However, the proposed Program includes an element that could indirectly result in more growth than currently anticipated by the San Benito County General Plan. The Program includes a non-structural element to amend the City's wastewater service area to provide outside jurisdiction wastewater service to unincorporated lands within the HUA. Therefore, notwithstanding the current designated general plans and zoning areas, the proposed Program is considered growth-inducing because allowing new developments within the HUA, but outside the existing service area, to connect to the City's wastewater collection system could result in more growth than anticipated by the San Benito County General Plan by allowing for growth at a greater density and intensity than is possible with septic systems.

ES.10.3 Program Impacts Summary

See Table ES-3 for a summary of the environmental impacts and mitigation of this draft EIR.

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.1 Geology, Soils, and Mineral Resources			
3.1-1: Risks to People or Structures Caused by Surface Fault Rupture. Individual Program elements within the study area could be located within or adjacent to an Alquist-Priolo Earthquake Fault Zone or a known active fault. These impacts could be potentially significant. Less than significant with mitigation.	PS	**3.1-1a: Prohibit the Construction of Buildings within 50 feet of Active Faults.** No new buildings intended for human occupancy (e.g., new WTP) that are proposed as part of a Program element shall be constructed within 50 feet of the Busch Ranch, Quien Sabe, Calaveras, Sargent, or San Andreas faults. **3.1-1b: Prepare Geologic Report for any Program Facilities in an Alquist-Priolo Fault Zone or the Busch Ranch Fault Zone and Implement CBC Requirements.** For any Program-related building or pipeline that is proposed for construction within the Alquist-Priolo Special Studies Zones (Figure 3.1-1) or within 100 feet of the Busch Ranch Fault (Figure 3.1-2), the project proponents shall hire a California-registered geotechnical engineer to prepare a geologic engineering report that shall be submitted to and approved by the County before the issuance of building permits (if required) or approval of improvement plans. The geologic engineering report shall demonstrate that any Program-related buildings intended for human occupancy that will be located with an Alquist-Priolo Earthquake Fault Zone or adjacent to the Busch Ranch Fault shall be set back at least 50 feet (or more, depending on the recommendation of the geotechnical engineer) from the fault trace and that appropriate seismic engineering designs to prevent damage from surface fault rupture shall be incorporated into building and foundation plans and pipeline designs, pursuant to the California Building Standards Code.	LTS
3.1-2: Risks to People and Structures Caused by Strong Seismic Ground Shaking. Proposed Program facilities would be constructed in a seismically active area, and Program implementation could expose people and structures to risks caused by strong seismic ground shaking. These impacts could be potentially significant. Less than significant with mitigation.	PS	**3.1-2a: Prepare a Geotechnical Engineering Report and Implement Appropriate Recommendations Pursuant to the CBC.** Before building permits (if required) are issued and construction activities begin for any Program element, the project proponent shall hire a California-registered geotechnical engineer to prepare a final geotechnical subsurface investigation report for the proposed facilities that shall be submitted for review and approval to the appropriate permitting agency. The final geotechnical engineering report shall address and make recommendations on the following:	LTS

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		▸ seismic ground shaking; ▸ liquefaction; ▸ site preparation; ▸ soil-bearing capacity; ▸ appropriate sources and types of fill; ▸ potential need for soil amendments; ▸ structural foundations, including retaining-wall design; ▸ grading practices; ▸ soil corrosion of concrete and steel; ▸ erosion/winterization; ▸ subsidence and lateral spreading; ▸ expansive/unstable soils; and ▸ landslide potential. In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include site-specific subsurface testing of soil and groundwater conditions at the locations proposed for facility construction, and shall determine appropriate foundation designs that are consistent with the version of the CBC that is applicable at the time building and grading permit applications are submitted. All recommendations contained in the final geotechnical engineering report shall be implemented by the project proponent. Special recommendations contained in the geotechnical engineering report shall be noted on the grading plans and implemented as appropriate before construction begins. Design and construction of all project facilities shall be in accordance with the CBC. **3.1-2b: Monitor Earthwork during Ground-Disturbing Activities.** All earthwork shall be conducted in accordance with the recommendations of the final geotechnical report, to be monitored by a qualified inspector under the supervision of a California licensed civil engineer, retained by the project proponent. The inspector shall provide oversight during all excavation, placement of fill, and disposal of materials removed from and deposited on both on- and off-site construction areas.	

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.1-3: Potential for Hazards Associated with Construction in Areas with Substantial Geologic and Soil Limitations. Construction of proposed Program facilities could be subject to hazards from a number of soil limitations including: liquefaction; landslides, subsidence, and lateral spreading; shrink swell potential (primarily expansive soils); and high corrosivity potential. These impacts could be potentially significant. Less than significant with mitigation.	PS	**3.1-3: Minimize Potential for Hazards in Areas with Substantial Soil Limitations. Implement Mitigation Measures 3.1-2a and b.** Implementation of these mitigation measures would reduce potential geologic hazards from construction in areas subject to substantial soil limitations to a less-than-significant level because a California-registered geotechnical engineer would perform a site-specific geotechnical investigation that shall include a determination of specific soil limitations as required by the CBC, and all recommendations made by the engineer regarding design would be implemented. Examples of the types of recommendations that may be made include, but shall not be limited to: ▸ Construction of building foundations on pilings that are anchored in bedrock; ▸ Removal of soil and replacement with compacted fill; ▸ Foundation design that incorporates the use of a post-tensioned slab or removal of soil and replacement with compacted fill; ▸ Slope stabilization by installation of retaining walls, spraying with gunnite; ▸ Driving caissons into bedrock to provide foundation support; and ▸ Use of materials that are less subject to corrosion (for example, polyvinyl chloride [PVC] pipe instead of steel). Furthermore, all earthwork would be monitored by a qualified inspector under the supervision of a California licensed civil engineer to ensure compliance with project plans and specifications.	LTS
3.1-4: Construction-Related Erosion. Construction activities during proposed Program implementation would involve grading and movement of earth in soils subject to wind and water erosion. Stormwater Pollution Prevention Plans and Grading and Erosion Control Plans would be prepared and implemented as part of permit compliance for each Program element. Less than significant.	LTS	No mitigation measures are required.	LTS

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.1-5: Possible Loss of Mineral Resources–Construction Aggregate. A portion of the PEIR study area contains minerals that could provide a source of construction aggregate. Construction of proposed Program facilities in areas classified as MRZ-2 could result in loss of regionally important minerals. These impacts could be potentially significant. Potentially significant and unavoidable.	PS	Mitigation Measure 3.1-5: Conduct Soil Sampling in Areas Zoned MRZ 2 and MRZ 3 and Locate Facilities Outside of Areas that have Important Mineral Resource Deposits. Prior to construction of proposed Program facilities that would be located in areas zoned MRZ-2 or MRZ-3, the project proponent shall retain a California-registered geotechnical or soils engineer to analyze site-specific soil core samples. Based upon the testing results, the geotechnical or soils engineer shall make a determination as to whether an economically-viable source of aggregate minerals is present in the location proposed for Program element or project construction. If none is present, then no additional mitigation is required. In the event that an economically-viable source of aggregate minerals is present, the project proponent shall notify CDMG, and the approximate horizontal and vertical extent of available aggregate resources shall be delineated by the geotechnical or soils engineer. If feasible, the project proponent shall move the proposed facility to a location that does not contain important mineral resources. This mitigation measure does not apply to Program-related pipelines or wells because the amount of mineral resources that would be lost, if any, would not result in a significant loss of the overall resource.	PSU
3.2 Water Resources			
3.2-1: Potential for Temporary and Short-Term Degradation of Surface and Groundwater Quality during Program Construction. Construction of individual Program elements within the study area could degrade water quality through erosion or the accidental release of pollutants. The project proponent of each Program element would prepare a SWPPP and implement appropriate BMPs as required by the NPDES and obtain local and DPH permits for well installation. Less than significant.	LTS	No mitigation measures are required.	LTS
3.2-2: Potential to Degrade Surface and Groundwater Quality during Project Operations. Operation of individual Program elements within the study area could degrade water quality through the potential discharge of contaminated runoff from	PS	**3.2-2: Prepare and Submit Final Drainage Plans and Implement Requirements Contained in Those Plans.** Before approval of individual Program elements, detailed hydrology plans and water quality studies shall be required and prepared by a	LTS

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
paved areas. The project proponent of each Program element would implement appropriate BMPs as required by the NPDES and would comply with the NPDES permit requirements for post-construction stormwater runoff. However, because final design plans and specifications have not been prepared, implementation of the Program elements could result in potentially significant impacts on water surface and groundwater quality. Less than significant with mitigation.		qualified engineer as necessary for each Program element. Drafts of these plans shall be submitted to the County for review and approval before the issuance of grading permits. These plans shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the project. Requirements for hydrology plans and water quality studies would differ depending on the Program elements and some Program elements may not require plans or studies to be completed if hydrologic and water quality impacts would not be anticipated.	
3.2-3: Potential to Degrade Groundwater Quality during Project Operations of the North County Groundwater Bank. Operation of the North County Groundwater Bank could degrade groundwater quality through potential salt loading from increasing use of imported water for percolation. Pumping during operation of the North County Groundwater Bank could also degrade groundwater quality by inducing movement of poorer quality water. As groundwater conditions and well field design and modeling have not been finalized, implementation of the North County Groundwater Bank could result in potentially significant impacts to groundwater quality. Potentially significant and unavoidable.	PS	**3.2-3: Implement a Groundwater Monitoring Plan to Refine Well Field Conceptual Design at the North County Groundwater Bank.** The project proponent shall establish and implement a groundwater monitoring program to establish the preproject conditions of the groundwater basin with respect to salinity and water level and to monitor the impact of Program element operations on groundwater levels and water quality and respond accordingly. The groundwater monitoring program shall specify monitoring and water quality sampling frequency, parameters, and protocols and response actions, including the refinement of pumping rates or durations. The monitoring programs shall be developed and conducted in accordance with DPH and RWQCB regulatory requirements. Portions of this mitigation measure shall be implemented prior to construction and continue throughout the life of the North County Groundwater Bank to manage withdraws to prevent long-term over-draft and to avoid degradation of water quality.	PSU
3.2-4: Potential to Degrade Groundwater Quality during Operation of New Urban Wells. Operation of New Urban Wells could degrade groundwater quality through inducing movement of poorer quality water. This impact could be potentially significant. Less than significant with mitigation.	PS	**3.2-4: Develop and Implement Operating Plan for New Urban Wells.** The project proponent shall conduct modeling, analyze existing available date, and collect additional groundwater data as necessary to inform site selection and well design and operation. Prior to project implementation, an operations plan will be developed and implemented that includes ongoing monitoring of groundwater quality and level, and establishes performance criteria and actions to adaptively manage the groundwater pumping to maintain desirable conditions and impacts below significant levels.	LTS

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.2-5: Potential to Impact Groundwater Levels, Surface Water Levels, and Nearby Wells during Program Operations. Operation of the North County Groundwater Bank and New Urban Wells Program elements could result in changes in groundwater levels relating to groundwater pumping and recharge. As groundwater conditions and well field design and modeling have not been finalized, implementation of the North County Groundwater Bank and New Urban Wells Program elements could result in potentially significant impacts on groundwater levels, surface water levels in Pacheco Creek, and the operation of nearby wells. Less than significant with mitigation.	PS	**Mitigation Measure 3.2-5: Identify Existing Wells and Implement Ongoing Monitoring and Pumping Restrictions to Keep Impacts at Less-Than-Significant Levels.** During project design, the project proponent shall identify existing wells within the areas of the affected basins where studies indicate that drawdown effects could be observed. The project proponents will review the identified wells and collect information regarding existing use, screened intervals, total depth, and pump depth. The information collected shall be used to predict effects to each well that has been identified. Based on this information, relocation of proposed project wells or reductions in project pumping from the wells will be incorporated into the final design for the North County Groundwater Bank and Urban Wells Program elements. Prior to project implementation, an operations plan will be developed and implemented that includes ongoing monitoring of well levels and establishes performance criteria and actions to adaptively manage the groundwater pumping to maintain desirable conditions and impacts below significant levels.	LTS
3.2-6: Potential Degradation of Surface and Groundwater Quality during Operations of the Demineralization Program Element. Operation of the Demineralization Program element, including evaporation ponds and brackish wetlands, could impact surface and groundwater quality. Deep well injection of concentrated brine could impact groundwater quality if the well is not constructed properly and monitored. Additionally, ocean discharge of brine waste is a potential alternative for brine waste and has the potential to adversely affect water quality in the vicinity of the outfall location. Potentially significant and unavoidable.	PS	**3.2-6a: Coordinate with the City of Watsonsville and the Central Coast RWQCB to Determine if Ocean Disposal of Brine is Acceptable and Conduct Modeling and Incorporate the Results into the Outfall Design.** If the existing Watsonville WWTP outfall is to be used for brine disposal, the project proponent shall discuss the appropriateness of modifying the City of Watsonville's existing NPDES permit to add brine disposal from San Benito County with both the City of Watsonville and Central Coast RWQCB. The project proponent shall evaluate several chemical constituents in the blended discharge, including, but not limited to, inorganic salts, heavy metals, as well as chemicals that may be used at the demineralization plant (e.g., chlorine, antiscale additives, and corrosion products). The project proponent shall conduct all necessary studies, such as dispersion modeling, in coordination with the City of Watsonville and the Central Coast RWQCB, obtain an NPDES permit, and construct and operate this Program element in compliance with the NPDES permit. If another existing outfall is utilized for brine disposal, the	PSU

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		project proponent shall implement the same steps described above. If a new outfall is required, the project proponent shall conduct numerical hydrodynamic modeling to evaluate the variables affecting salinity and to provide input to a plant outfall design that minimizes impacts to ocean waters to the maximum extent feasible. Proper design and construction of the facility outfall shall mitigate impacts from brine discharge by maximizing the rapid dispersion and mixing of saline effluent to the extent that the changes to the salinity of waters in the outfall vicinity are minimized. If a new outfall is required, an NPDES permit shall be acquired from the Central Coast RWQCB, and WDRs shall be developed to regulate the concentrations and mass loadings of the brine waste. **3.2-6b: Provide Emergency Storage for Brine Effluent.** If an ocean outfall or deep well injection is used for brine disposal, the project proponent shall provide emergency storage. Emergency storage requires that, in the event of emergency conditions when effluent discharge is temporarily restricted or unavailable, effluent can be stored temporarily to avoid a violation of the WDRs. A water balance model shall be developed by the project proponent to assess the volume of storage required to contain brine in the case of a temporary ocean outfall or deep well injection unavailability. Water storage may consist of tanks or lined ponds. **3.2-6c: Perform a Deep Well Injection Feasibility Study, Obtain and Comply with an EPA Permit, and Meet Reporting and Monitoring Standards.** The characteristics of deep injection wells vary substantially, depending on the design flow rate, surrounding geology, and previous (if any) use of the well. If deep well injection is selected for brine disposal, the project proponent shall complete a feasibility study to be conducted by a licensed geologist/geotechnical engineer to evaluate the depth, geology, and hydrogeology of any potential well location with respect to the ability to accept and disperse injected brine at a specified rate and over an estimated project life. The feasibility study shall be submitted to EPA, which regulates and monitors all injection well	

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		activities. The following items shall be performed by the project proponent and continuously monitored and controlled, in compliance with the EPA Class I, nonhazardous well requirements: ▸ Analysis of the injection fluid with sufficient frequency to yield representative data of its characteristics. ▸ Installation and use of continuous monitoring devises for the following required items: • Injection Rate (gallons per minute) • Injection Total Volume (gallons) • Injection Pressure (psi) • Annular Pressure (psi) ▸ A mechanical integrity test at least every 5 years during the life of the injection well. • A well is considered to have mechanical integrity if no significant leaks are in the casing, tubing, or packer and no significant fluid movement is into an underground source of drinking water (USDW) through vertical channels adjacent to the injection well bore. A quarterly report shall be submitted to EPA which shall summarize the analysis of the injection fluid and identify the average, maximum, and minimum monthly values of each of the monitored parameters (i.e., characteristics of the injection fluid, injection rate, injection volume, injection pressure, and annular pressure. If operational difficulties such as scaling, fouling, or plugging occur at the brine-soil interface because the brine is corrosive, periodic or continual addition of chemicals, as well as periodic monitoring, shall be required to determine the effectiveness of the addition of chemicals. If initial chemical addition is not successful at remedying operational difficulties, as determined through periodic monitoring, alternate chemicals or operational methods shall be tried and monitoring shall be continued until scaling, fouling, or plugging issues are resolved.	

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.2-7: Potential Increases in On-Site and Off-Site Flood Risk. Buildout of the Program elements would increase impervious surface and associated storm water runoff that could increase the potential for on-site and off-site flooding. The proposed Program would create additional impervious surfaces, but not to such a degree that there would be a substantially increased flood risk. If brackish wetlands are chosen as the brine concentration method for demineralization operations, they could be constructed within the San Benito River floodplain and could reduce the flood storage capacity of the floodplain. A significant decrease in San Benito River floodplain capacity is not expected. Less than significant.	LTS	No mitigation measures are required.	LTS
3.2-8: Increased Demand for Water Supplies. The proposed Program includes a phased plan that uses existing imported CVP surface and groundwater supplies, additional imported surface water, and groundwater from demineralization of select urban wells and from the proposed North County Groundwater Bank. In the event that CVP water supplies are reduced to 50% or other imported surface water supplies are limited, the North County Groundwater Bank and/or urban wells would be capable of meeting the water demands of the HUA. Therefore, the proposed Program would meet water demands in the HUA through 2023. Less than significant.	LTS	No mitigation measures are required.	LTS
3.2-9: Increased Demand for Water Treatment and Distribution Facilities. The proposed Program includes upgrading the existing Lessalt WTP, constructing a new surface WTP, and constructing a groundwater demineralization facility. In addition, the proposed Program would construct transmission and distribution pipelines, aboveground water storage tanks, and pump stations that would deliver treated surface water and groundwater to the HUA. A time-phased implementation plan has been developed for the new water treatment facilities, and specifically for the demineralization facilities and distribution facilities. These facilities would be constructed and expanded incrementally to ensure that adequate treatment capacity and	LTS	No mitigation measures are required.	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
distribution facilities would be available to meet the water demands of the HUA. Less than significant.			
3.3 Biological Resources			
3.3-1: Possible Impacts to Sensitive Biological Resources Resulting from Temporary and Short-Term Project Construction Activities. Construction of Program facilities could adversely affect sensitive habitats and special-status species. The temporary and short-term construction impacts could occur during site grading or during other ground-disturbing activities. Construction activity is expected to occur primarily in highly disturbed urban and agricultural areas that would not support important biological resources. Any Program element that might substantially affect biological resources would undergo additional environmental review and obtain required permits. Less than significant.	LTS	No mitigation measures are required.	LTS
3.3-2: Impacts to Aquatic Habitat and the Fish Community Resulting from Project Operations Affecting Groundwater or Surface Water Levels. Impacts to aquatic habitat and the fish community could result from operation of several of the Program elements. Implementation of the North County Groundwater Bank project would involve pumping groundwater to reduce groundwater in the high groundwater area to approximately 10 feet below ground surface. The groundwater bank would also involve the percolation of surface water for aquifer recharge. Both of these activities could affect conditions in Pacheco Creek and its tributaries. Ocean discharge of brine waste associated with operation of demineralization facilities, if that brine waste discharge option is chosen, would also have the potential to substantially degrade brackish and marine aquatic habitats. Significant and unavoidable.	PS	**3.3-2a: Avoid and Minimize Operational Impacts to Sensitive Biological Resources to the Extent Feasible.** The project proponent shall design Program elements to avoid and minimize impacts to sensitive biological resources to the extent feasible. **Mitigation Measure 3.3-2b: Develop and Implement an Ecosystem Monitoring and Adaptive Management Plan for the North County Groundwater Bank Project.** The project proponent for the North County Groundwater Bank Program element shall develop and implement an ecosystem monitoring and adaptive management plan to avoid and minimize impacts on sensitive biological resources, including wetland, riparian, riverine habitats, and associated special-status species, which may be adversely affected by project operations. The plan shall be developed in conjunction with project-level environmental review of the North County Groundwater Bank project, and incorporated into the project description. The plan shall describe all of the following elements: ▸ Monitoring requirements including groundwater levels, surface water flows, and vegetation condition and extent.	SU

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		► Thresholds of significance for sensitive biological resources that can be adversely affected by implementation of the North County Groundwater Bank. ► Management actions that may be applied through adaptive management if conditions exceed the thresholds and that may be sufficient to return conditions to acceptable levels (i.e., levels that do not exceed the thresholds). These management actions shall include: • provision of feasible stream flows or irrigation of wetland and/or riparian areas that will reduce aquatic habitat fragmentation or disconnection and plant stress; • physical modifications to riverine, wetland, and/or riparian areas that will reduce aquatic habitat fragmentation, disconnection, or plant water stress (e.g., increasing hydrologic connectivity of riparian vegetation to the low-flow channel); and/or • ecosystem restoration that will create additional or replacement habitat. ► Procedures for annual reporting of monitoring results and decision-making during adaptive management, including selecting and implementing management actions. ► Mechanisms for funding feasible monitoring and management actions for a 10-year period.	
3.3-3: Impacts to Special-Status Species and Sensitive Habitats Resulting from Project Operations. Operation of the North County Groundwater Bank and Demineralization of Urban Wells Program elements could reduce surface and subsurface hydrology in the study area. This reduction could adversely affect sensitive habitats and special-status species in the high groundwater area and other locations in the study area where operations could lower groundwater. Implementation of the North County Groundwater Bank Program element would also involve the percolation of surface water for aquifer recharge, which could adversely affect sensitive habitats and special-status species by	PS	Implement Mitigation Measure.3.3-2a-b and Mitigation Measure 3.2-3.	PSU

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
increasing surface and subsurface flows during summer. Potential ocean discharge of brine waste associated with operation of demineralization facilities could degrade habitat for special-status species associated with brackish and marine aquatic habitat. Potentially significant and unavoidable.			
3.4 Land Use and Agriculture			
3.4-1: Conflict with Land Use Plans and Policies. The proposed Program would not conflict with an applicable land use plan an agency with jurisdiction over the project but could conflict with a policy adopted for the purpose of avoiding or mitigating an environmental effect. Less than significant.	LTS	No mitigation measures are required.	LTS
3.4-2: Conversion of Important Farmland to Nonagricultural Uses. The specific locations and designs for many of the Program facilities have not yet been identified. It is possible that a loss of farmland could occur as a result of the construction or operation of a Program element. Implementation of the North County Groundwater Bank could improve high groundwater conditions in areas that are not currently suitable for agricultural use and thereby increase the amount of productive farmland in the PEIR study area. However, it is too speculative to state whether the net amount of productive farmland in the study area would be would be less, the same, or greater as a result of Program implementation. Even if a net gain of agricultural land was possible in the future, a temporary loss of farmland could occur when a Program facility is constructed. Significant and unavoidable.	SU	**3.4-2: Minimize Important Farmland Conversion to the Extent Practicable and Feasible.** The project proponent shall ensure that the following measures are implemented with regard to Prime Farmland, Unique Farmland, and Farmland of Statewide Importance to minimize impacts on these lands. a) Sites shall be configured to minimize the fragmentation of lands that are to remain in agricultural use. Contiguous parcels of agricultural land of sufficient size to support their efficient use for continued agricultural production shall be retained to the extent practicable and feasible. b) To the extent feasible, when determining the footprint of a Program element (e.g., water treatment plant, wells, and evaporation ponds) on agricultural land, the most productive topsoil from the construction footprint shall be salvaged and redistributed to less productive agricultural lands in the vicinity of the construction area that could benefit from the introduction of good-quality soil. By agreement between the project proponent or landowners of affected properties and the recipient(s) of the topsoil, the recipient(s) would be required to use the topsoil for agricultural purposes. c) During Program element construction, use of utilities that are needed for agricultural uses (including wells, pipelines, and power lines) and of agricultural drainage systems shall be	PSU

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		minimized so that agricultural uses are not disrupted. d) Minimizing disturbance of Important Farmland and continuing agricultural operations during construction shall be implemented by the following measures: ▸ locating construction laydown and staging areas on sites that are fallow, already developed or disturbed, or to be discontinued for use as agricultural land; and ▸ using existing roads to access construction areas, to the extent possible. e) Easements shall be acquired at a 1-to-1 ratio of acreage acquired to acreage of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, and the lands on which the easements are acquired shall be maintained in agricultural use.	
3.5 Cultural and Historic Resources			
3.5-1: Damage to or Destruction of Documented Significant Cultural and Historic Resources during Project Construction. Field and archival research has identified numerous prehistoric and historic-era cultural and historic resources within and adjacent to the study area. These include several prehistoric sites, historic-era buildings and structures, and two historic districts that are presently listed on the National Register of Historic Places. The proposed Program has the potential to adversely impact the integrity and/or setting of these resources. Less than significant with mitigation.	PS	**3.5-1: Develop and Implement a Mitigation Plan to Avoid and Minimize Impacts on Documented Significant Cultural and Historic Resources, if Necessary.** If a Program element would adversely affect a documented cultural or historic resource that is presently listed or potentially eligible for listing on the National Register of Historic Places or California Register of Historical Resources, the project proponent shall develop and implement a mitigation plan prior to construction activities to avoid and minimize impacts where feasible. The mitigation plan would develop measures designed to reduce impacts through, for example, project redesign and resource avoidance. The mitigation plan would contain the following elements as necessary: ▸ complete an evaluation of identified resources and determine the effect of the Program element on all eligible or listed resources; ▸ consult with the State Historic Preservation Officer (SHPO), and other consulting parties such as Native American individuals and organizations, to develop appropriate avoidance, treatment, or mitigation;	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		▸ document the site and avoid further effects by protecting the resource by appropriate avoidance measures where feasible; ▸ where physical impacts cannot be avoided and such physical impacts could damage the data these sites contain, develop further mitigation such as archival research, subsurface testing, and data recovery excavations to retrieve those values that contain significance for archaeology after consultation with and the agreement of the Native American most likely descendent (MLD), where possible; and ▸ monitor potentially destructive construction activities in the vicinity of documented resources.	
3.5-2: Damage to or Destruction of Significant Undocumented Cultural and Historic Resources during Construction. Subsurface disturbances could potentially destroy or damage as-yet-undiscovered prehistoric or historic-era cultural and historic resources. If these resources were to represent "unique archaeological resources" or "historic resources" as defined by CEQA, a significant impact would occur. Less than significant with mitigation.	PS	**3.5-2a: Conduct a Record Search of the California Historical Resources Information System, Conduct Cultural Resources Preconstruction Inventories Prior to Project-Related Ground-Disturbing Activities, and Provide Construction Worker Training Prior to Construction Activities.** In accordance with CEQA guidance, prior to the commencement of ground-disturbing activities, the project proponent shall engage a qualified professional cultural resources specialist. The specialist shall request a record search from the NWIC of the CHRIS, conduct archaeological and historic architecture preconstruction surveys of the project construction footprint, and provide construction worker training. These surveys will identify the presence of prehistoric and/or historic-era sites, buildings, structures, features, artifacts, or other culturally significant properties. Identified cultural resources shall be assessed as to their CRHR-listing eligibility and further appropriate and feasible measures shall be conducted, as specified in Mitigation Measure 3.5 2b. **3.5-2b: If Unrecorded Cultural Resources Are Encountered during Project-Related Ground-Disturbing Activities, Stop Work, Contact a Qualified Cultural Resources Specialist to Assess the Potential Significance of the Find, and Avoid or Treat Resources Appropriately.** If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, and structure/building remains) is made during	LTS

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		Program-related construction activities, the project proponent shall: ▸ immediately halt ground disturbances in the area of the find; ▸ retain a qualified professional archaeologist to evaluate the discovery and determine whether the resource is potentially significant, per the CRHR; ▸ develop appropriate mitigation to protect the integrity of the resource and protect additional resources from being affected; and ▸ implement Mitigation Measure 3.5-1, as appropriate.	
3.5-3: Damage to or Destruction of Inadvertently Discovered Human Remains. Subsurface disturbances could potentially uncover unmarked historic-era or prehistoric burials. Less than significant with mitigation.	PS	**3.8-3: If Human Remains Are Uncovered during Ground-Disturbing Activities, Stop Potentially Damaging Excavation in the Area of the Burial, Contact the San Benito County Coroner and a Professional Archaeologist to Determine the Nature and Extent of the Remains, and Follow Established Processes for Treatment of Remains.** The project proponent shall require that if human remains are uncovered during ground-disturbing activities for any Program element, the contractor or construction staff shall immediately contact the San Benito County Coroner's Office and stop potentially damaging excavation activities in the area of the burial. The project proponent shall also contact a professional archaeologist to determine the nature and extent of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). Following the coroner's findings, the project proponent, an archaeologist, and the MLD (as designated by the NAHC) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon	LTS

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		notification of a discovery of Native American human remains are identified in California Public Resources Code Section 5097.9. The project proponent shall ensure that the immediate project vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further ground-disturbing activity until consultation with the MLD has taken place. The MLD shall have 48 hours to complete a project site inspection and make recommendations after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, avoidance and preservation in place, relinquishment of the remains and associated items to the descendents, or other culturally appropriate treatment may be discussed. Assembly Bill 2641 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the landowner shall comply with one or more of the following: ▸ record the site with the NAHC or the appropriate Information Center, ▸ use an open-space or conservation zoning designation or easement, and/or ▸ record a document with the county in which the property is located. If the NAHC is unable to identify an MLD or if the MLD fails to make a recommendation within 48 hours after being granted access to the project site, the project proponent or its authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property, in a location not subject to further subsurface disturbance. The project proponent or its authorized representative may also reinter the remains in an appropriate location not subject to further disturbance if the project proponent rejects the recommendation of the MLD and if mediation by the NAHC fails to provide measures acceptable to the project proponent.	

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.6 Paleontological Resources			
3.6-1: Potential Damage to Unknown, Unique Paleontological Resources during Earth-Moving Activities. Portions of the PEIR study area are underlain by Pleistocene alluvial deposits that are paleontologically-sensitive. Therefore, earth-moving activities could disturb previously unknown, unique paleontological resources in the study area. Less than significant with mitigation.	PS	**3.6-1: Conduct Construction Personnel Education, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan as Required.** To minimize potential adverse impacts on previously unknown potentially unique, scientifically important paleontological resources, the project proponent for all Program elements in which earth-moving construction occur in the Plio-Pleistocene-age alluvial deposits (including the San Benito Formation) as shown on Figure 3.6-1 shall do the following: ▸ Before the start of any earth-moving activities for any Program element in the Plio-Pleistocene-age alluvial deposits (including the San Benito Formation) as shown on Figure 3.6-1, the project proponent shall retain a qualified paleontologist or archaeologist to train all construction personnel involved with earth-moving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered. ▸ If paleontological resources are discovered during earth-moving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the City or County (as appropriate, depending on the location of the find). The project proponent shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with the SVP guidelines (1996). The recovery plan may include, but shall not be limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the project proponent to be necessary and feasible shall be implemented before construction activities are resumed at the site where the paleontological resources were discovered.	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.7 Population, Employment, and Housing			
3.7-1: Temporary Increase in Population and Subsequent Housing Demand during Construction. Implementation of the proposed Program would generate a temporary increase in employment and subsequent housing demand in the City of Hollister and San Benito County from construction jobs. The existing residents in local cities and counties who are employed in the construction industry would be sufficient to meet demand associated with the proposed Program; therefore, this temporary increase in employment is not expected to generate any substantial new population growth in the area or generate the need for substantial additional housing for construction workers. Less than significant.	LTS	No mitigation measures are required.	LTS
3.7-2: Permanent Direct Increase in Population Growth. Implementation of the proposed Program would meet the needs of planned growth only, and it would not directly induce growth beyond levels already specified in the City and County General Plans. Program elements would be constructed on an incremental basis over the proposed Program's planning period, thus incrementally increasing the availability of water supplies and water and wastewater collection, conveyance, and treatment facilities to meet the needs of planned growth in the study area. Less than significant.	LTS	No mitigation measures are required.	LTS
3.7-3: Displacement of Existing Housing or People Resulting from Project Development. Implementation of the proposed Program would not displace existing housing or people. Construction of the Program elements would occur within the footprints of existing facilities, on vacant land, or within existing roadways and associated rights-of-way. Less than significant.	LTS	No mitigation measures are required.	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.8 Utilities and Public Services			
3.8-1: Increased Demand for Wastewater Treatment and Distribution Facilities. The proposed Program includes expansion the City's WRF, potential connection of the Cielo Vista WWTP to the City's WRF, and upgrade of the existing Ridgemark WWTPs. In addition, the proposed Program would construct new collection and conveyance infrastructure, such as gravity flow pipelines, force mains, and pump stations, to new serve customers within the HUA. A time-phased implementation plan has been developed for the new wastewater treatment and conveyance facilities. These facilities would be constructed and expanded incrementally to ensure that adequate wastewater treatment capacity and conveyance facilities would be to accommodate future wastewater flows generated within the HUA. Less than significant.	LTS	No mitigation measures are required.	LTS
3.8-2: Potential Temporary Damage to Existing Public Utilities Resulting in Disruption of Utilities Service. New collection and conveyance infrastructure associated with the proposed Program would be constructed in existing road rights-of-way. Construction techniques could inadvertently damage existing utility infrastructure causing disruption of service. Less than significant with mitigation.	PS	**3.8-1a: Locate Utility Lines, Confirm Utility Line Information Prior to Excavation, and Reconnect Utilities Promptly.** The project proponent or its contractors shall identify underground utility lines, such as natural gas, electricity, sewer, telephone, fuel, and water lines, that may be encountered during excavation work during the design phase. The project proponent or its contractors shall find the exact location of underground utilities by safe and acceptable means. Information regarding the size, color, and location of existing utilities shall be confirmed by the utility service provider. The project proponent shall prepare a detailed engineering and construction plan that identifies construction methods and protective measures to minimize impacts on utilities. The engineering and construction plan shall be submitted to the City of Hollister Public Works Department for review and approval before issuance of grading permit. Construction shall be scheduled to minimize or avoid interruption of utility services to customers. The project proponent or its contractors shall promptly reconnect any disconnected utility lines.	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.8-3: Short-Term Generation of Solid Waste during Project Construction. Project construction would generate short-term construction-related debris and waste. The city and county do not implement construction and demolition debris recycling ordinances and all solid waste generated during construction could potentially disposed in local landfills resulting in exceedance of daily permitted disposal limits. In addition, the quantity of waste materials could lower overall diversion rates as calculated for compliance with the CIWMA. Less than significant with mitigation.	PS	**3.8-3: Prepare and Implement a Construction Recycling Plan.** The project proponent shall prepare and implement a construction recycling plan for all Program elements involving construction activities. The recycling plan shall address the major recyclable materials, such as soil, metal scraps, and cardboard packaging, generated by project construction and identify the means to divert these materials away from landfills. All recyclable materials shall be disposed of at the John Smith Road Class III Landfill, Buena Vista Drive Sanitary Landfill, and Johnson Canyon Sanitary Landfill, or other designated recycling facility permitted to accept construction debris and solid waste. Construction recycling plans shall be submitted to the San Benito County Integrated Waste Management Department for review and approval before issuance of grading permits for all Program elements. The construction recycling plans shall be implemented during construction of all project phases.	LTS
3.8-4: Increased Generation of Solid Waste Resulting from Brine Disposal. Demineralization of urban wells would result in the collection of brine. Salt classified as a nonhazardous waste could be disposed of at the John Smith Road Class III Landfill, Buena Vista Drive Sanitary Landfill, and Johnson Canyon Sanitary Landfill, which all have sufficient permitted capacity to accommodate brine disposal. Less than significant.	LTS	No mitigation measures are required.	LTS
3.9 Hazards and Hazardous Materials			
3.9-1: Accidental Spills of Hazardous Materials. Proposed Program-related construction and maintenance activities would involve the use of potentially hazardous materials, such as fuels, oils and lubricants, and cleaners. Compliance with applicable regulations would reduce the potential for accidental release of hazardous materials during their transport and during construction activities. Less than significant.	LTS	No mitigation measures are required.	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.9-2: Potential Exposure of Construction Workers and the General Public to Unknown Hazardous Materials Encountered in the Study Area. Hazardous materials may have been released into the study area near potential construction sites, which could expose construction workers to harmful substances. Less than significant with mitigation.	PS	**3.9-2: Conduct Phase I and II Environmental Site Assessments and Implement Required Measures.** Before the start of earth-moving activities, the project proponent shall retain a registered environmental assessor to conduct Phase 1 ESAs and, if necessary, Phase II ESAs and/or other appropriate testing for all areas subject to ground-breaking activities under the Program element. The assessor shall also conduct, as necessary, analyses of soil and/or groundwater samples for the potential contamination sites. Recommendations in the Phase I and II ESAs to address any contamination that is found shall be implemented before initiating ground-disturbing activities in these areas. The project proponent shall be required to comply with the applicable federal, state, and local laws. The appropriate federal, state, and local agencies shall be notified if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities under the Program element. Any contaminated areas shall be remediated in accordance with recommendations made by RWQCB, DTSC, and/or other appropriate federal, state, or local regulatory agencies.	LTS
3.9-3: Hazardous Emissions or Handling of Hazardous or Acutely Hazardous Materials, Substances, or Waste within One-Quarter Mile of an Existing or Proposed School. Potentially hazardous materials, such as fuels (gasoline and diesel), oils and lubricants, and cleaners (which could include solvents and corrosives in addition to soaps and detergents) that are commonly used in construction projects would be used near schools located within the PEIR study area. The potential exists for exposure to both known and previously unknown hazardous materials within one-quarter mile of a school during construction activities. Less than significant with mitigation.	PS	**3.9-3: Notify the School District and Applicable Schools with Jurisdiction within One-Quarter Mile of Project Construction Activities.** The project proponent shall provide written notification to each school within one-quarter mile of proposed Program construction activities within 30 days prior to certification of a project-specific CEQA document approving a Program element within one-quarter mile of affected schools. The project proponent shall disclose the type of potential hazards associated with Program element or project implementation with the applicable school district and provide guidance on the potential effects that the hazards could have on school children.	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.9-4: Potential Public Health Hazards from Exposure of Individuals in the Study Area to Known Hazardous Materials Sites Outside the Study Area Pursuant to Government Code Section 65962.5. Cortese-listed sites located within the study area could conflict with implementation of the proposed Program and adversely affect public health or the environment. Less than significant with mitigation.	PS	**3.9-4a: Retain a Licensed Professional to Investigate the Status of Cortese-Listed Sites and Implement All Remedial Measures, as Necessary.** Proposed Program elements involving construction activities shall not occur in any areas subject to Cortese listing until the appropriate regulatory agencies, such as DTSC and RWQCB, have been consulted and all actions required by the regulatory agencies (e.g., dewatering, installation of groundwater monitoring wells, and soil testing) have been implemented. **3.9-4b: Coordinate Program Construction Activities to Avoid Interference with Remediation Activities, as Necessary.** For all Program elements that occur in or adjacent to Cortese-listed sites, the project proponent shall provide notice to the hazardous waste site landowner or any successor in interest and DTSC, RWQCB, the City of Hollister, and San Benito County of the location, nature, and duration of construction activities at least 30 days before construction activities begin in areas on or near property with current or planned remediation activities. Remedial actions, as required by DTSC, RWQCB, and/or the EPA, may include, but shall not be limited to: ▸ deed restrictions on land and groundwater use; ▸ soil excavation; ▸ monitoring; ▸ biological, chemical, and/or physical treatment; ▸ extraction; and/or ▸ pump and treat activities. Before the approval of grading plans that include areas within a Cortese-listed site boundary, the project proponent shall work with the hazardous waste site landowner, DTSC, and RWQCB or any successor to schedule the timing of construction activities to prevent potential conflicts with remediation activities.	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.9-5: Potential Safety Hazards for People Residing or Working Near a Public or Private Airstrip. Construction near airports can pose safety hazards to passengers, pilots, and people working in or residing near a public or private airstrip. Less than significant with mitigation.	PS	**3.9-5: Coordinate with Airports and Airport Planning Agencies When Construction Activities Occur within 2 miles of an Airport or Airstrip.** Avoid locating brine drying ponds within two miles of an airport if feasible. If brine drying ponds occur within 2 miles of an airport or airstrip, the project proponent shall submit plans and specifications for the affected Program element to the applicable airport planning agencies for review and implement any recommendations from the agencies to the extent feasible.	LTS
3.9-6: Potential Interference with Emergency Evacuation Routes during Project Construction. Construction of the proposed Program could increase traffic on local roadways associated with construction trips, which could interfere with emergency evacuation routes. Less than significant with mitigation.	PS	Implement Mitigation Measure 3.9-1 "Prepare and Implement Traffic Control Plan."	LTS
3.10 Transportation and Traffic			
3.10-1: Reduced Traffic Circulation and Roadway Capacity Resulting from Temporary and Short-Term Construction Activities and Project Operations. Program operations are not expected to result in impacts to traffic or transportation. However, the construction of some Program elements could occur near public roads and could adversely affect nearby traffic patterns on a temporary short-term basis. Less than significant with mitigation.	PS	**3.10-1: Prepare and Implement a Traffic Control Plan.** The project proponent shall prepare a traffic control plan for each Program element that would involve partial road closures for more than 1 week. The traffic control plan shall be prepared in accordance with professional traffic engineering standards and in compliance with the requirements of the affected jurisdiction's encroachment permit requirements. The traffic control plan may include, but not be limited to, the following measures: ▸ Identify specific construction methods to maintain traffic flows on affected streets. ▸ Maintain the maximum amount of travel land capacity during nonconstruction periods and provide flagger control at sensitive sites to manage traffic control and flows. ▸ Limit the construction work zones to widths that, at a minimum, shall maintain alternate one-way traffic flow past the construction zones.	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		► Coordinate construction activities (time of year and duration) to minimize traffic disturbances adjacent to schools and commercial areas. ► Post advanced warning of construction activities to allow motorists to select alternative routes in advance. ► Prepare appropriate warning signage and lighting for construction zones. ► Identify appropriate and safe detour routes if closure of a roadway is required, and install signage that warns of road closures and detour routes. ► Maintain steel trench plates at construction sites to restore access across open trenches to minimize disruption of access to driveway and adjacent land uses. Construction trenches in street shall not be left open after work hours. ► The traffic control plan shall be reviewed for appropriateness and approved by the governing public works department.	
3.10-2: Reduced Emergency Access from Temporary Short-Term Street Closures. Construction associated with Program elements may require temporary lane or road closures, or otherwise affect traffic circulation. These impacts could delay or reduce emergency access within and around construction zones. Less than significant with mitigation.	PS	**3.10-2: Minimize Impacts on Emergency Vehicle Access.** To minimize impacts on emergency vehicle access, the project proponent shall implement the following measures to the extent feasible: ► Provide a traffic control plan (prepared as part of Mitigation Measure 13.10-1) to the City of Hollister Police and Fire Departments, and the San Benito County Sheriff's Office and Fire Department prior to initiating construction; and ► Consider all recommended measures identified by the City and County emergency services departments and implement feasible recommendations.	LTS
3.11 Air Quality and Global Climate Change			
3.11-1: Temporary and Short-Term Increases in Emissions of ROG, NO_X, PM_{10}, and GHG during Project Construction. Project-related CAPs and GHG emissions would increase during project construction and would be significant. Less than significant with mitigation for dust control and CAPs/precursors. Significant and unavoidable for GHG emissions.	PS	**3.11-1: Implement Feasible MBUAPCD-Recommended Control Measures to Minimize Short-Term Construction Emissions of PM_{10} (Fugitive Dust), ROG, and NO_X, and Incorporate Best Management Practices to Reduce GHG Emissions during Construction.** The project proponent shall ensure that for all construction activities associated with the proposed Program: 1) the	LTS (dust control) SU (GHG emissions)

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		measures presented in Table 3.11-5 shall be implemented, where feasible, to reduce the amount of fugitive dust that is reentrained into the atmosphere from unpaved areas, parking lots, and construction sites; and 2) the measures presented in Table 3.11-6 shall be implemented, where feasible, to reduce the amount of temporary construction emissions from heavy-duty equipment to minimize ozone precursors and PM_{10} (MBUAPCD 2008). To address construction-related GHG emissions, the project proponent shall identify and incorporate best management practices to reduce GHG emissions during construction, where feasible, which may include, but is not limited to the use of alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment; use of local building materials; and recycling or reusing construction waste or demolition materials.	
3.11-2: Long-Term Increases in Emissions of ROG, NO_X, and PM_{10} Associated with Project Operations. The project could generate substantial and potentially significant long-term emissions if it includes diesel-engine or gas turbine generators for general or emergency power generation and pumping; central-heating boilers/chillers for larger buildings; equipment for demineralization; or other water and wastewater treatment processes. Less than significant with mitigation.	PS	**3.11-2: Implement Reasonably Available Control Technology.** Future projects that involve new or expanded stationary sources of CAPs shall incorporate Reasonably Available Control Technology or Best Available Control Technology to reduce such emissions, as feasible. The application of such technologies will depend on the type of stationary source proposed, but will include those appropriate measures addressed in the California Air Pollution Control Officer's Association BACT Clearinghouse, the South Coast Air Quality Management District's BACT Clearinghouse, or EPA's AP-42 Compilation of Air Pollutant Emission Factors (Volume I).	LTS
3.11-3: Long-Term Increases in Greenhouse Gas Emissions Associated with Project Operations. Project operations would require the potentially significant combustion of fossil fuels for pumping, demineralization, and other treatment processes, either directly (if diesel or natural gas are used) or indirectly (if electricity is used). Accommodation of growth in the HUA would increase GHG emissions of CH_4 and N_2O associated with increased wastewater treatment. Potentially significant and unavoidable.	PS	**3.11-3: Use Equipment that Produces Less Greenhouse Gas Emissions.** When feasible, the project proponent shall use electricity rather than stationary combustion for the purposes of pumping, treatment, and discharge/disposal of water and wastewater.	PSU

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.11-4: Exposure of Sensitive Receptors to Toxic Air Contaminants. Construction-related activities would result in short-term emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment. The proposed Program also includes facilities which may potentially include stationary sources of TACs, such as pumps or generators (including backup generators), using diesel fuel. Less than significant.	LTS	No mitigation measures are required.	LTS
3.11-5: CO Concentrations. The proposed Program is not expected to generate new traffic or worsen existing conditions, as new facilities are not expected to be large enough to generate substantial numbers of new trips or change traffic patterns. Less than significant.	LTS	No mitigation measures are required.	LTS
3.11-6: Increased Odor Sources from Project Construction and Operations. Odors associated with diesel fumes during construction would be temporary and would disperse rapidly with distance from the source. Because expansion of wastewater and recycled water facilities would not affect odor control designs, devices, and practices, the Program would not subject sensitive receptors to additional odors from Program operations. Less than significant.	LTS	No mitigation measures are required.	LTS
3.12 Noise			
3.12-1: Expose Noise Sensitive Receptors to Temporary Short-Term Construction Noise Levels. Short-term construction source noise levels could exceed applicable standards at nearby noise-sensitive receptors. In addition, if construction activities were to occur during more noise-sensitive hours, construction source noise levels could also result in annoyance and/or sleep disruption to occupants of noise-sensitive land uses and create a substantial temporary increase in ambient noise levels. Less than significant with mitigation.	PS	**3.12-1a: Avoid Construction Activities within 2,000 Feet of Noise-Sensitive Receptors to the Extent Practicable.** The project proponent will not conduct construction-related activities within 2,000 feet of noise-sensitive receptors. If this distance is infeasible, construction-related activities shall be sited as far from noise-sensitive receptors as possible. **3.12-1b: Implement Measures to Reduce Temporary Short-Term Noise Levels from Construction Activities to the Extent Practicable.** The project proponent will implement the following measures during project construction activities to reduce temporary and short-term noise levels: ▸ use construction equipment as far away as practical from noise-sensitive uses;	PSU

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		▸ comply with the operational hours outlined in local general plans and ordinances where construction activities occur; ▸ locate fixed/stationary equipment as far as possible from noise-sensitive receptors; ▸ properly maintain construction equipment per manufacturers' specifications and fit such equipment with the best available noise suppression devices (e.g., mufflers, silencers, and wraps). All impact tools will be shrouded or shielded, and all intake and exhaust ports on power equipment will be muffled or shielded; ▸ use construction equipment that is quieter than standard equipment, including electrically powered equipment instead of internal combustion equipment where use of such equipment is a readily available substitute that accomplishes project construction in the same manner as internal combustion equipment; and ▸ prohibit idling of construction equipment for extended periods of time when it is not being used for construction activities.	
3.12-2: Possible Exposure of Noise-Sensitive Receptors to Temporary Short-Term Off-Site Traffic Noise Levels. Short-term construction-generated traffic source noise levels could exceed the applicable standards or create a substantial temporary increase in ambient noise levels at noise-sensitive receptors. Less than significant with mitigation.	PS	**3.12-2a: Avoid and Minimize Temporary Short-Term Noise Levels from Construction-Related Traffic Increases.** The project proponent's construction contractor shall avoid designating truck haul routes on local roadways with adjacent noise-sensitive receptors if practicable. If avoidance is not possible, the construction contractor shall designate truck haul routes with the fewest possible adjacent noise-sensitive receptors. **3.12-2b: Implement Feasible Measures to Reduce Temporary Short-Term Noise Levels from Construction-Related Traffic Increases.** If proposed Program element construction results in greater than 350 daily truck trips (175 round trips), the project proponent shall implement the following measures during construction activities: ▸ develop and implement project-specific mitigation measures to reduce construction-related traffic noise level increases on haul routes to include, but are not limited to:	LTS

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		• reducing haul truck operation speeds, • limiting the amount of material to be hauled daily, • limiting the hours of operation for haul trucks, and • installing temporary noise barriers adjacent to sensitive receptor locations; ► equip all heavy trucks with noise control devices (e.g., mufflers) in accordance with manufacturers' specifications; and ► periodically inspect all heavy trucks to ensure proper maintenance and presence of noise control devices (e.g., lubrication, nonleaking mufflers, shrouding).	
3.12-3: Possible Exposure of Noise-Sensitive Receptors to Long-Term Off-Site Traffic Noise Levels. Program facilities would have minimal staffing requirements and not be expected to generate traffic source noise levels that could exceed the applicable standards or create a substantial temporary increase in ambient noise levels at noise-sensitive receptors. However, off-site hauling could be associated with the demineralization Program element. Less than significant with mitigation.	PS	**3.12-3: Implement Feasible Measures to Reduce Long-Term Noise Levels from Operations-Related Traffic Increases.** If operation of a Program element would generate greater than 350 daily truck trips, the project proponent shall implement the following measures during operational activities: ► select haul routes that would not affect sensitive receptors to the extent feasible ► develop and implement project-specific mitigation measures to reduce operations-related traffic noise level increases on Program element haul routes to include, but not be limited to: • reducing haul truck operation speeds, • limiting the amount of material to be hauled daily, • limiting the hours of operation for haul trucks, and • installing temporary noise barriers adjacent to sensitive receptor locations; ► equip all heavy trucks with noise control devices (e.g., mufflers) in accordance with manufacturers' specifications. ► periodically inspect all heavy trucks to ensure proper maintenance and presence of noise control devices (e.g., lubrication, nonleaking mufflers, and shrouding).	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.12-4 :Expose Noise-Sensitive Receptors to Long-Term On-Site Operational Noise Levels. Long-term operational source noise levels from stationary sources could exceed the applicable standards at nearby noise-sensitive receptors. Less than significant with mitigation.	PS	**3.12-4: Implement Feasible Measures to Reduce Long-Term Operations-Related Noise Levels.** The project proponent shall implement the following measures to reduce long-term noise levels from operations-related increases: ▸ locate Program elements as far from sensitive receptors as feasible; ▸ conduct a noise analysis if an individual Program element generates or exposes noise-sensitive receptors to noise levels exceeding local exterior noise standards or result in a noticeable and long-term noise level increase (5 dB [L_{eq}] in areas with an ambient noise level of less than 60 dB or 3 dB [L_{eq}] in areas with an ambient noise level of 60 dB or greater) in ambient noise levels. The noise analysis shall establish existing ambient noise environment and noise levels created by individual Program elements; ▸ implement reasonable actions to minimize noise impacts identified in the noise analysis; and ▸ develop and implement project-specific mitigation measures to reduce operations-related noise level increases of Program elements to ensure a noticeable noise level increase (5 dB [L_{eq}] in areas with an ambient noise level of less than 60 dB or 3 dB [L_{eq}] in areas with an ambient noise level of 60 dB or greater) does not result.	LTS
3.12-5: Possible Generation of Temporary Short-Term Excessive Groundborne Vibration or Groundborne Noise Levels. Temporary short-term Program-generated construction source vibration levels could exceed Caltrans' recommended standard of 0.2 in/sec PPV with respect to the prevention of structural damage for normal buildings, and the FTA recommended maximum acceptable vibration standard of 80 VdB with respect to human response for residential uses (i.e., annoyance) at vibration-sensitive land uses. Less than significant with mitigation.	PS	**3.12-5a: Avoid and Minimize Groundborne Noise and Vibration Levels.** The project proponent shall not conduct construction activities within close proximity to vibration-sensitive receptors if practicable. If avoidance is not possible, construction activities shall be sited as far from vibration-sensitive receptors as possible. **3.12-5b: Implement Feasible Measures to Reduce Groundborne Noise and Vibration Levels.** The project proponent shall implement the following measures during construction activities: ▸ the construction contractor's contact information shall be posted in a location near Program element construction sites,	LTS

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		clearly visible to the nearby receptors most likely to be disturbed. The construction contractor will manage complaints and concerns resulting from activities that cause vibrations. The severity of the vibration concern will be assessed by the contractor and, if necessary, evaluated by a qualified noise and vibration control consultant; ► conduct vibration monitoring before and during pile-driving operations if such operations occur within 100 feet of any historic structures. Every attempt will be made to limit construction-generated vibration levels in accordance with Caltrans' recommendations during pile driving and other groundborne noise and vibration-generating activities in the vicinity of the historic structures; ► cover or temporarily shore adjacent historic features, as necessary, for protection from vibration, in consultation with a qualified architectural historian; ► use alternative installation methods (e.g., pile cushioning, jetting, pre-drilling, cast-in-place systems, or resonance-free vibratory pile drivers) where possible for pile driving required within a 50-foot radius of residences. These types of alternative installation methods would reduce the number and amplitude of blows required to seat the pile; and ► conduct pile-driving activities within 285 feet of sensitive receptors during daytime hours, to avoid sleep disturbance during evening and nighttime hours.	
3.13 Recreational Resources			
3.13-1: Potential Reduction of Availability or Quality of Existing Recreational Activities and Opportunities in the Study Area. Most Program elements would occur at existing water facility sites or rural areas away from recreational activities and opportunities. No operations-related impacts would occur, and the only possible impacts would be temporary short-term construction-related impacts of any Program elements that might be located near existing recreational facilities. Less than significant.	LTS	No mitigation measures are required.	LTS

B = Beneficial LTS = Less than significant NI = No impact PS = Potentially significant PSU = Potentially significant and unavoidable
S = Significant SU = Significant and unavoidable

Table ES-3
Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.13-2: Potential Impact on Ridgemark Golf Course from Recycled Water. Recycled water with a relatively high salt content would be provided to the Ridgemark Golf Course. The proposed Program includes blending recycled water with higher quality water prior to delivering the water to Ridgemark Golf Course. No impact.	NI	No mitigation measures are required.	NI
3.14 Visual Resources			
3.14-1: Adverse Effects on Existing Visual Character and Scenic Vistas or Resources. The proposed project would result in the construction of new facilities and upgrades/expansions to existing facilities in the HUA. SR 25 is an "Eligible State Scenic Highway" that passes through Hollister and would be sensitive to landscape changes from Program elements. The extent of potential effects on scenic views and existing visual character from permanent structures and temporary construction activities cannot be determined without specific information concerning each facility's location and design. Less than significant with mitigation.	PS	**3.14-1: Avoid Substantial Alteration of Scenic Views and Substantial Changes to Existing Visual Character, When Feasible.** To mitigate the visual impact of new structures introduced into the landscape, the project proponent shall locate and design Program elements in a manner that enhances their visual integration into existing environs, when feasible. Design elements may include but shall not be limited to the painting of structural facades to blend with surrounding land uses, partial burial of above ground facilities such as drinking water storage tanks if feasible, or implementing appropriate landscaping and design to minimize visual impacts. During construction periods for the various Program elements, the project proponent shall ensure that construction equipment, construction staging areas, and construction sites are sufficiently shielded, when feasible, to the extent that they do not substantially alter scenic views.	LTS
3.14-2: New Sources of Substantial Light and Glare. Implementation of the proposed Program would involve the establishment of new water and wastewater infrastructure facilities requiring the installation of new lighting systems and equipment that would be a source of glare. Less than significant with mitigation.	PS	**3.14-2: Avoid Substantial New Light and Glare on Surrounding Views, When Feasible.** The project proponent shall ensure that lighting and building materials at new and upgraded/expanded facilities shall be designed to the extent feasible to avoid the generation of substantial new light or glare that may negatively affect surrounding views. The project proponent shall provide project specifications for construction of Program elements to reduce lighting intrusion and glare on surrounding uses, to the extent feasible. Highly reflective building materials and/or finishes shall not be used in the design of proposed elements, and landscaping shall be maintained to minimize off-site light and glare.	LTS

B = Beneficial
S = Significant
LTS = Less than significant
SU = Significant and unavoidable
NI = No impact
PS = Potentially significant
PSU = Potentially significant and unavoidable

ES.11 PUBLIC REVIEW AND COMMENT

Throughout preparation of the Master Plan and Coordinated Plan and continuing through preparation of the PEIR, the lead agency and responsible parties have conducted a transparent and open process informing elected officials and the public with regular updates at Board and City Council meetings, mailing notices to interested parties, publishing notices in local newspapers (the Pinnacle and the Hollister Free Lance), and hosting a booth at the County Fair. In addition to these ongoing updates, the PEIR preparation process included a 30-day scoping period from June 22, 2010 to July 22, 2010 and a 45-day public review period for the Draft PEIR from October 4, 2010 through November 17, 2010. One letter was received during the scoping period and one letter was received during the Draft PEIR review period. Both letters were from the State Water Resources Control Board (SWRCB) and concern Program funding. No other comments from the public or agencies were received on the Draft PEIR. Chapter 9, "Public Review and Comment," provides SBCWD's response to the comments received from SWRCB.

This page intentionally left blank.

1 INTRODUCTION

This Final Programmatic Environmental Impact Report (Final PEIR) for the Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan (Program) consists of the Draft Programmatic Environmental Impact Report (Draft PEIR) dated October 4, 2010, plus errata and revisions included herein as Chapter 10, written comments received by the San Benito County Water District (SBCWD) on the Draft PEIR, and SBCWD's response to those comments (Chapter 9).

There were no comments received on the Draft PEIR that required any modifications to the Draft PEIR, including changes in the evaluation of potential environmental impacts, mitigation measures, or significance determinations. Any edits to the Draft PEIR are underlined or shown as strikeouts as needed.

1.1 PROGRAM PURPOSE AND OBJECTIVES

The Program analyzed in this program environmental impact report (PEIR) is defined in the 2008 Hollister Urban Area Water and Wastewater Master Plan (Master Plan) (Memorandum of Understanding [MOU] Parties 2008) and the 2010 Coordinated Water Supply and Treatment Plan (Coordinated Plan) (MOU Parties 2010). The overall purpose of the Program is to:

- Improve the quality of municipal drinking water, industrial supply, and recycled water for urban and agricultural irrigation users.
- Provide a reliable and sustainable water supply to meet the current and future demands of the Hollister Urban Area (HUA).
- Implement goals for the Hollister Water Reclamation Facility to be the primary wastewater treatment plant for incorporated and unincorporated lands in the HUA to protect groundwater quality and public health.

The specific Program objectives are as follows:

- Improve municipal, industrial, and recycled water quality.
- Increase the reliability of the water supply.
- Coordinate infrastructure improvements for water and wastewater systems.
- Implement goals of the Groundwater Management Plan (SBCWDWRA 2003).
- Integrate the Long-Term Wastewater Management Plan (City of Hollister 2007).
- Support economic growth and development consistent with City of Hollister (City) and San Benito County (County) general plans (City 2005 and County 1992) and policies.
- Consider regional water and wastewater issues and solutions.

The proposed Program, which constitutes the proposed project in this PEIR under the California Environmental Quality Act, consists of a number of individual elements (Program elements or projects) for water, wastewater, and recycled water. The proposed Program is scheduled to be completed by 2023 and is phased to provide flexibility in responding to changing conditions.

1.2 PROGRAM LOCATION AND STUDY AREA

The proposed Program is located in San Benito County, California, approximately 50 miles southeast of the City of San Jose and 40 miles east of Monterey Bay. Most of the Program elements are located within the HUA (Figure 1-1), which includes the City and adjacent unincorporated areas of the County designated for urban development (MOU Parties 2008:ES.1). The HUA is the basis of planning used for developing the Master Plan and Coordinated Plan. The PEIR study area extends beyond the HUA to include areas within groundwater subbasins that could potentially be affected by the proposed Program. As shown in Figure 1-2, the PEIR study area includes the area of unincorporated County lands that extend north from the northern boundary of the City's sphere of influence to the County line as defined by the California Department of Water Resources' (DWR's) Bolsa, Hollister Valley, and San Juan groundwater subbasins (DWR 2004).

1.3 PROGRAM BACKGROUND

The Program purpose and objectives are based upon the MOU among the City, County, San Benito County Water District (SBCWD), and Sunnyslope County Water District (SSCWD) (collectively referred to as the MOU Parties). The MOU was developed in 2004 by the City, County, and SBCWD, and was amended in 2008 to include SSCWD (MOU Parties 2008:ES.1). In addition to defining principles and objectives for the Master Plan, the MOU established governance and management committees for the development, guidance, and definition of roles for administration of the Master Plan.

Numerous studies and reports have been prepared regarding water supply and treatment, wastewater treatment and disposal, and recycled water in the HUA. The key planning studies that provide the basis for the Program analyzed in this PEIR are: the Master Plan, the Coordinated Plan, the Urban Water Management Plan Update, the City of Hollister Long-Term Wastewater Management Plan (City LTWMP), SSCWD's Long-Term Wastewater Management Plan (SSCWD LTWMP), the Recycled Water Feasibility Study, and the Groundwater Management Plan (GWMP).

1.3.1 HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN

The Master Plan, completed in November 2008, provides a long-term vision through 2023 to meet existing and future water resources needs of the HUA. The water demands in the HUA are projected to increase from 7,965 acre-feet per year (afy) in 2005 to 11,840 afy in 2023 and 20,150 afy at buildout. The Master Plan provides a comprehensive plan describing (1) capacity and estimated cost of facilities, and (2) an implementation schedule including institutional arrangements, engineering, California Environmental Quality Act (CEQA) compliance, permitting, financing, coordination with ongoing projects and programs, and stakeholder outreach.

1.3.2 HOLLISTER URBAN AREA COORDINATED WATER SUPPLY AND TREATMENT PLAN

The Coordinated Plan, completed in January 2010, provides a regional approach to implement the water supply and treatment recommendations presented in the 2008 Master Plan. The Coordinated Plan updates the Master Plan with respect to current conditions, including the recent drought, better understanding of Hollister Conduit capacity, recycled water needs, slower growth in demands, and the economic downturn.

Source: HDR 2008

Regional Map of Hollister Urban Area **Figure 1-1**

1.3.3 URBAN WATER MANAGEMENT PLAN UPDATE

The City and SSCWD jointly developed the 2008 UWMP Update, which includes water demand projections and estimates of water supply reliability. The demand projections are based on population projections and are not directly associated with planned land uses identified in the City's General Plan that was adopted in December 2005 or the San Benito County General Plan (Land Use Element, adopted by the Board of Supervisors on July 14, 1992) (MOU Parties 2008:4-14).

1.3.4 CITY OF HOLLISTER LONG-TERM WASTEWATER MANAGEMENT PLAN

The City has developed a draft LTWMP (draft March 2007) for reliably treating and disposing of the City's domestic and industrial wastewaters. The purpose of the City LTWMP is to determine the wastewater treatment components and storage and land required to achieve the City LTWMP goal for projected growth described in the City's General Plan through 2023 (MOU Parties 2008:4-14).

1.3.5 SSCWD LONG-TERM WASTEWATER MANAGEMENT PLAN

SSCWD completed a LTWMP in 2006 that evaluates the two Ridgemark wastewater treatment facilities and provides guidance on capital improvements necessary to meet both future growth needs and regulatory requirements.

1.3.6 RECYCLED WATER FEASIBILITY STUDY

The San Benito County Regional Recycled Water Project Feasibility Study was completed in 2005 and updated in 2008. The study objective was to identify a market for and define the facilities necessary to provide recycled water for high-value agriculture. The facilities were phased; Phase 1 has been completed and Phase 2 is being evaluated as part of this PEIR.

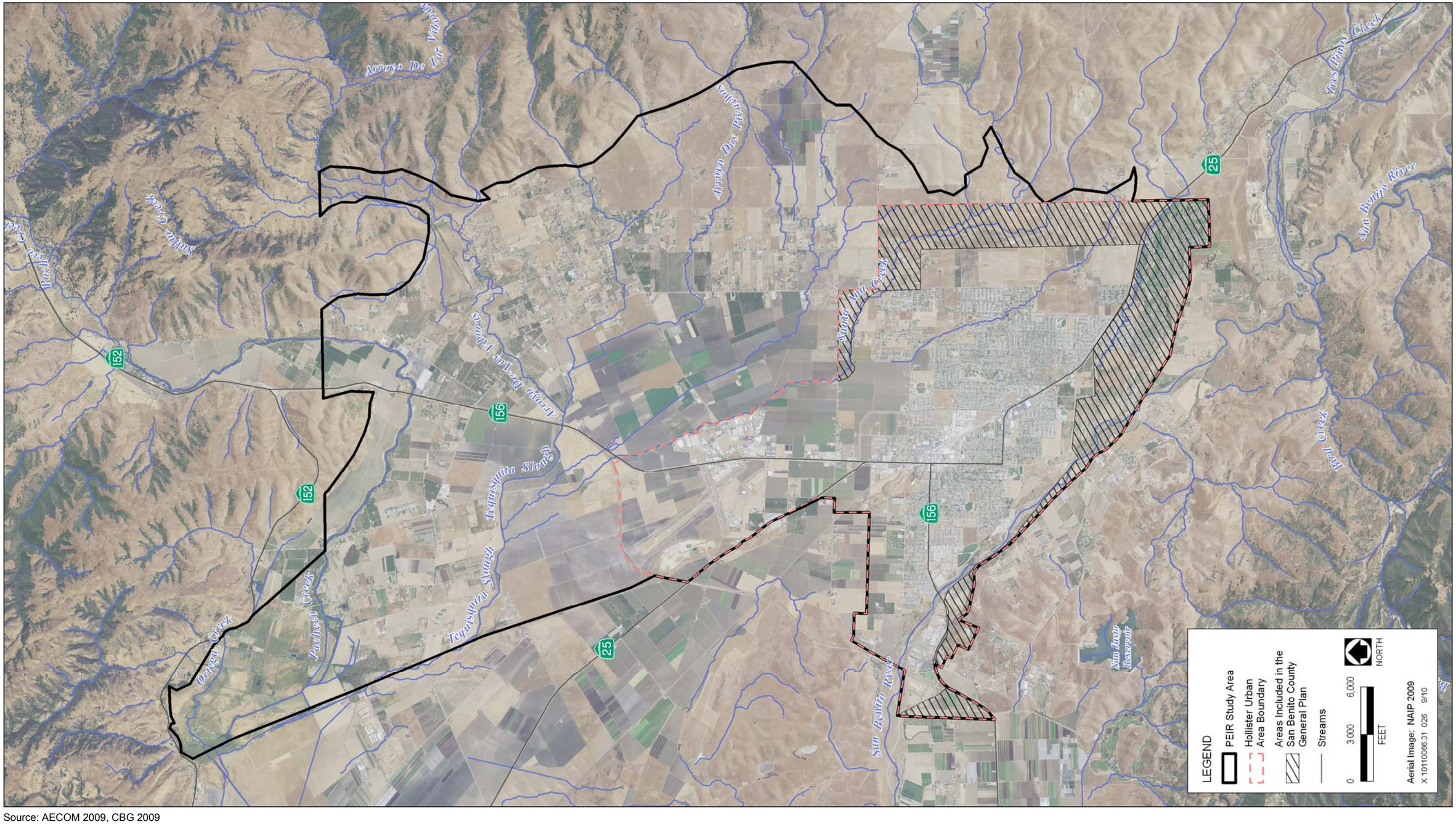
1.3.7 GROUNDWATER MANAGEMENT PLAN

In 1998, the GWMP for the San Benito portion of the Gilroy-Hollister Valley Groundwater Basin was prepared for the Aromas Water District, the cities of Hollister and San Juan Bautista, SBCWD, SSCWD, and the Tres Pinos County Water District. The 1998 plan was accepted as complete, but never formally adopted by these agencies. The GWMP Update in 2003 builds upon the 1998 plan. The overall goal of the GWMP Update is to maintain and enhance the agricultural and economic productivity of San Benito County in an environmentally responsible manner.

1.4 PROGRAM NEED

Although treated drinking water meets all primary federal and state drinking water regulations in the HUA, hardness and minerals in the water supply need to be reduced. The reliability of imported surface water from the federal Central Valley Project (CVP) has declined significantly because of major environmental, regulatory, and legal constraints to pumping and exporting water from the Sacramento–San Joaquin River Delta (Delta). The sustainability of local supplies requires review. The high level of minerals in the treated wastewater limits both disposal and recycling options because of adverse impacts to crops and groundwater. Therefore, the Program was developed to address the following needs:

Quality of drinking water and recycled water—Substantial differences between groundwater and imported surface water quality exist with regard to constituent concentrations such as total dissolved solids (TDS), hardness, and nitrates. Historically, TDS concentrations in the local groundwater have ranged from 800 to 1,200 milligrams per liter (mg/L), and imported CVP surface water has had TDS concentrations ranging from



Source: AECOM 2009, CBG 2009

PEIR Study Area **Figure 1-2**

- 250 to 300 mg/L. The higher concentrations of TDS and hardness in the groundwater results in the need for home water softeners and limits opportunities for recycled water use.

- Reliability of water supply—Water supplies for the HUA consist of groundwater and imported CVP surface water supplies. Based on current trends, it is likely that the reliability of imported surface water supplies will continue to decline. Currently, when CVP supplies are insufficient, additional water needs are met using urban groundwater wells.

- Regional wastewater facility – The wastewater service area boundary must be expanded for connection of unincorporated development to the regional City of Hollister WRF, consistent with the principles of wastewater treatment and disposal in the MOU.

- Coordination of water and wastewater system improvements—The County population is projected to increase from 58,388 in 2010 to 83,383 by 2025 (AMBAG 2008; DOF 2010). The water and wastewater facilities required to serve the needs projected in the City and County General Plans must be coordinated to coincide with the timing of new residential, commercial, and industrial development, to be able to provide the required level of service and minimize costs.

- Regional balance of water resources including high groundwater areas—The use of imported CVP surface water has helped stabilize groundwater levels but contributes to high groundwater conditions in the northern portion of the HUA. Previous analyses have concluded that the existing water supplies are sufficient to meet projected demands over the timeframe of the current City and County General Plans (through 2023) under normal (non-drought) conditions. However, because of the water quality, reliability, and wastewater disposal issues, a more effective balance in the use of available water supplies is required.

1.5 PURPOSE OF THIS PROGRAM EIR

As the lead agency under CEQA, SBCWD has determined that implementation of the proposed Program may have significant effects on the environment and has directed the preparation of this ~~draft~~ PEIR to analyze these potentially significant effects. The City, County, and SSCWD are responsible agencies under CEQA, and with SBCWD, are collectively considered to be the Program proponent.

To certify the PEIR, SBCWD must find that this PEIR has been completed in compliance with CEQA. Under the programmatic approach, additional technical analyses and environmental compliance under CEQA will be necessary prior to implementation of some of the future actions. Additional mitigation monitoring and reporting programs related to future implementation would be developed and required as part of future project-level environmental documentation as needed.

1.5.1 INTENDED USE OF PEIR

An EIR is an informational document that is intended to inform public agency decision makers and the general public of the potential significant adverse environmental effects of a project, identify feasible measures that would minimize those effects, and describe a reasonable range of alternatives to the project that would feasibly attain most of the basic project objectives but would avoid or substantially lessen the significant environmental effects of the project. A Program EIR is an EIR prepared on a series of actions that can be characterized as one large project and that are related geographically; as logical parts in the chain of contemplated actions; in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways (CEQA Guidelines Section 15168). A Program EIR enables a lead agency to examine the overall effects of the proposed course of action and to consider broad policy alternatives and programwide mitigation measures at an early time in the decision-making process when the agency has greater flexibility to deal with basic problems or cumulative impacts.

This ~~draft~~ PEIR presents a Program-level analysis of the significant environmental effects that could result as Program elements are implemented. The PEIR has been prepared in accordance with the requirements of CEQA and the State CEQA Guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et seq.), as amended. This PEIR does not contain any project-level analysis. Consequently, no Program element, unless already approved under CEQA at a project level or exempted from CEQA, can be implemented without further CEQA documentation beyond this PEIR.

This Program-level analysis broadly examines the significant environmental effects that could result from implementing the proposed Program, and specifically in the case of this PEIR, the physical effects associated with the construction and operation of water treatment facilities, treated water storage, groundwater production and banking, desalination and brine disposal, and recycled water facilities. This PEIR will provide SBCWD and the other MOU parties with the environmental information needed to support a final decision on whether or not to adopt the proposed Program.

1.5.2 AGENCY ROLES AND RESPONSIBILITIES

As the CEQA lead agency for the proposed Program, SBCWD has primary authority for approval of the Program. This PEIR will be used by the MOU Parties to fulfill the requirements of CEQA. The PEIR also may be used as an informational document by federal agencies that could have permitting or approval authority (including partial funding) for aspects of the projects, and by other state and local agencies, including CEQA trustee agencies, that may have an interest in resources that could be affected by the proposed Program.

A CEQA responsible agency is a state agency, board, or commission or any local or regional agency, other than the lead agency, that has discretionary approval power for a project. Responsible agencies must actively participate in the lead agency's CEQA process and review the lead agency's CEQA document. This PEIR will be used by responsible agencies to ensure that they have met the requirements of CEQA before deciding whether to approve or permit Program elements over which they have authority.

A CEQA trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California. The California Department of Fish and Game (DFG) is a trustee agency with jurisdiction over fish and wildlife resources potentially affected by the individual Program elements.

Individual Program elements implemented by one of or a combination of MOU Parties may require permits and authorizations from, or coordination with, numerous federal, state, and local agencies. The following is a list of the agencies that may have responsibility or jurisdiction over the Program and the permits or authorizations that may apply to the individual Program elements:

- Local Agency Formation Commission (LAFCO) of San Benito County: approval of the HUA as a Wastewater Service Area for outside jurisdiction sewer service.
- U.S. Army Corps of Engineers (USACE): permitting under Section 404 of the Clean Water Act;
- U.S. Fish and Wildlife Service (USFWS): federal Endangered Species Act (ESA) consultation and incidental take authorization;
- National Marine Fisheries Service (NMFS): Magnuson Stevens Act Essential Fish Habitat and ESA consultation and incidental take authorization;
- U.S. Department of the Interior, Bureau of Reclamation (Reclamation): CVP water transfers and conveyance of nonproject water;

- U.S. Environmental Protection Agency (EPA): primary regulatory agency responsible for pollution control. air pollution, water pollution, solid and hazardous waste disposal, pesticides and toxic substances; providing oversight of states that have assumed responsibility for federal environmental programs; and enforcing environmental laws;

- California Regional Water Quality Control Board (RWQCB), Central Coast Region (Region 3): National Pollutant Discharge Elimination System (NPDES) permitting pursuant to Clean Water Act Section 402, Clean Water Act Section 401 water quality certification when permitting under Section 404 of the Clean Water Act is required, and California Code of Regulations Title 23 Division 3 Chapter 9 regulations for waste discharge;

- DFG: compliance with the California Endangered Species Act (CESA) and Fish and Game Code Section 1602 (Streambed Alteration Agreement);

- California State Office of Historic Preservation: National Historic Preservation Act Section 106 compliance for projects with federal involvement;

- California Department of Public Health: Title California Code of Regulations Title 17 regulations for drinking water and Title 22 regulations for recycled water;

- Monterey Bay Unified Air Pollution Control District (MBUAPCD): review of effects on air quality and permit to construct/permit to operate;

- City of Hollister: construction authorizations/encroachment permits; and

- San Benito County: construction authorizations/encroachment permits.

1.6 PUBLIC PARTICIPATION AND THE CEQA PROCESS

~~On June 22, 2010, SBCWD issued a notice of preparation (NOP) of a draft PEIR and filed the NOP with the State Clearinghouse. The 30-day public comment period on the NOP ended on July 22, 2010. A scoping meeting was held in Hollister on July 15, 2010, to solicit input on the scope of the draft PEIR from interested agencies, individuals, and organizations. The NOP and copies of the scoping comments provided to SBCWD during the scoping period are included in Appendix A.~~

~~In accordance with CEQA review requirements, this draft PEIR is being distributed for public and agency review and comment for a 45-day period, which ends on November 17, 2010. This distribution ensures that interested parties have an opportunity to express their views regarding the significant environmental effects of the project and ensures that information pertinent to permits and approvals is provided to the decision makers for SBCWD and the CEQA responsible agencies. This document is available for review by the public during normal business hours at the SBCWD office at 30 Mansfield Road, Hollister, California 95024 and online at www.sbcwd.com.~~

~~A public meeting will be held during the comment period to receive input from agencies and the public on the draft PEIR. The meeting will be held on October 21, 2010 at 6:00 p.m. at the Veteran's Memorial Building, Room 218, 640 San Benito Street, Hollister, California. In addition, written comments from the public, reviewing agencies, and stakeholders will be accepted throughout the 45-day public comment period. Comments must be received by SBCWD **by 5:00 p.m. on November 17, 2010**, at the following address, fax number, or e-mail address:~~

~~Attn: Jeff Cattaneo, District Manager~~
~~San Benito County Water District~~
~~30 Mansfield Road~~
~~Hollister, CA 95023~~

~~Fax number: (831) 637-8218~~
~~E-mail address: jcattaneo@sbcwd.com~~

~~If comments are provided via e-mail, *please include the project title in the subject line, attach comments in MS Word format, and include the commenter's U.S. Postal Service mailing address.*~~

~~Following consideration of these comments, SBCWD will prepare written responses to comments on environmental issues, and prepare a final PEIR that will describe the disposition of any significant environmental issues raised in the comments on the draft PEIR. Written responses must be provided to public agencies on comments made by those agencies at least 10 days before the PEIR can be certified. Following this 10-day period, SBCWD will consider certifying the final PEIR if it is determined to be in compliance with CEQA, and will rely on the certified final PEIR when considering approval of the proposed Program.~~

Throughout preparation of the Master Plan and Coordinated Plan and continuing through preparation of the PEIR, the lead agency and responsible parties have conducted a transparent and open process informing elected officials and the public with regular updates at Board and City Council meetings, mailing notices to interested parties, and hosting a booth at the County Fair. In addition to these ongoing updates, the PEIR preparation process included a 30-day scoping period from June 22, 2010 to July 22, 2010 and a 45-day public review period for the Draft PEIR from October 4, 2010 through November 17, 2010. One letter was received during the scoping period and one letter was received during the Draft PEIR review period. Both letters were from SWRCB and concern Program funding. No other comments from the public or agencies were received on the PEIR. Chapter 9, "Public Review and Comment," provides SBCWD's response to the comments received from SWRCB.

In accordance with the requirements of CEQA, if SBCWD decides to approve one or a combination of the proposed Program and alternatives analyzed in this PEIR, SBCWD would make written findings concerning each significant environmental effect identified in the PEIR that explains that project changes or alterations are required to avoid or substantially lessen the effect. Such changes or alterations are within the responsibility and jurisdiction of another public agency and have been adopted, or can and should be adopted, by such other agency or specific economic, legal, social, technological, or other considerations that render the mitigation measures or project alternatives identified in the final PEIR infeasible. In addition, if SBCWD decides to approve the proposed Program but determines that it would have significant and unavoidable environmental effects, it would adopt a "Statement of Overriding Considerations" that explains why the benefits of the proposed Program outweigh its significant effects on the environment, based on information in the PEIR and other information in the Program record.

At the time of Program approval, SBCWD must also adopt a mitigation monitoring and reporting program (MMRP) for those measures that it has adopted and incorporated into the Program to mitigate or avoid significant effects on the environment. The MMRP must be designed to ensure compliance during implementation of the Program. Following Program approval, a Notice of Determination documenting the decision is filed with the State Clearinghouse.

1.7 ~~DRAFT~~ PEIR ORGANIZATION

This ~~draft~~ PEIR is organized as follows:

- **Chapter 1, "Introduction,"** describes the purpose, context, and organization of the ~~draft~~ PEIR and the relevant conditions, circumstances, and history of water, wastewater, and recycled water planning and management.

- **Chapter 2, "Program Description,"** describes the range of the improvements that would be implemented with approval of the proposed Program.

- **Chapter 3, "Environmental Setting, Impacts, and Mitigation,"** describes, by environmental issue area, the existing environmental setting; broadly discusses the potential environmental impacts associated with the improvements described in Chapter 2, "Program Description"; and identifies feasible mitigation measures to avoid or substantially lessen significant or potentially significant environmental effects.

- **Chapter 4, "Cumulative Impacts,"** discusses the cumulative impacts that would result from the proposed Program in combination with past, current, and probable future projects that could affect the same resources and issue areas.

- **Chapter 5, "Program Alternatives,"** describes alternatives to the proposed Program and analyzes their significant and potentially significant environmental effects in comparison to the proposed Program.

- **Chapter 6, "Other CEQA-Required Sections,"** discusses the proposed Program's growth-inducing impacts, significant irreversible environmental changes, and significant and unavoidable impacts.

- **Chapter 7, "Report Preparers and Reviewers,"** identifies the preparers and reviewers of this ~~draft~~ PEIR.

- **Chapter 8, "References,"** contains a comprehensive listing of the sources of information used in the preparation of the PEIR, including agencies and individuals consulted.

- **Chapter 9, "Public Review and Comment,"** describes public involvement in program development, PEIR scoping, PEIR preparation, and PEIR request for comment and the response to the comments received.

- **Chapter 10, "Errata—Edits to the PEIR,"** shows the text changes made to the draft PEIR since it was published in October 2010.

This page intentionally left blank.

2 PROGRAM DESCRIPTION

2.1 PROGRAM OVERVIEW

The proposed Program consists of a number of individual elements or projects for water, wastewater, and recycled water as summarized in Table 2-1.

Table 2-1
Program Elements by Category

Water	Wastewater	Recycled Water
Purchases or Transfers of Imported Water Supplies	Ridgemark Wastewater Treatment Plant Upgrades	Phase 1 Recycled Water Facilities (completed)
North County Groundwater Bank	Expansion of City of Hollister Water Reclamation Facility	Phase 2a and Phase 2b Recycled Water Facilities
New Urban Wells	Cielo Vista Estates Connection to City of Hollister Water Reclamation Facility	Ridgemark Recycled Water Facilities
Lessalt Water Treatment Plant Upgrades		
New Surface Water Treatment Plant		
Demineralization of Urban Wells (Phases 1 and 2)		
New Pipeline to Ridgemark		
New Treated Water Storage		

Note: Non-structural solutions (water conservation, salinity education, softener ordinance, new development connections to the city sewer, and other measures) is also a Program element considered in this PEIR, but it is not shown in Table 2-1 because it fits under all categories.
Source: Data compiled by AECOM in 2010

The proposed Program would be implemented in three phases: near-term (2015), intermediate (2023), and long-term (buildout). Figure 2-1 shows the timing of the phases and the Program elements that would occur in each phase. This PEIR evaluates only Phase 1 (near-term) and Phase 2 (intermediate-term) actions, which would be implemented through 2023. The third phase, beyond 2023, is not included in this PEIR because it is not defined at this time and would be too speculative for a meaningful analysis. The need and configuration of Phase 3 actions are also partially dependent on the results from implementing Phases 1 and 2. Phase 3 projects could include demineralization of additional urban wells, increased treated water storage capacity, expansion of the City of Hollister's (City's) Water Reclamation Facility (WRF), continued expansion of recycled water facilities, and long-term water supply development.

Some initial elements of the proposed Program are already being implemented and have obtained CEQA compliance under their own project-level CEQA documentation. Projects already constructed and operating at the time of publication of the notice of preparation (June 22, 2010) are described below and considered part of the existing conditions for this PEIR.

Notes: WRF = water reclamation facility; WWTP = wastewater treatment plant.

(a) Timeline shown includes planning, design and construction.

(b) Phase 1 Demineralization includes 3 million gallons per day (mgd) capacity; Phase 2 includes expansion to 5 mgd. Need for later phases will be determined based on demand and system optimization.

(c) Non-structural solutions include water conservation, salinity education, softener ordinance, and other measures.

(d) Potential environmental impacts from Phase 3 implementation will not be evaluated in the PEIR.

Source: MOU Parties 2008; adapted by AECOM in 2010

Implementation Phasing of Program Elements **Figure 2-1**

2.2 WATER

2.2.1 PURCHASES OR TRANSFERS OF IMPORTED WATER SUPPLIES

San Benito County Water District (SBCWD) has an existing contract for surface water imported from the Central Valley Project (CVP) through the San Luis Reservoir, the San Felipe Project, and the Hollister Conduit. In years when SBCWD receives its full municipal and industrial (M&I) contract allocation, sufficient supply exists to operate Lessalt Water Treatment Plant (WTP) up to 3 million gallons per day (mgd). However, SBCWD has not received its full contract amount in recent years and the reliability of the CVP supply is expected to decrease further over time, requiring supplemental supplies to increase the current level of reliability. Furthermore, as described below, a second new surface WTP is planned. That facility would require a new water supply source.

In response to an overcommitment of CVP supplies, droughts, and supply limitations imposed by environmental, regulatory, and legal constraints in the Sacramento–San Joaquin River Delta (Delta), the U.S. Bureau of Reclamation (Reclamation) has instituted its Shortage Policy in 3 of the past 6 years, as indicated in Table 2-2. The Shortage Policy provides that the allocation of M&I CVP water will be based on a contractor's historical use of CVP M&I water, as adjusted for growth, extraordinary conservation measures, and non-CVP water. Under the Shortage Policy, SBCWD's historical M&I usage is currently set at 4,026 acre-feet per year (afy) compared to its CVP M&I contract amount of 8,250 afy.

Table 2-2
Historical Annual Water Production at Lessalt Water Treatment Plant

Year	Annual Production (afy)	Annual Average Daily Production (mgd)	Annual CVP Allocation[(a)] (percentage)
2003	2,000	1.8	100
2004	2,330	2.1	95
2005	1,777	1.6	100
2006	1,300	1.2	100
2007	1,718	1.5	75
2008	1,323	1.2	75
Average	**1,741**	**1.6**	

Notes: afy = acre-feet per year; CVP = Central Valley Project; mgd = million gallons per day

[(a)] In years when the percentage is less than 100%, the allocation percentage is applied to the historical use. Under Reclamation's Shortage Policy, historical use is defined as the average quantity of CVP water put to beneficial use within the service area during the last 3 years of water deliveries, unconstrained by the availability of CVP water.

Source: MOU Parties 2010:Table 3-1, adapted by AECOM in 2010

In 2009, the third year of a drought, the M&I allocation was only 60% of historical use or 2,416 acre-feet (af). As a result, because over half of the SBCWD's M&I supply is committed to other entitlements; the water supply would be insufficient for the Lessalt WTP to operate at design capacity. The minimum M&I CVP allocation available for surface water treatment is estimated to be 1,320 afy, based on actual 2008 allocations. Therefore, it is estimated that up to approximately 5,400 afy of additional supply would be required to ensure that sufficient water supply would be available for the two surface WTPs (MOU Parties 2010:2-4).

One option for meeting the water supply shortfall would be to obtain additional imported water through purchases or transfers. Water transactions in California are classified as permanent sales of water rights or entitlements, long-term transfers, or temporary transfers (spot market lasting less than 1 year).

Permanent sales and long-term transfers are permanent or temporary reallocations of water from agricultural to urban or environmental uses. These reallocations are often accomplished by temporary or long-term land fallowing. Spot market transfers are negotiated and implemented within a single year. Water is delivered from willing water suppliers using State Water Project (SWP) and/or CVP facilities.

Out-of-basin groundwater banking is also used to facilitate transfers. Out-of-basin groundwater banking is accomplished in two ways, including in-lieu recharge and direct recharge. In-lieu recharge involves storing water by utilizing surface water in-lieu of pumping groundwater, thereby retaining or storing an equal amount in the groundwater basin. Direct recharge is accomplished by allowing water to percolate directly into the groundwater basin.

Each of these transfer actions would require environmental review, either under CEQA and/or the National Environmental Policy Act (NEPA), at the location and in the service area of the transfers.

FACILITIES

Purchased or transferred water would be delivered through existing facilities. No new facilities would be constructed with this Program element. Some transfers or purchases could result in non-CVP water being conveyed through the Hollister Conduit, a federally owned facility. Such transfers or purchases would require Reclamation to comply with NEPA, and a Warren Act Contract between Reclamation and SBCWD would be necessary to convey the water through federal facilities.

OPERATIONS

The amount needed and timing required for additional imported water is difficult to estimate and would change, depending on water year type, CVP allocation, availability of transfers/purchased water, and the coordinated operation of the North County Groundwater Bank. The amount needed could range from 0 afy (for example, in a wet year with existing CVP allocation at 100% and sufficient stream runoff and percolation to replenish previous diversions from the North County Groundwater Bank) to as much as 5,400 afy, based on SBCWD's estimated minimum historical M&I CVP allocation of 1,320 afy for supply to surface water treatment plants.

2.2.2 NORTH COUNTY GROUNDWATER BANK

Development of the North County Groundwater Bank is a Program element intended to help increase long-term water supply and supply reliability in the Hollister Urban Area (HUA). The goal related to the North County Groundwater Bank would be to manage surface and groundwater resources for beneficial use consistent with the Groundwater Management Plan for the San Benito County portion of the Gilroy-Hollister Valley Subbasin, the Hollister Urban Area Water and Wastewater Master Plan (Master Plan), and the Coordinated Water Supply and Treatment Plan (Coordinated Plan).

To achieve this goal, this Program element would be implemented based on the following objectives:

- **Reduce the occurrence of high groundwater levels.** High groundwater is causing unfavorable conditions to residents and growers as a result of ponding water, distressed crops, septic system failures, the need to install mound septic systems, and damage to foundations and roads. High groundwater levels may also result in structural damage during seismic events due to soil liquefaction.

- **Improve management and use of high quality water from seasonal streams.** Currently, some seasonal flows from Arroyo Dos Picachos, Arroyo de las Viboras, and Pacheco Creek are percolated into the North County subbasin. However, many of the facilities used for this purpose are old, in poor condition, and not operated in a coordinated manner. Furthermore, the ability to percolate significant quantities of high quality

water is limited because of the presence of high groundwater. Therefore, much of this seasonal surface water supply is not captured and put to beneficial use.

- **Provide opportunities for percolation and storage of imported supplies when excess supplies are available.** Percolation of imported CVP water peaked in 1997 and was subsequently reduced in response to the successful recovery of the groundwater basin from overdraft. Release of CVP water for percolation has been discontinued to Pacheco Creek, Arroyo Dos Picachos, and Arroyo de las Viboras in recent years. However, with operation of the North County Groundwater Bank, excess CVP supplies or additional imported water could be stored and managed.

- **Provide additional supply of high quality water to meet the needs of the HUA.** The Coordinated Plan presents a process to provide improved drinking water and recycled water quality in a cost-effective manner. This would be based on using high quality groundwater from the proposed North County Groundwater Bank, supplemented with additional imported surface water through the San Felipe Project. The North County Groundwater Bank would be required to implement this plan and optimize the use of groundwater and surface water supplies.

- **Provide opportunities for project-related environmental and other improvements.** Consistent with the SBCWD's mission, opportunities to manage and preserve the waters and environmental health of San Benito County might be identified as part of Program element development. Depending upon the proposed facilities and operational needs, various enhancements (for example, open space, recreation, and environmental restoration) might be integrated into this Program element, if practical and cost-effective.

FACILITIES

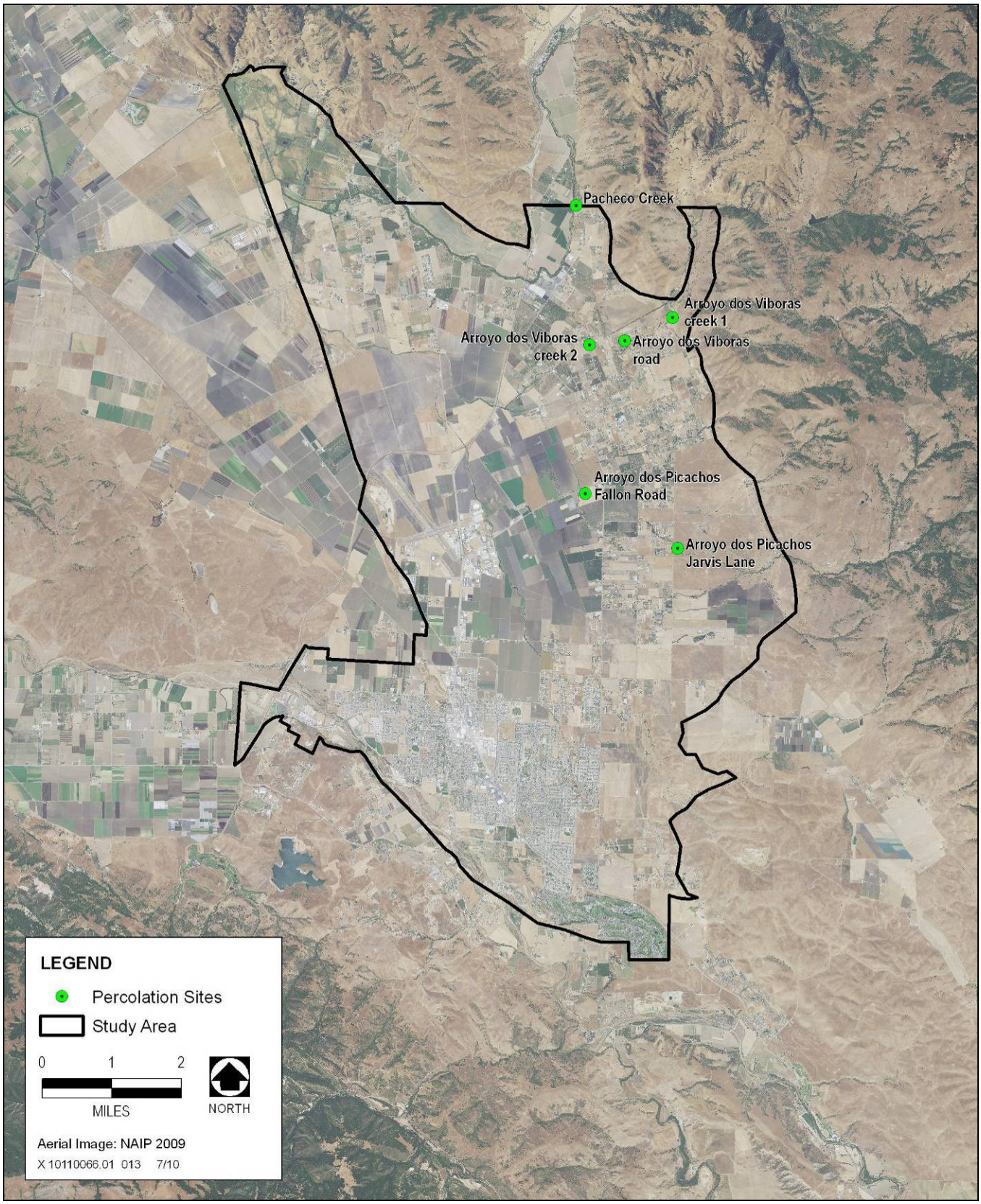
The North County Groundwater Bank would include a combination of facilities to pump and recharge water, plus a network of monitoring wells. Various well field configurations are currently being evaluated and additional data are being collected to validate aquifer conditions. Facilities to recharge water could include use of existing percolation sites (shown on Figure 2-2) and/or development of new sites.

Water pumped from the groundwater bank would be conveyed to and pumped into the Hollister Conduit for conveyance to the HUA. Therefore, this Program element would also include one or more pump stations and pipelines, depending on the final configuration of the facilities. Because the Hollister Conduit is a federally owned facility, its use for conveyance of non-CVP water to the HUA would require a Warren Act Contract with Reclamation, compliance with NEPA, and Section 7 consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service.

OPERATIONS

The North County Groundwater Bank could produce 4,000 to 6,000 afy of groundwater with a water quality target of less than 500 milligrams per liter (mg/L) total dissolved solids (TDS) and less than 120 mg/L hardness. Pumping would seek to lower the unconfined groundwater table to approximately 10 feet below ground surface, which would benefit areas currently being impaired by high groundwater. Figure 2-3 shows the approximate extent of the area experiencing high groundwater conditions. Operations of the bank would include:

- *Groundwater pumping*: A study by GEI Consultants (GEI) found a surplus of groundwater in the North Area and recommended pumping to lower groundwater levels in the North Area and potentially improve water quality (GEI 2009). Additional studies are being initiated to verify the recommendations in this 2009 report and better understand aquifer conditions.



Source: GEI June 1, 2010

Existing Percolation Sites in Vicinity of Proposed North County Groundwater Bank **Figure 2-2**

Source: GEI June 1, 2010

Location of Target High Groundwater Reduction

Figure 2-3

- *Artificial direct percolation of imported and/or local surface water*: Groundwater recharge occurs locally in the subbasin as a result of rainfall, stream runoff, managed releases, and deep percolation of agricultural applied water percolating into the soils. Artificial recharge would involve percolation of water in highly permeable river or drainage channels for storage in the subbasin. In the past, SBCWD has managed groundwater levels by recharging with imported CVP water through existing percolation sites on Arroya de las Viboras, Arroyo Dos Picachos, and Pacheco Creek as shown in Figure 2-2. This Program element could use or rehabilitate existing percolation facilities or possibly construct new ones.

2.2.3 NEW URBAN WELLS

Both the City and Sunnyslope County Water District (SSCWD) use groundwater wells for M&I supply. Based on demand projections, additional supply capacity would be needed toward the end of Phase 2. This additional capacity could be provided by drilling one or more new wells in the HUA. The location of new urban wells would be based upon the results of additional modeling, site selection, final operational plans, and the actual rate of growth in water demand.

FACILITIES

One or more wells would be drilled at locations to be determined in the future. Based on existing urban well capacity (approximately 15 mgd) and the projected 2023 demands (approximately 22 mgd for maximum daily demand), at least two new wells would be required by 2023 to meet the maximum daily demand in the event that the largest water source (well or WTP) was out of service. SSCWD is currently developing an urban well (Water Well #12) south of the City of Hollister in unincorporated San Benito County that will serve future customers and act as additional emergency capacity for existing customers. An Initial Study and Mitigated Negative Declaration was prepared in July 2010 for this well.

OPERATIONS

New urban wells would be used to meet water demands as growth occurs in the HUA. With the Lessalt WTP and a new surface WTP in operation, urban wells would be used primarily to meet peak demands, particularly during the warmer months when water demands are higher.

2.2.4 LESSALT WATER TREATMENT PLANT UPGRADES

The existing Lessalt WTP is jointly owned by SSCWD and the City, and operated by SSCWD. The construction and operation of the Lessalt WTP received environmental review in an Initial Study/Mitigated Negative Declaration prepared by the City in June 2000. The Lessalt WTP was designed, permitted, and constructed with a capacity of 3 mgd; however, the plant has not realized this capacity because of hydraulic constraints between the water supply and distribution systems. The previous CEQA documentation was certified at a project capacity of 3 mgd.

To maximize use of the Lessalt WTP in the near- and long-term up to its original 3 mgd capacity, the upgrades would include the construction of hydraulic and process modifications. Water treatment process improvements would be implemented to meet EPA's Stage 2 Disinfectants and Disinfection Byproducts (D/DBP) Rule that goes into effect on October 1, 2013. Treatment improvements could include combinations of oxidation, coagulation, filtration, disinfection, or other processes as appropriate, based on water quality, reliability, and cost.

FACILITIES

The Lessalt WTP Upgrades would consist of the installation of new pumps and motors, and the connection of the new pumps and motors to the existing potable water distribution system. The proposed hydraulic modifications would comply with CEQA Guidelines Sections 15301 and 15302, and would not result in any significant impacts.

Therefore, the hydraulic modifications would be categorically exempt from CEQA. A categorical exemption was filed for the hydraulic modifications on March 12, 2010.

Treatment process modifications are currently being evaluated. Upgrades would occur at the existing Lessalt WTP site and would also be categorically exempt from CEQA.

OPERATIONS

The Lessalt WTP was originally designed and approved to produce 3 mgd (or 3,360 afy) of treated water. Because of hydraulic problems at the plant, it has only operated at an average of 1.6 mgd. Completion of the improvements to address the hydraulic and process requirements would allow the Lessalt WTP to treat up to 3 mgd. The final capacity recommended for the Lessalt WTP will be determined based on water distribution system modeling and overall cost comparisons including the new WTP.

2.2.5 NEW SURFACE WATER TREATMENT PLANT

The Coordinated Plan indicated that sufficient water supply could be available from the proposed North County Groundwater Bank to both firm up the supply to the Lessalt WTP and provide enough water to serve a second, new WTP. The new WTP would be located to provide high quality water supply to the western area of the City, an area that currently receives groundwater with high salinity. Siting and capacity of the new WTP would be based on the results of facilities planning studies as described in the previous section for the Lessalt WTP.

FACILITIES

The second surface WTP site would occupy approximately 5 to 10 acres. The three general areas being considered for facility siting are shown in Figure 2-4.

OPERATIONS

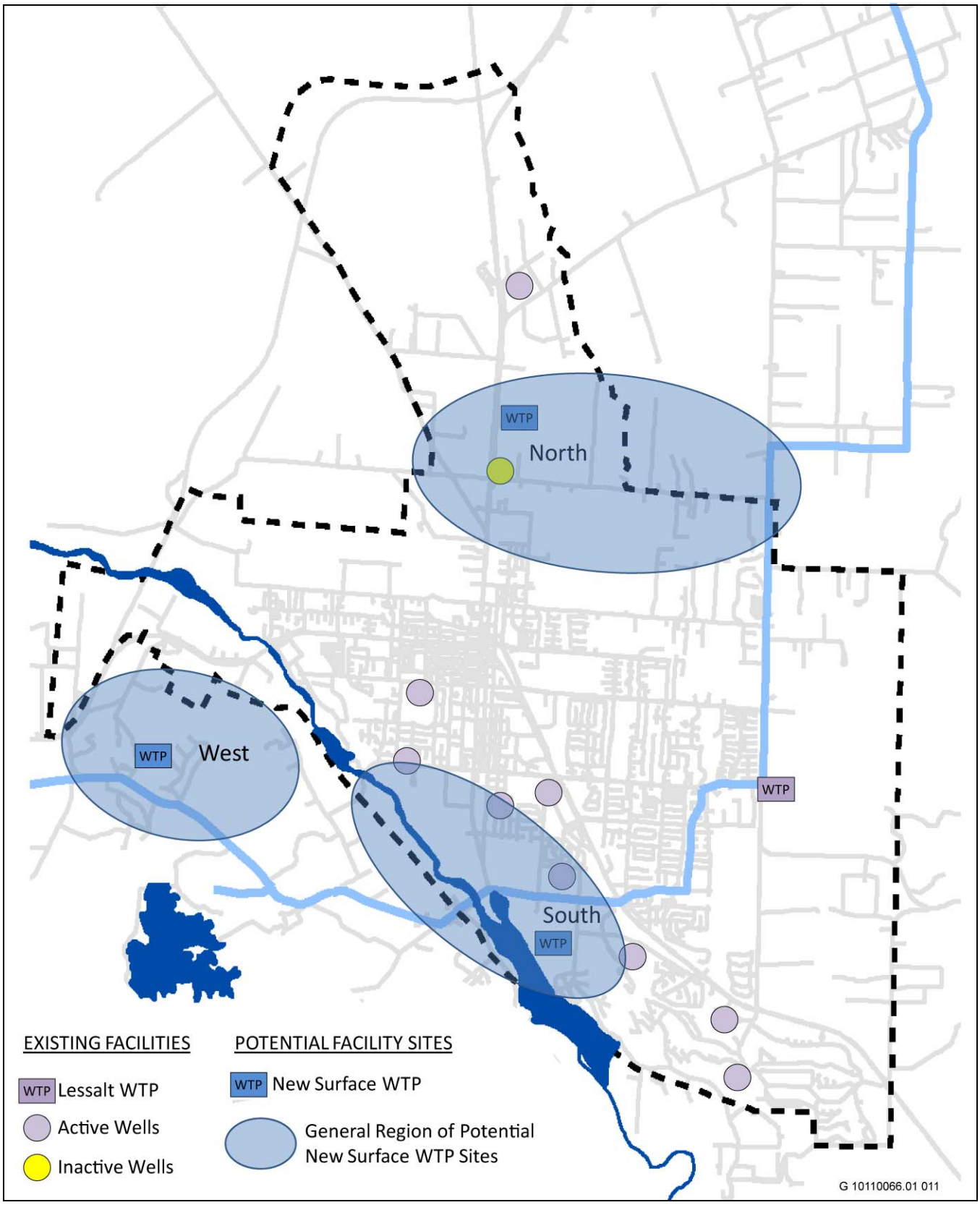
A total of approximately 6 mgd of surface water treatment capacity is proposed before 2015. This capacity would be divided between the Lessalt WTP and the new WTP to optimize the supply of high quality water in the distribution system while reducing total Program costs. Therefore, the capacity of the new plant is expected to be approximately 3 mgd.. The new WTP would have minimal staffing requirements, comparable to that currently provided at the Lessalt WTP.

2.2.6 DEMINERALIZATION OF URBAN WELLS

The recommended groundwater treatment in the Master Plan is phased implementation of demineralization using reverse osmosis (R/O). The goals of the demineralization Program element would be to:

- improve drinking water quality from local groundwater supply and in turn improve recycled water quality to the extent that it would be suitable for agricultural use,
- use local water resources to improve supply reliability,
- provide consistently higher water quality throughout the HUA water distribution system, and
- remove salts from the groundwater basin.

Phased implementation of demineralization facilities was proposed to minimize initial capital costs, evaluate the effectiveness of blending, and take advantage of improving technology and potential future lower cost of membranes. The recommended time phasing of groundwater demineralization was updated in the Coordinated



Source: HDR 2010

Potential Water Treatment Plant Locations **Figure 2-4**

Plan to reflect the addition of a second surface WTP and was based upon maintaining recycled water quality at approximately 700 mg/L TDS. The phasing would result in 3 mgd of demineralization capacity by 2015, and an additional 2 mgd by 2019, for a total of 5 mgd through 2023. This schedule represents the earliest implementation of phased demineralization of urban wells. The schedule for implementation of demineralization may be delayed based upon the water quality benefits of a second surface WTP, actual growth in water demands, and the market demand for use of recycled water.

FACILITIES

Several potential wells and well combinations are being considered for demineralization. These combinations include both existing and new wells. Work is currently underway to evaluate whether the demineralization facilities should include wellhead treatment (i.e., placing an R/O unit at each of the designated wells) or centralized treatment. For wellhead treatment, a portion of the water would be treated and then blended with source water to achieve approximately 300 mg/L TDS, prior to entering the distribution system. For the centralized treatment option, water from multiple wells would be conveyed to a central location for treatment and subsequent transmission to the distribution system.

In addition to groundwater treatment, brine treatment and disposal facilities would also be required to treat the concentrate waste stream created by the R/O process. Several options, including evaporation ponds, chemical precipitation, deep well injection, ocean discharge, brackish wetlands, and greenbelt habitat disposal, are being considered. The method and location of brine disposal would be evaluated as part of facilities planning and predesign.

OPERATIONS

The demineralization facilities would be operated during the warmer, high demand months (typically May through October) to maintain high quality, low TDS water in the drinking water distribution system, which would result in low salinity recycled water. The brine stream that would be generated by the demineralization process is estimated to be 7-20% of the volume to be treated. The amount of water to be treated and the brine generated would vary from year to year, depending on demands, source water quality, and other factors. Based on the current understanding of potential demineralization operations, the annual volume of brine generated could be on the order of 80 to 225 af.

Demineralization is an energy intensive process and renewable energy has been identified as a possible enhancement for the demineralization project. In particular, solar power is being evaluated as an option. It is most efficient on hot summer days, which coincides with peak demands for both water and power, and it can be installed in modular phases to coincide with demineralization capacity development.

Brine disposal would include concentration of the brine stream and disposal. Concentration options being evaluated include evaporation ponds and advanced techniques such as chemical precipitation. Evaporation ponds require less energy and manpower to operate and maintain than advanced concentration techniques, but can require large amounts of land and be an attractant for wildlife, including protected species.

Another concentration option being evaluated is development of brackish wetlands. Using constructed wetlands and greenbelt habitat, brine could be concentrated in a series of ponds and plant habitats of increasing salinity. The wetlands and greenbelt habitat could be constructed along the San Benito River and integrated with the River Parkway Project being developed by San Benito County.

Once concentrated, possible brine disposal alternatives could include:

- Landfill—Salt classified as a nonhazardous waste could be disposed at a Class III landfill. A Class III landfill has at least a portion of the landfill lined to protect groundwater quality. Three suitable landfills exist in the area.

- Deep Well Injection—Injection wells could be used to place brine into a nonbeneficial geologic formation that would have no potential to allow migration of contaminants into potential potable water aquifers. A typical injection well consists of concentric pipes that extend several thousand feet down from the surface level into highly saline, permeable injection zones that are confined vertically by impermeable strata. Based on a preliminary review of historical gas and oil well data in San Benito County, deep well injection could be a viable disposal alternative. A Deep Injection Well Feasibility Study identified potential injections zones in the region between 1,500 to 4,500 feet below ground surface (MOU Parties 2010:4-7). Additional studies would be needed to confirm the feasibility of this disposal option.

- Ocean Discharge—Salt disposal at an ocean discharge requires a transmission pipeline or hauling from the water treatment facility to an ocean outfall. A pipeline to the ocean is not considered viable because of costs for implementation and jurisdictional challenges. Trucking of brine directly from a demineralization plant without going through a concentration step might not be a practical option. However, in combination with a brine-concentration facility, trucking of brine to the City of Watsonville's ocean outfall or other outfall location could be viable.

2.2.7 NEW PIPELINE TO RIDGEMARK

Currently, the Ridgemark area receives groundwater for its water supply. Because of the poor water quality, specifically the high salinity, SSCWD's Ridgemark Wastewater Treatment Plant (WWTP) is unable to meet the water quality standards in its discharge permit. The objective of this Program element would be to provide high quality water from the Lessalt WTP to the Ridgemark service area to assist SSCWD with meeting its waste discharge requirements (WDR). The salinity requirements for the Ridgemark WWTP (WDR Order R3-2004-0065) are 1,200 mg/L TDS and 200 mg/L each for sodium and chloride. To accomplish this objective, this Program element would need to be combined with enforcement of the water softener ordinance (see non-structural solutions description below).

FACILITIES

A new buried pipeline, approximately 4,000 feet in length, would be installed from the Lessalt WTP south along Fairview Road to provide treated water to the Ridgemark service area. The pipeline would be sized to convey approximately 0.75 mgd of treated water to the Ridgemark service area. Because the proposed pipeline would be less than 1 mile long and would be installed in an existing public right-of-way, it would be statutorily exempt from CEQA (Section 15282[k]). A Notice of Exemption for this project was filed on March 12, 2010.

OPERATIONS

To meet the WDR requirements for the WWTP, water from the Lessalt WTP would be pumped to the Ridgemark service area to meet average daily demands. Existing groundwater wells would be used to meet peak demands in the service area. This Program element would need to be combined with enforcement of the water softener ordinance to meet water quality objectives (see non-structural solutions description below).

2.2.8 NEW TREATED WATER STORAGE

To satisfy the need for new treated water storage throughout the distribution system, approximately 11 million gallons of new storage would be constructed through 2023. The treated water storage would be provided by new storage tanks that have not yet been sited or sized. The final location of new storage would be dependent on the availability of appropriate land at the required elevation, land use and zoning, the availability of access to larger diameter piping, and other factors.

FACILITIES

There would be multiple new treated water storage tanks constructed as part of this Program element. Approximately 11 million gallons of new storage would be needed, resulting in four to six new tanks. These would be built in phases as additional storage is needed. Similar to the existing tanks in the HUA, the new facilities would be cylindrical steel tanks, likely in the range of 2 to 3 million gallons per tank, and approximately 35 to 45 feet tall. Siting would be based on required elevations for the tanks, based on the pressure zone for which they would serve. The required elevation of the top of the tanks in the low zone would be 420 feet, in the middle zone 550 feet, and in the high zone 660 feet.

OPERATIONS

Operation of the treated water storage tanks would be coordinated as part of the overall water distribution system.

2.3 WASTEWATER

2.3.1 RIDGEMARK WWTP UPGRADES

SSCWD would upgrade and consolidate the two existing Ridgemark wastewater treatment facilities as part of this Program element. For the proposed Ridgemark WWTP upgrade, initial disposal would be by percolation. Future disposal would be by use of recycled water at the Ridgemark Golf Course. SSCWD has prepared and certified an EIR for this Program element, called the Ridgemark Wastewater Treatment and Recycled Water Improvements Project. SSCWD certified the project (State Clearinghouse Number 2008071031) in July 2009.

The upgrades are intended to improve effluent water quality in response to more stringent requirements issued by the RWQCB (WDR Order R3-2004-0065) for ammonia, nitrates, biological oxygen demand (BOD), total suspended solids (TSS), and pH. This Program element, in combination with the New Pipeline to Ridgemark Program element described above, would also reduce salinity in the wastewater effluent, consistent with the WDR's salinity requirements, and ultimately would allow SSCWD to deliver recycled water for irrigation purposes.

2.3.2 EXPANSION OF CITY WATER RECLAMATION FACILITY

The City's WRF[1], recently completed in 2009, has a capacity of 4 mgd. The WRF would require a 1 mgd expansion between 2018 and 2023, depending on the growth rate in the HUA.

Treated wastewater effluent is now being disposed using a combination of continued percolation at the existing WRF and industrial water treatment plant disposal ponds. In addition, the City has constructed a seasonal storage reservoir that facilitates percolation, a sprayfield disposal site at the Hollister Municipal Airport, and conveyance that provide irrigation water to the City's Riverside Park. The Phase 1 Recycled Water Facilities Program element would continue through 2015, when the salinity of the recycled water would be decreased to a level suitable for agricultural irrigation. When demands for recycled water increase, the storage reservoir would be lined to retain recycled water supplies and limit percolation.

FACILITIES

The expansion of the WRF would occur within the existing footprint of the existing facility.

OPERATIONS

The treatment capacity for the facility would be increased from 4 to 5 mgd.

[1] Note that in previous documents effluent from the City WRF has been referred to as both "reclaimed water" and "recycled water." The term "recycled water" will be used to refer to the WRF's effluent throughout this PEIR.

2.3.3 CIELO VISTA WWTP CONNECTION TO CITY WRF

Cielo Vista Estates WWTP currently meets RWQCB discharge requirements. Therefore, no improvements are necessary at this time for the collection, treatment, or disposal components. However, Cielo Vista Estates WWTP's current WDR permit was adopted in 1987. In the next WDR permit cycle, it is likely that the WWTP will be subject to discharge requirements similar to Ridgemark WWTP's requirements for BOD, TSS, ammonia, nitrate, and salinity. Similar to the Ridgemark WWTP, the Cielo Vista Estates WWTP will likely have the option of connecting to the City's system or constructing a new facility. Given the volume of flow from the Cielo Vista Estates WWTP relative to the capacity of the City WRF, conveyance of raw wastewater from the WWTP could be accommodated by the WRF.

FACILITIES

Facilities associated with this Program element would be conveyance facilities from Cielo Vista Estates WWTP to the City's wastewater collection system for conveyance to the City WRF.

OPERATIONS

This Program element would become part of the existing operations of the City WRF.

2.4 RECYCLED WATER

The MOU identifies 2015 as the target date for providing high quality (i.e., low salinity) recycled water for agricultural use. The period before 2015 is referred to as the Phase 1 for recycled water facilities. After 2015, the salinity content of the recycled water would be reduced to levels acceptable for agricultural use; this period is referred to as the Phase 2.

The MOU establishes a recycled water TDS target of 500 mg/L and not to exceed 700 mg/L. Blending recycled water with imported CVP water is identified as an interim measure for meeting the recycled water objectives. The required water quality improvements would be achieved by implementing the new surface WTP and groundwater demineralization Program elements recommended in the Master Plan and Coordinated Plan.

2.4.1 PHASE 1 RECYCLED WATER FACILITIES (COMPLETED)

Five sites for potential use of Phase 1 recycled water were considered, including the Hollister Municipal Airport, Brookhollow Ranch, Pacific Sod Farm, San Juan Oaks Golf Club, and the now completed Riverside Park. These sites were evaluated in the Hollister Reclaimed Water Project Supplemental EIR. In early 2008, the City, SBCWD, and San Benito County elected to implement the Phase 1 recycled water facilities at the Riverside Park and the Hollister Municipal Airport. The irrigable area at Riverside Park is approximately 45 acres of turf, with an annual disposal capacity of 138 afy. The irrigable area at the Hollister Municipal Airport site is approximately 247 acres, with an annual disposal capacity of 803 afy. Together, these two sites coupled with existing percolation capacity at the WRF and IWTP will provide sufficient disposal capacity through 2015. Construction of these facilities was completed in 2009.

2.4.2 PHASE 2 RECYCLED WATER FACILITIES

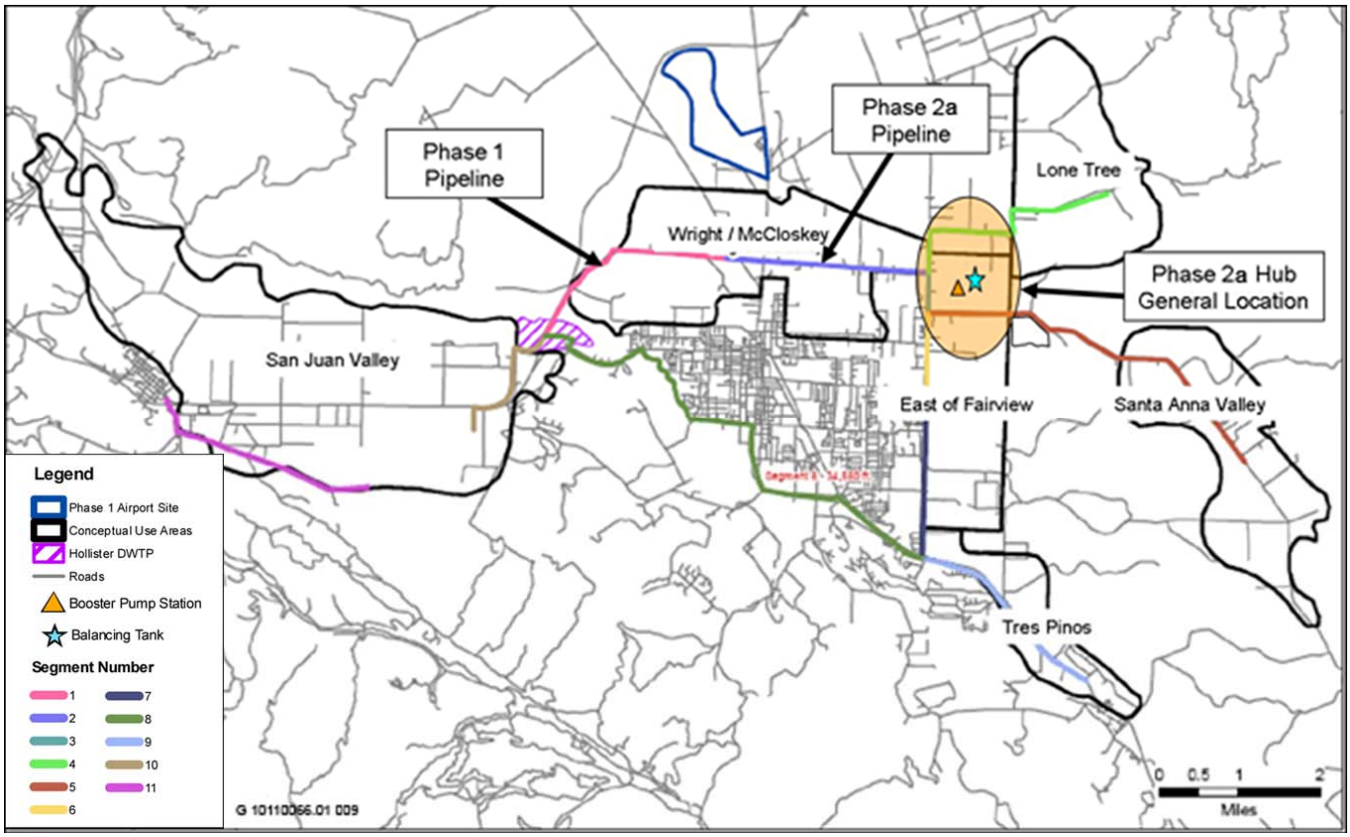
Phase 2 for recycled water facilities (for disposal from 2015 to 2023 and beyond) includes the addition of a recycled water transmission system to provide a high quality water supply for primarily agricultural uses. However, service to other customers in the region including urban uses such as park and golf course irrigation may also be provided. This second phase is contingent on recycled water salinity levels being reduced to meet crop and landscaping water quality requirements.

The Phase 1 transmission pipeline from the WRF to the Hollister Municipal Airport was constructed with sufficient capacity to also serve Phase 2. For Phase 2a, the Phase 1 transmission pipeline would be extended from the intersection of Wright Road and Briggs Road, east along McCloskey Road to Fairview Road, approximately 2.5 miles. This would allow recycled water to be distributed to agricultural users in the Wright Road/McCloskey Road corridor (Wright/McCloskey corridor).

As development in the Wright/McCloskey corridor occurs and recycled water production exceeds irrigation demands within this area, Phase 2b would be implemented.

FACILITIES

Facilities associated with Phase 2a would include a recycled water conveyance pipeline that would extend the constructed Phase 1 buried pipeline from the intersection of Wright Road and Briggs Road, east along McCloskey Road to Fairview Road, subject to the completion of a market assessment and facilities planning. The Phase 2a facilities would provide opportunities for future, Phase 2b, use in the Lone Tree area, Santa Ana Valley, East of Fairview Road, San Juan Valley, or other areas. The Phase 2a facilities and potential Phase 2b sites are illustrated in Figure 2-5.



Source: San Benito County Water District 2008

Phase 2 Recycled Water Facilities **Figure 2-5**

OPERATIONS

Once the recycled water quality meets agricultural water quality objectives, it is expected that recycled water availability would increase from approximately 1,000 afy in 2015 to as much as 4,200 afy by 2023.

2.4.3 RIDGEMARK RECYCLED WATER

Similar to the City's WRF, SSCWD's upgraded Ridgemark WWTP would be capable of producing high quality effluent that would meet the requirements for "Disinfected Tertiary Recycled Water" as defined by the State of California Title 22 water regulations. The SSCWD recycled water facilities would provide recycled water to the Ridgemark Golf Course for irrigation. Because the recycled water is expected to have a relatively high salt content, the Ridgemark Recycled Water Project Program element would include blending using either groundwater or CVP supply with current golf course irrigation water. This Program element has also been evaluated in the *Ridgemark Wastewater Treatment and Recycled Water Improvements Project EIR* (SSCWD 2009).

FACILITIES

Facilities would include installation of filtration and disinfection facilities at the Ridgemark WWTP, a pump station, and conveyance pipeline from the Ridgemark WWTP to the Ridgemark Golf Course.

OPERATION

The recycled water facility would deliver between 158 and 261 afy to the golf course, depending on the supply with which it is blended.

2.5 NON-STRUCTURAL SOLUTIONS

Program non-structural solutions include water conservation, salinity education, a water softener ordinance, and a new ordinance requiring dual distribution systems in new developments. These are ongoing activities being implemented by the MOU Parties in coordination with the Water Resources Association of San Benito County WRA), and are intended to provide reductions in water demand, reduced salinity, and opportunities for the use of recycled water.

The MOU Parties are committed to water conservation and have implemented a number of ongoing measures for residential, commercial, industrial, and institutional users and retail and wholesale water service providers. Water conservation measures include audits and surveys of users' attitudes and water usage habits, plumbing retrofits, replacement of old toilets with ultra low-flow toilets, system-wide audits and leak detection, conservation pricing, and installation of meters for users not yet metered. Public outreach is an important aspect of these water conservation measures. School education programs and public information programs are provided to heighten awareness among local young and adult citizens of water resources values and provide education on lifestyle habits and practices that will promote its efficient use.

In addition to ongoing water conservation efforts, the following are potential new policies or ordinances that might be implemented as part of the non-structural solutions Program element:

2.5.1 WATER SOFTENER ORDINANCE

Source control for wastewater quality for M&I users would primarily occur through implementation of a water softener ordinance. The Water Resources Association of San Benito County is completing a feasibility study to support issuance of an ordinance prohibiting the installation of brine discharging water softeners that discharge to the sewer systems of the HUA.

2.5.2 DUAL DISTRIBUTION SYSTEM REQUIREMENT

Section 2.2.9 of the MOU states that "within the Hollister Urban Area, dual water supplies and dual distribution systems shall be required for all new development and for new parks, cemeteries, and other large landscaped

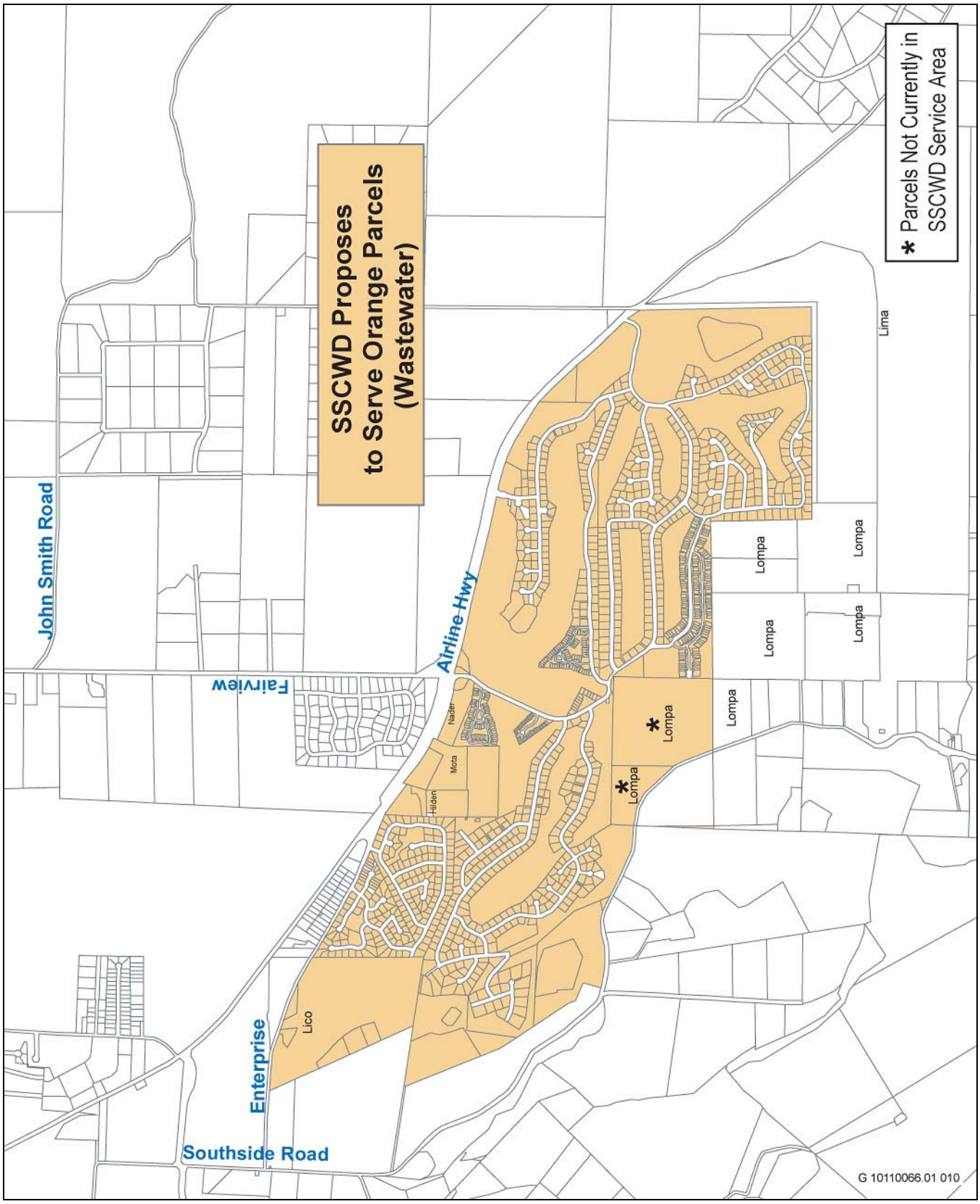
areas." Additional institutional work would be required to connect these new dual distribution systems to the recycled water supply and extend the system to existing uses in addition to the new conveyance infrastructure. The result of the use of dual distribution systems and separate water supplies would be to reduce the capacity requirements of new water treatment facilities.

2.5.3 NEW DEVELOPMENT CONNECTIONS TO THE CITY SEWER

Section 2.1.1 of the MOU states that the City's WRF "is the primary wastewater treatment plant for the Hollister Urban Area, including areas within the County that are designated to be served by that facility." Furthermore, Section 2.2.4 states that "within the Hollister Urban Area, all wastewater shall be treated at a central wastewater treatment plant… this provision shall not preclude satellite wastewater separation plants for the recovery of water for local recycling or the upgrading of the SSCWD Ridgemark Estates Wastewater Treatment Plants for local recycling." The principles of the MOU provide for the establishment of a regional wastewater treatment plant designed to maximize reuse of wastewater and avoid negative impacts to drinking water and adjoining land uses as necessary to assure a long-term sustainable supply of water quantity and quality for the general public health and welfare of future generations. Therefore, it is expected that new and existing developments within the HUA would connect to the City's wastewater collection system rather than construct or repair septic systems, with the exception of parcels that would connect to the SSCWD's Ridgemark wastewater collection system. Those parcels that would connect to Ridgemark are shown in Figure 2-6. The HUA boundary extends beyond the City's existingwastewater service area. Therefore, as part of this Program and consistent with Section 2.1.1 of the MOU, the City would request approval from LAFCO of a service area boundary change to provide outside jurisdiction wastewater service to unincorporated lands within the HUA. This service area boundary change would extend beyond the City's existing city limits and Sphere of Influence. Without this service area amendment, new development in the HUA outside the City's existing service area would utilize septic systems which can contaminate groundwater and are considered a risk to public health.

2.6 SUMMARY OF PROGRAM ELEMENT CONSTRUCTION

Most of the Program elements included in the proposed Program would involve construction of facilities. Purchases of Imported Water and non-structural solutions would not involve any construction. For many of the Program elements, the disturbance and duration of construction would be relatively minor, such as excavation for buried pipelines along existing roadways or construction of new wells with a small footprint of actual ground disturbance. Construction activities could occur during any time of the year, subject to environmental constraints, and the duration would depend on the particular Program element. Table 2-3 summarizes the Program elements that would include some ground-disturbing construction.



Source: Sunnyslope County Water District 2009, Adapted by AECOM in 2010.

SSCWD Wastewater Service Area **Figure 2-6**

Table 2-3 Program Element Construction Summary			
Program Element	Summary	Construction Duration	Program Phase
Lessalt Water Treatment Plant (WTP) Upgrades	Improvements at the existing Lessalt WTP site. Extent of construction would depend on treatment process chosen.	1 year	1
New Surface Water Treatment Plant	Construction of new WTP facility on 5 to 10 acres.	1.5 years	1
Phase 1 Demineralization of Urban Wells	Construction of demineralization facility(s) and brine disposal facility. Extent of construction would depend on whether one centralized facility or up to three smaller wellhead facilities were selected and the method and location of brine disposal.	1.5 years	1
New Pipeline to Ridgemark	Construction of new pipeline in the Fairview Road right-of-way.	6 months	1
Ridgemark Wastewater Treatment Plant (WWTP) Upgrades	Construction of new WWTP at existing Ridgemark I WWTP site and decommissioning of Ridgemark II WWTP.	2 years	1
Ridgemark Recycled Water	Construction of filtration and disinfection facilities at Ridgemark WWTP and a pump station and a new transmission pipeline from the upgraded Ridgemark WWTP to the Ridgemark Golf Course. Extent of construction would depend on chosen alignment(s).	1 year	1
Phase 2a Recycled Water Facilities	Extension of existing transmission pipeline in Wright Road eastward in Wright and McCloskey Roads from Briggs Road to the intersection of Fairview Road.	1 year	1
New Treated Water Storage	Construction of new steel storage tanks on 1 to 2 acres.	1 year each	1& 2
North County Groundwater Bank	Drilling of new wells and construction of pump station and transmission pipeline from wellfield to Hollister Conduit. Extent of construction would depend on number and location of wells, and alignment and length of transmission pipeline.	1.5 years	2
New Urban Wells	Drilling of new urban well(s) and construction of building enclosure.	6 months each	2
Phase 2 Demineralization of Urban Wells	Construction could include expansion of a Phase 1 centralized facility or new wellhead facilities. Phase 1 brine disposal would be expanded.	1 year	2
Expansion of City Water Reclamation Facility	Expansion of City Water Reclamation Facility within existing fenceline.	1 year	2
Cielo Vista WWTP Connection to City WRF	Construction of new sewer interceptor pipeline from Cielo Vista Estates to City collection system. Pipeline alignment would be in existing roadways and associated rights-of-way.	1 year	2
Phase 2b Recycled Water Facilities	Location of facilities and extent of construction are yet to be determined.		2

3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION

This chapter describes the general approach to the environmental analysis, relevant setting information, and the results of the analysis of direct and indirect environmental impacts of the proposed Program. Cumulative and growth-inducing impacts are discussed in Chapters 4 and 6, respectively.

APPROACH TO ENVIRONMENTAL ANALYSIS

INTRODUCTION

The State CEQA Guidelines require an EIR to include an evaluation of potentially significant effects on the physical environment associated with the proposed project and to identify feasible mitigation for those effects. All phases of a project, including planning, acquisition, development, and operation, are evaluated in the analysis. California Code of Regulations (CCR) Title 14, Section 15126.2 (14 CCR Section 15126.2) states that:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, and human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

An EIR must also discuss inconsistencies between the proposed project and applicable general plans and regional plans (14 CCR Section 15125[d]). And, according to 14 CCR Section 15126.4, an EIR must describe potentially feasible measures that could avoid or minimize significant adverse impacts (CCR Section 15126.4[a][1]) and feasible and practicable measures that are fully enforceable through permit conditions, agreements, or other legally binding process (CCR Section 15126.4[a][2]). Mitigation measures are not required for effects that are found to be less than significant.

Chapter 3 of this PEIR addresses the environmental setting, impacts, and mitigation measures for each environmental resource area. The following discussion explains the organization and general assumptions used in the environmental analysis. The reader is referred to the individual technical sections regarding specific assumptions, methodology, and significance criteria (thresholds of significance) used in the analysis and determination of significance of impacts. Sections 3.1 through 3.14 of this PEIR also identify residual significant impacts (i.e., impacts that would be significant and unavoidable despite the inclusion of feasible mitigation measures). Issues evaluated in these sections consist of a full range of environmental topics originally identified for review in the notice of preparation (NOP) prepared under CEQA requirements for the proposed Program. The NOP is presented in Appendix A-1.

STUDY AREA

As discussed in Chapter 1, “Introduction,” the PEIR study area includes the Hollister Urban Area (HUA) plus an area of unincorporated County lands that extends north from the northern boundary of the City’s sphere of influence to the San Benito County (County) line. The HUA includes the incorporated City of Hollister (City) and

unincorporated County lands that are in the City's sphere of influence. While most of the proposed Program elements would be located in the HUA, the PEIR study area was expanded beyond the HUA to include areas within groundwater subbasins that could potentially be affected by elements of the proposed Program.

Information regarding the study area was obtained from a variety of sources including published environmental and planning documents, books, Web sites, journal articles, field surveys, and communications with technical experts. The environmental setting description in each section is tailored to the resource area and the types of impacts that may occur.

DEFINITION OF TERMS

ENVIRONMENTAL SETTING

The "Environmental Setting" describes the existing physical conditions in the study area at the time that the NOP was published (June 22, 2010). This section is consistent with the State CEQA Guidelines, as amended (14 CCR Section 15125).

REGULATORY CONTEXT

The "Regulatory Context" identifies the formally adopted plans, policies, regulations, laws, and ordinances that are relevant to the resource area. The MOU Parties could apply to federal agencies to receive grant funds for the implementation of some of the Program elements, and some future projects could require permits from a federal agency. These Program elements could be subject to several federal laws and regulations, including but not limited to the National Environmental Policy Act, the Clean Water Act, the federal Endangered Species Act, and the National Historic Preservation Act. Therefore, applicable federal laws and regulations are described in addition to state and regional and local requirements. According to the State CEQA Guidelines, as amended (CCR Section 15125[d]), an "EIR shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans." Although this PEIR evaluates inconsistencies with applicable adopted plans and policies, the final authority for interpreting policy statements and determining the proposed Program's consistency with adopted policies rests with the governing body of the jurisdiction in question, either the City Council or the Board of Supervisors. This would also apply to each proposed Program element.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The "Environmental Impacts and Mitigation Measures" section identifies the impacts of the proposed Program on the existing human and natural environment, in accordance with the State CEQA Guidelines, as amended (CCR Sections 15125 and 15143). The following discussions are included in this subsection.

- **Analysis Methodology** describes the methods, process, procedures, and/or assumptions used to formulate and conduct the impact analysis.

- **Thresholds of Significance** provide criteria established by the lead agencies to define at what level an impact would be considered significant in accordance with CEQA. Thresholds may be quantitative or qualitative; they may be based on examples found in CEQA regulations or the State CEQA Guidelines; scientific and factual data relative to the lead agency's jurisdiction; legislative or regulatory performance standards of federal, state, regional, or local agencies relevant to the impact analysis; County or City goals, objectives, and policies (e.g., County or City general plans); views of the public in the affected area; the policy/regulatory environment of affected jurisdictions; or other factors. Generally, however, the thresholds of significance used are derived from Appendix G of the State CEQA Guidelines; factual or scientific information and data; and regulatory standards of federal, state, regional, and local agencies.

Impact Analysis and Mitigation provides an assessment of the potential impacts of the proposed Program on the existing environment, including mitigation measures as necessary. This assessment also specifies why impacts are found to be significant and unavoidable, significant or potentially significant, or less than significant, or why there is no environmental impact. The level of impact of the proposed project is determined by comparing estimated effects with baseline conditions. In accordance with CEQA, the environmental setting as it exists at the time the NOP is published represents baseline physical conditions in this PEIR. Impacts are defined as follows:

- **No impact** indicates that the construction, operation, and maintenance of the proposed Program, including specific Program elements, would not have any direct or indirect effects on the environment. It means no change from existing conditions. This impact level does not need mitigation.

- A **less-than-significant impact** is one that would not result in a substantial or potentially substantial adverse change in the physical environment. This impact level does not require mitigation, even if feasible, under CEQA.

- A **significant impact** is defined by CEQA Section 21068 as one that would cause "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project." Levels of significance can vary by Program element, based on the change in the existing physical condition. Under CEQA, mitigation measures or alternatives to the proposed Program must be provided, where feasible, to reduce the magnitude of significant impacts.

- A **potentially significant impact** is one that, if it were to occur, would be considered a significant impact as described above; however, the occurrence of the impact cannot be determined at this time with certainty. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.

- A **significant and unavoidable impact** is one that would result in a substantial adverse effect on the physical environment that could not be reduced to a less-than-significant level even with any feasible mitigation. Under CEQA, a project with significant and unavoidable impacts can proceed, but the lead agency is required to prepare a "statement of overriding considerations" in accordance with State CEQA Guidelines CCR Section 15093, explaining why the lead agency would proceed with the project in spite of the potential for significant impacts.

- A **potentially significant and unavoidable impact** is one that, if it were to occur, would be considered a significant and unavoidable impact as described above; however, the occurrence of the impact cannot be determined at this time with certainty. For CEQA purposes, a potentially significant and unavoidable impact is treated as if it were a significant and unavoidable impact.

- **Residual Significant Impacts** identifies any significant impacts that would still be significant even after implementation of feasible mitigation measures.

  An impact may have a level of significance that is too uncertain to be reasonably determined, which would be designated **too speculative for meaningful evaluation**, in accordance with State CEQA Guidelines Section 15145. Where some degree of evidence points to the reasonable potential for a significant effect, the EIR may explain that a determination of significance is uncertain, but is still assumed to be "potentially significant," as described above. In other circumstances, after thorough investigation, the determination of significance may still be too speculative to be meaningful. This is an effect for which the degree of significance cannot be determined for specific reasons, such as because aspects of the impact itself are either unpredictable or the severity of consequences cannot be known at this time.

The Program elements or projects are expected to be built out over approximately 15 years. Project effects fall into the following categories:

- A **temporary effect** is a change in the environment that would last for a finite period of time and would not be permanent.

- A **short-term effect** is a change in the environment that would last for a brief period of time, defined in the PEIR as less than 3 years. It is possible for an effect to be temporary but not short term. For example, if construction-related traffic would be localized at a specific intersection during implementation of multiple Program elements over the 15-year duration of the proposed Program, then the impact would be considered temporary because it would end when the Program is completed but would not be considered short term because the localized impact would persist for longer than 3 years. Most of the construction-related impacts for this Program would be both temporary and short term.

- A **long-term effect** is a change in the environment that would last longer than 3 years. In some cases, a long-term effect could be considered a permanent effect.

This PEIR also considers direct, indirect, and cumulative impacts:

- A **direct impact** is an effect that would be caused by an action and would occur at the same time and place as the action.

- An **indirect impact** is an effect that would be caused by an action but would occur later in time, or at another location, yet is reasonably foreseeable in the future. Examples of indirect effects include growth-inducing effects and other effects related to changes in land use patterns, population density, or growth rate, and related effects on the physical environment.

- A **cumulative impact** is a project impact that is cumulatively considerable (and thus significant) when compounded with impacts from other past, present, and probable future projects. A project's incremental effects are not "cumulatively considerable" solely because other projects would have a significant cumulative impact; rather, the project would also need to contribute considerably to worsening these impacts. Cumulative impacts associated with the proposed Program are discussed in Chapter 4 of this PEIR.

  Mitigation measures to avoid, minimize, rectify, reduce, or compensate for significant and potentially significant impacts of the proposed project, in accordance with the State CEQA Guidelines, as amended (14 CCR Sections 15370, 15002[a][3], 15021[a][2], and 15091[a][1]), where feasible, are recommended for each significant or potentially significant impact. In accordance with California Public Resources Code Section 21081.6(a), the lead agency, if it approves the project, will adopt a mitigation monitoring and reporting program at the time that it certifies the EIR. The lead agency will also be required to adopt findings identifying each significant effect of the project and the extent to which feasible mitigation measures have been adopted.

3.1 GEOLOGY, SOILS, AND MINERAL RESOURCES

3.1.1 ENVIRONMENTAL SETTING

GEOLOGY

The PEIR study area is located in the Hollister Valley, a nearly flat alluvial plain between the Diablo Range to the east and Gabilan Range to the west. The Hollister Valley is located within the Coast Range geomorphic province. The valley floor is underlain by Holocene-age (11,000 years Before Present [B.P.] and younger) and Pleistocene-age (11,000 to 1.8 million years B.P.) stream deposits. The valley floor gives way to low foothills and piedmont slopes to the east and west, where older geologic materials are exposed as a result of weathering and erosion. Displacement along the San Andreas, Sargent, and Calaveras fault zones over the last 5 million years (since the Pliocene epoch) has resulted in a disruption of the geologic sequences that were deposited in the Hollister Valley. As postulated by E.A. Gribi (cited in Rogers 1993), the Pliocene depositional sequence south of the San Benito River may be part of a seaway that once connected the Pacific Ocean with the Vallecitos area and ultimately the San Joaquin Valley during most of the Cenozoic era.

The geology of the study area is described in further detail and the geologic formations are shown in Figure 3.1-1.

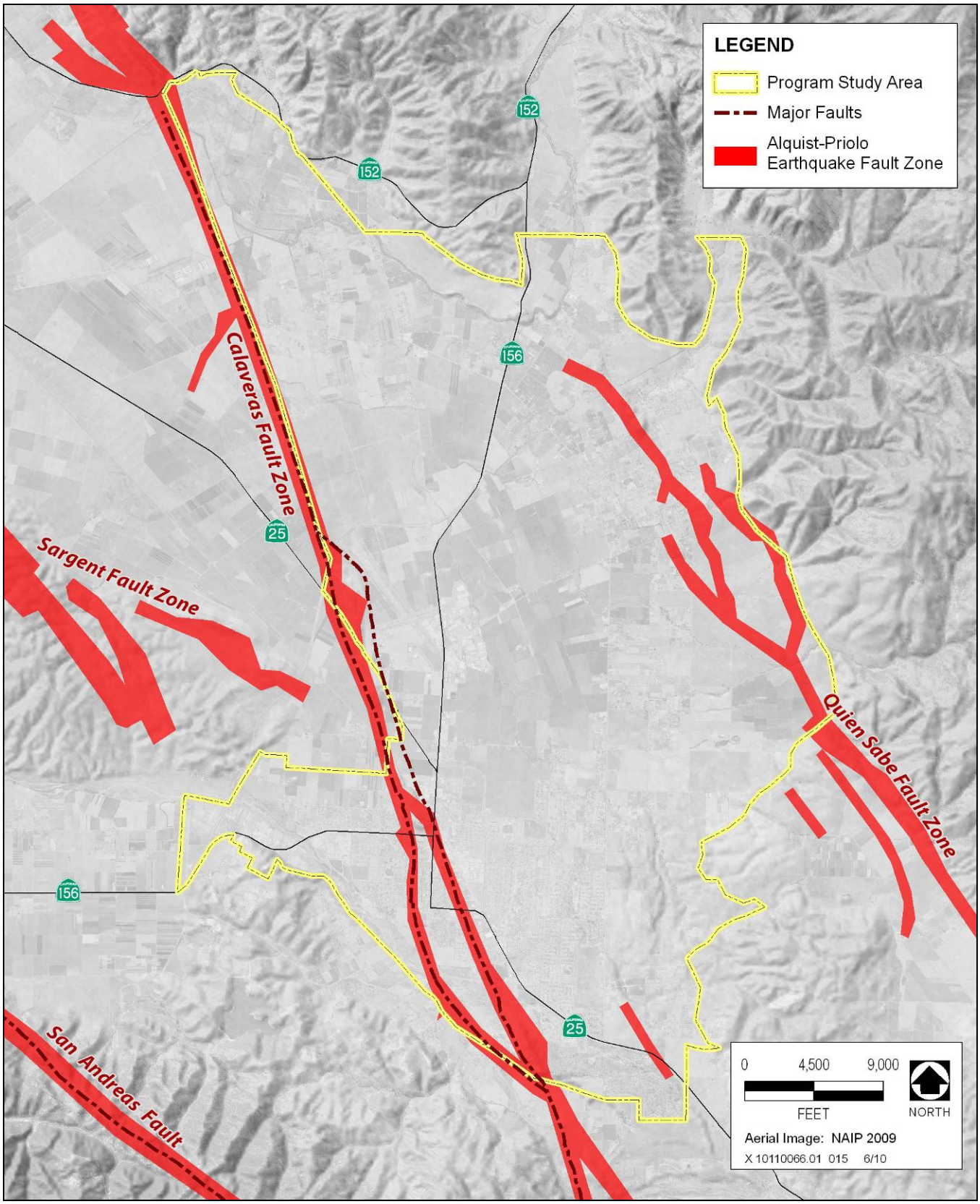
SEISMICITY

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is fault ground rupture, also called surface faulting. Common secondary seismic hazards include ground shaking, liquefaction, and subsidence. Each of these potential hazards is discussed below.

Fault Ground Rupture

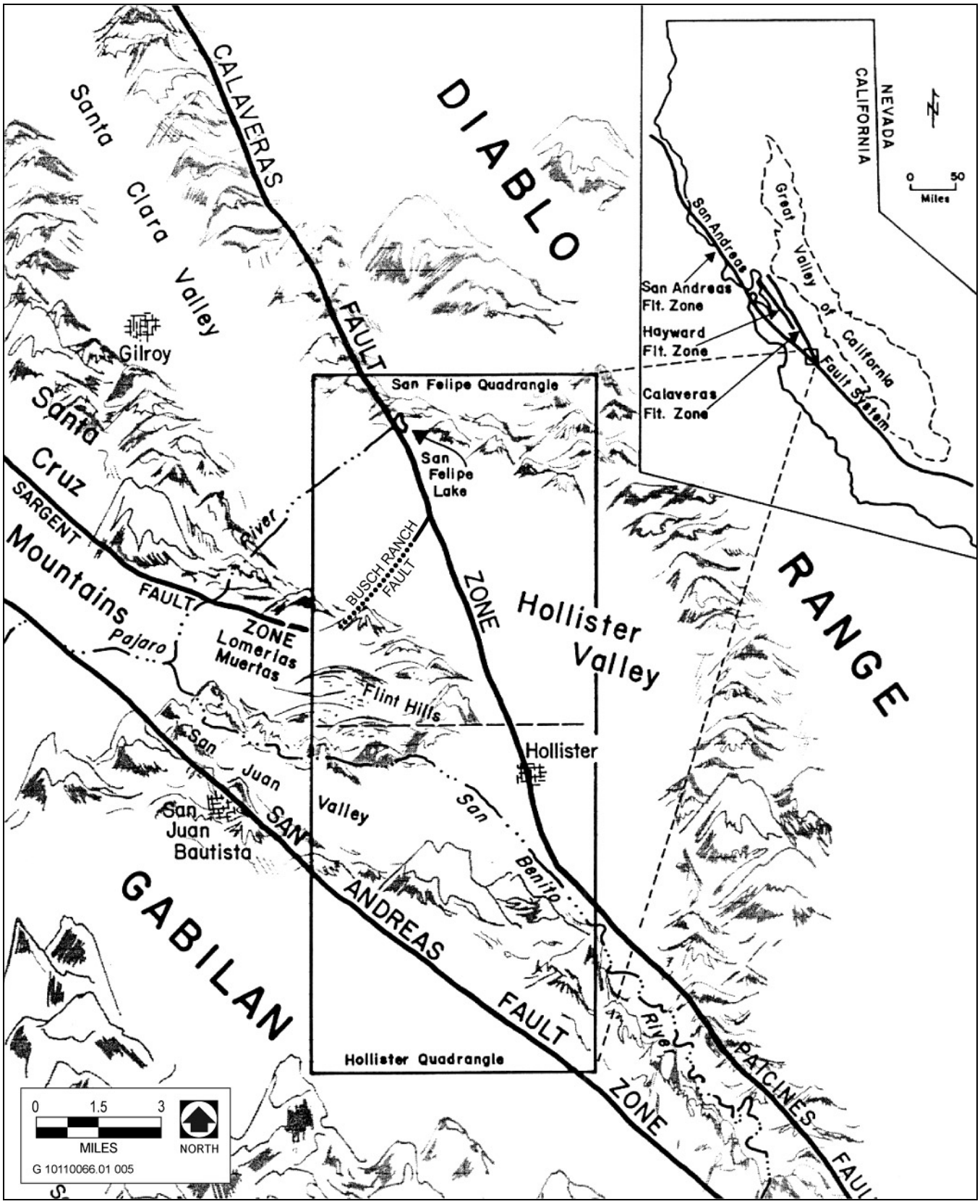
Surface rupture is an actual cracking or breaking of the ground along a fault during an earthquake. Structures built over an active fault can be torn apart if the ground ruptures. Surface ground rupture along faults is generally limited to a linear zone a few yards wide. The Alquist-Priolo Earthquake Fault Zoning Act was created to prohibit the location of structures designed for human occupancy across the traces of active faults, thereby reducing the loss of life and property from an earthquake. Three Alquist-Priolo Earthquake Fault Zones are located within the PEIR study area including the Hollister Urban Area (HUA), associated with the Calaveras, Sargent, and Quien Sabe Faults (California Geological Survey [CGS] 2007; Hart and Bryant 1999) as shown in Figure 3.1-1. Another Alquist-Priolo Earthquake Fault Zone associated with the San Andreas Fault is located immediately adjacent to the southwestern portion of the study area (Figure 3.1-1). Before any new buildings such as the proposed new water treatment plant could be permitted within these fault zones, the project proponent is required by law to have a geologic investigation prepared to demonstrate that proposed buildings would not be constructed across active faults.

An evaluation and written report of a specific site must be prepared by a licensed geologist. Furthermore, although not zoned under the Alquist-Priolo Act, the Busch Ranch Fault is located within the PEIR study area and, based on the discussion below under “Seismic Ground Shaking,” is considered an active fault. Therefore, proposed buildings such as the new water treatment plant should not be placed within 50 feet of the Busch Ranch Fault (Figure 3.1-2).



Source: CGS 2001

Alquist-Priolo Fault Zones **Figure 3.1-1**



Source: Rogers 1993, modified by AECOM in 2010

Active Faults in the Program Region **Figure 3.1-2**

Seismic Ground Shaking

The study area is located in a seismically active area. In addition to the Calaveras Fault, the Busch Ranch, Flint Hills East, Flint Hills West, Sargent, Bolsa Road, Quien Sabe (Ansaymas), Santa Ana, Union Road East, Union Road West, Morse, and San Andreas faults are all located within or adjacent to the study area. Rogers (1993) compiled earthquake data for the Hollister-San Felipe area based on various published and unpublished reports, and concluded that a generally consistent pattern of earthquake activity has occurred in the area since the mid-1850s. Since 1928, earthquakes have been reported every year in the Hollister-San Felipe area, with an average of eight earthquakes per year. Most of the reported earthquakes did not result in structural or property damage. However, between 1930 and 1972, approximately 52 earthquakes with minor damage (Modified Mercalli Intensities of V) and approximately 19 earthquakes with major damage (Modified Mercalli Intensities of VI and VII) have been reported. Most of these earthquakes were generated along the San Andreas, Calaveras, and Sargent or Busch Ranch Fault Zones (Figure 3.1-2). The Quien Sabe Fault Zone is also active.

San Andreas Fault Zone—The San Andreas Fault Zone ranges from 500 to 2,500 feet wide and is composed of many fault traces that form a complex, braided pattern. Fault displacement on the San Andreas within the Hollister-San Felipe area is right-lateral. Most of the geomorphic evidence for fault displacement occurs along one particular trace within the fault zone. Evidence of tectonic creep is also found along the same fault trace. (Rogers 1993.) The San Andreas Fault Zone is located immediately adjacent to the southwestern portion of the PEIR study area.

Calaveras Fault Zone—The Calaveras Fault Zone traverses the PEIR study area in a northwest to southeast direction. Displacement along the fault is right-lateral. Numerous structures, streets, and sidewalks located along the Calaveras Fault in the City of Hollister are offset as a result of the effects of tectonic creep—surface displacement along the fault in the absence of earthquakes. One event in 1971 resulted in tectonic creep totaling 8.5 millimeters over a 6-mile-long stretch of the Calaveras Fault Zone. As summarized by Rogers (1993), several studies have reported that fault-slip “episodes” beneath the earth’s surface have, in several instances, been followed by surface fault creep or earthquakes, or both. As with the San Andreas, tectonic creep along the Calaveras Fault Zone is occurring along one specific fault trace within the zone.

Sargent Fault Zone—According to Bryant (2000), the southeastern section of the Sargent Fault Zone extends from the Hecker Pass area southeast to near Hollister. This section of the fault zone is characterized by predominantly dextral strike-slip displacement, as evidenced by geomorphic expression, abundant microseismicity, and geodetic evidence of 1 inch/year dextral creep. The southeastern section is comprised of the Sargent, Castro, Flint Hills East, and Flint Hills West Faults. However, Rogers (1993) indicates that no evidence of tectonic creep or geomorphic evidence of active faulting was found along the Sargent Fault Zone in the Hollister-San Felipe area, which may indicate that the Sargent Fault Zone does not extend farther south below the Busch Ranch Fault, and may be terminated by the Flint Hills Faults.

Busch Ranch Fault—The Busch Ranch Fault is located within the PEIR study area and is oriented in a northeast to southwest direction, west of the Calaveras Fault Zone. Displacement along this fault totaled approximately 4 inches between 1960 and 1967; however, monitoring between 1967 and 1970 indicated an average annual displacement of 0.3 inches. Displacement along the fault is left-lateral. The Busch Ranch Fault had been interpreted as a possible extension of the Calaveras Fault Zone. The main shock from the magnitude 5.1 earthquake in November 1974 was located approximately 0.62 mile north of the Sargent Fault, and 38 aftershocks occurred in a linear fashion along a southwesterly projection of the Busch Ranch Fault, with displacement along a nearly vertical fault at depths of 2 to 3.5 miles below the earth’s surface. Based on this evidence, the Busch Ranch Fault should be considered an active fault. (Rogers 1993.)

Quien Sabe Fault Zone—The northern end of the Quien Sabe Fault Zone is located within the northeastern portion of the PEIR study area, where it splays into dextral normal fault with scarp profiles that are indicative of at least two surface-rupture events. Several publications, summarized by Bryant (1998), indicate that the fault offsets later Pleistocene and Holocene geologic deposits, indicating that the last known seismic event occurred

during Holocene time. The Quien Sabe Fault Zone is the presumed source for a magnitude 5.8 earthquake that occurred on January 23, 1986.

Other earthquake epicenters have been compiled and mapped by Rogers (1993) near the Union Road and Morse Faults. The Flint Hills Faults offset Pleistocene-age geological deposits, but do not seem to offset Holocene-age deposits; however, Rogers recommended further studies to determine the age of the Flint Hills Faults.

Faults within and near the PEIR study area with known or estimated activity during Holocene time are listed in Table 3.1-1.

Table 3.1-1
Faults with Evidence of Activity During Holocene Time Within and Near the PEIR Study Area

Fault Name	Approximate Distance from PEIR Study Area	Fault Type[a]	Maximum Moment Magnitude[b]	Slip Rate (mm/yr)
Busch Ranch Fault	Within	N/A	N/A	0.03
Calaveras Fault Zone, Southern Section	Within[c]	A	5.8	15
Sargent Fault Zone, Southeastern Section	Within	A	6.8	3.0
Quien Sabe	Within	A	6.4	1.0
San Andreas Fault Zone, Santa Cruz Mountains	0.1 mile southwest	A	7.0	17
San Andreas Fault Zone, Creeping Section	1 mile southeast	A	6.2	34
Calaveras Fault Zone, Paicines Section	4 miles southeast	A	N/A	5 to 9
Sargent Fault Zone, Northwestern Section	8 miles northwest	A	6.8	3.0
Zayante-Vergeles Fault Zone	6 miles southwest	A	7.0	0.1

Notes: N/A = not available or not known; mm/yr = millimeters per year

[a] Faults with an "A" classification are capable of producing large magnitude (M) events (M greater than 7.0), have a high rate of seismic activity (e.g., slip rates greater than 5 millimeters per year), and have well-constrained paleoseismic data (e.g., evidence of displacement within the last 700,000 years). Class "B" faults are those that lack the paleoseismic data necessary to constrain the recurrence intervals of large-scale events. Faults with a "B" classification are capable of producing an event of M 6.5 or greater.

[b] The moment magnitude scale is used by seismologists to compare the energy released by earthquakes. Unlike other magnitude scales, it does not saturate at the upper end, meaning that there is no particular value beyond which all earthquakes have about the same magnitude, which makes this scale a particularly valuable tool for assessing large earthquakes.

[c] And within the City of Hollister

Sources: Cao 2003; Jennings 1994; Petersen et al. 1996; Rogers 1993; USGS 2010; data compiled by AECOM in 2010

Liquefaction

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of fluids. Primary factors used in determining the liquefaction potential are soil type, the level and duration of seismic ground motions, the distance from an active seismic source, and the depth to groundwater. Loose sands and peat deposits are generally the most susceptible to liquefaction. Age is also a factor in the potential of soils to liquefy, with the younger (less than 11,000 years old) Holocene deposits being the most sensitive to liquefaction.

Sediments present in the study area vary, depending on the location. In some places, they consist of loosely compacted Holocene-age deposits. In others, the materials that underlie the valley floor consist of older Pleistocene-age alluvial deposits. Because active seismic sources are located within the study area, because much of the study area is underlain by a high water table, and because portions of the study area are underlain by

younger Holocene deposits, a potential exists for liquefaction to occur at the locations of any of the proposed Program facilities.

SOILS

The soils of the study area vary widely as a result of differences in geomorphologic processes, parent material, biologic activity, topography, and time. The purpose of this PEIR section is to identify areas where soils generally may pose issues for building construction that should be evaluated in more detail in the future. Facilities that would be developed as part of the proposed Program include a new surface water treatment plant, demineralization facilities, a brine disposal facility, water storage facilities, urban wells, percolation basins, pipelines, and ancillary facilities. These facilities could be located in a variety of urban and rural settings in the PEIR study area. The exact locations for these facilities, specific construction methods, and haul routes have not been identified. Therefore, this analysis does not attempt to evaluate the site-specific soil properties of each soil map unit within the entire approximately 32,000-acre study area. Rather, this analysis presents a broad discussion of the soil series at a higher level of soil classification. The list of soil series described in Table 3.1-2 and shown on Figure 3.1-3 is intended to disclose to agencies and members of the public the types of soils and their properties that may be encountered at general areas within the PEIR study area where proposed construction may occur.

Table 3.1-2
General Soils Types and Properties in the PEIR Study Area

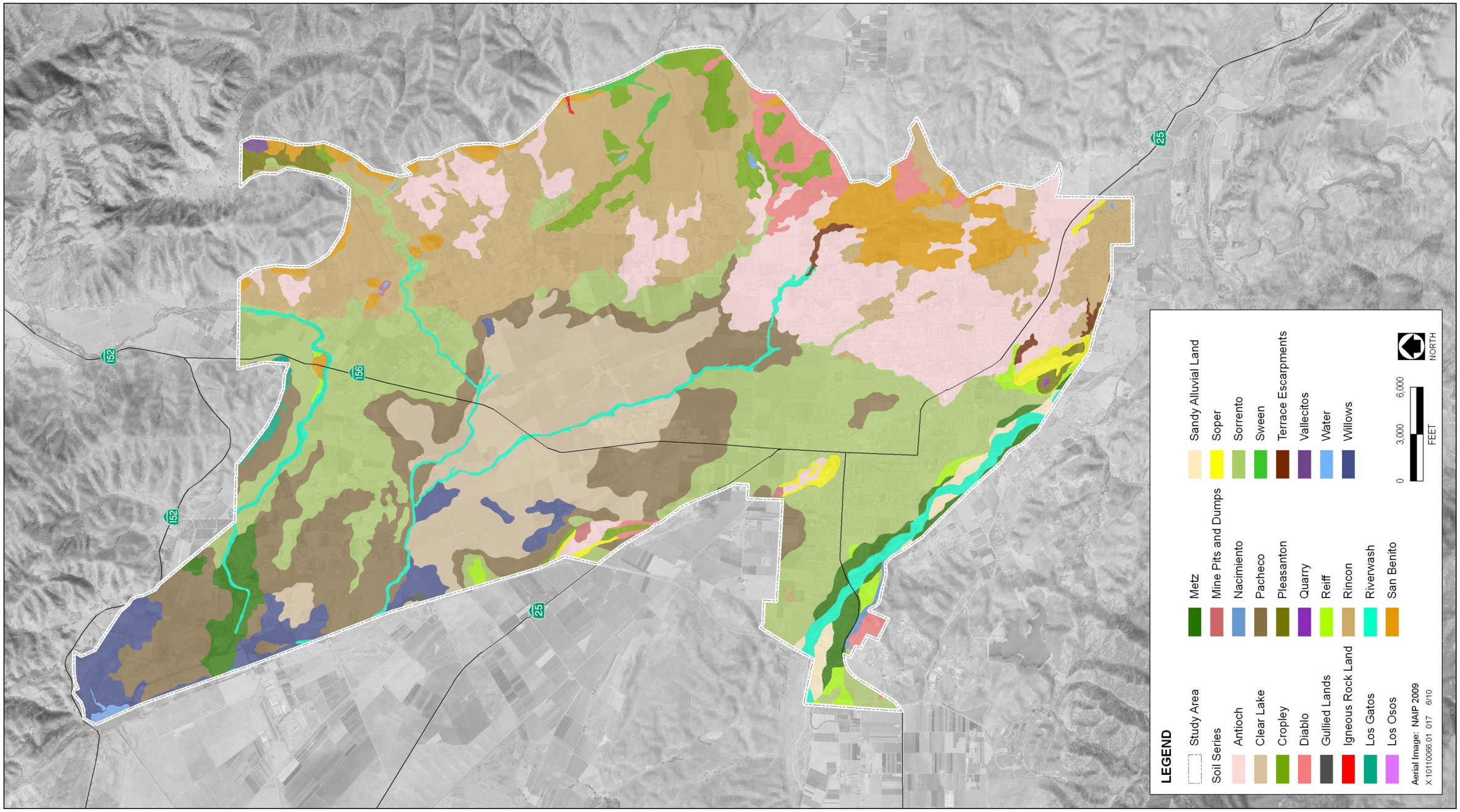
Soil Series Name	Soil Description	Shrink/Swell Potential[(a)]	Permeability	Drainage	Average Slopes and Runoff Potential	Corrosivity of Concrete/Steel
Antioch	Loam, clay loam	6.0	Very slow	Soil is moist November-May; moderately well to somewhat poorly drained	Slopes less than 3%; slow to medium runoff	Low/High
Clear Lake	Clay	High	Slow to very slow	Water table close to surface November-May; poorly drained	Slopes 0-2%; high runoff	Moderate/ High
Cropley	Clay	High	Slow	Soil is moist November-May; moderately well and well drained	Slopes 0-15%; medium to very high runoff	Low/High
Diablo	Silty clay	High	Slow	Well drained	Slopes 5-50%; slow runoff when soil is dry, rapid runoff when soil is wet	Low/High
Gullied Lands	Footslope of alluvial fans	--	--	--	--	--
Igneous Rock Land	Unweathered bedrock	--	--	--	--	--
Los Gatos	Clay loam; bedrock at 36 inches bgs	4.5	Moderate	Soil is moist November-May; well drained	Steep mountainous slopes; rapid to very rapid runoff	Moderate/ Moderate
Los Osos	Loam, clay loam; bedrock at 20-40 inches bgs	6.7	Slow	Soil is moist November-May; well drained	Slopes 5-75%; very rapid runoff	Low/High
Metz	Sandy loam	1.5	Moderately rapid	Water table is close to surface November-May; somewhat excessively drained	Slopes 0-15%; negligible to low runoff	Low/Low
Mine Pits and Dumps	Extremely gravelly coarse sand	1.5	--	--	--	--

Table 3.1-2
General Soils Types and Properties in the PEIR Study Area

Soil Series Name	Soil Description	Shrink/Swell Potential[a]	Permeability	Drainage	Average Slopes and Runoff Potential	Corrosivity of Concrete/Steel
Nacimiento	Silty clay loam	High	Moderately slow	Soil is moist November-May; well drained	Slopes 9-75%; medium to high runoff	--
Pacheco	Silt loam	6.5	Moderate or moderately slow	Water table is close to surface November-May; poorly or somewhat poorly drained	Slopes 0-2%; slow runoff	Low/High
Pleasanton	Sandy loam	2.3	Moderately slow	Soil is moist November-May; well drained	Nearly level to gentle slopes; slow to medium runoff	Moderate/ Moderate
Quarry	--	--	--	--	--	--
Reiff	Sandy loam with lenses of gravel	1.9	Moderately rapid	Water table is close to surface November-May; well drained	Slopes 0-9%; very slow to slow runoff	Low/ Moderate
Rincon	Silty clay loam	7.5	Slow	Soil is moist November-May; well drained	Slopes 0-30%; slow to rapid runoff	Low/high
Riverwash	Found in streambeds; coarse sand to sandy loam	1.5	High	Water table is at the ground surface	At the toe of Slopes 0-5%	--
San Benito	Clay loam	High	Moderately slow	Soil is moist November-May; well drained	Very steep slopes; medium to very rapid runoff	Low/ Moderate
Sandy Alluvial Land	Found on basin floors	1.5	High to very high	Occasionally flooded; somewhat excessively drained	Slopes 1-4%	Low/ Moderate
Soper	Gravelly loam	2.7	Moderately slow	Soil is moist November-May; well drained	Slopes 15-50%; rapid runoff	Moderate/ Moderate
Sorrento	Loam	4.5	Moderate to moderately slow	Soil is moist November-May; well drained	Slopes 0-15%; negligible to medium runoff	Low/ Moderate
Sween	Clay loam; depth to bedrock 20-40 inches bgs	3.0	Slow permeability	Soil is moist November-May; well drained	Slopes 15-50%; rapid to very rapid runoff	Low/High
Terrace Escarpments	Found at the footslope of terraces	--	--	--	--	--
Vallecitos	Gravelly loam; depth to bedrock 20-80 inches bgs	4.4	Slow	Soil is moist November-May; well drained	Slopes 9-75%; medium to very rapid runoff	Moderate/ High
Willows	Clay	High	Very slow	Water table is close to surface; poorly to very poorly drained	Slopes 0-2%; slow runoff	Low/High

Notes: bgs = below ground surface; -- = data not available.
[a] Based on percentage of linear extensibility.
Sources: NRCS Soil Survey Division (Dates Vary); NRCS Web Soil Survey 2009

This page intentionally left blank.



Source: NRCS 2007 (SSRGO)

Soil Series in the Study Area

Figure 3.1-3

SUBSIDENCE AND LATERAL SPREADING

Subsidence of the land surface can be induced by both natural and human phenomena. Natural phenomena that can cause subsidence can result from tectonic deformations and seismically induced settlements; from consolidation, hydrocompaction, or rapid sedimentation; from oxidation or dewatering of organic-rich soils; and from subsurface cavities. Subsidence related to human activity can result from withdrawal of subsurface fluids or sediment. Lateral spreading is the horizontal movement or spreading of soil toward an open face, such as a streambank, the open side of fill embankments, or the sides of levees. The potential for failure from subsidence and lateral spreading is highest (1) in areas where the groundwater table is high, (2) where relatively soft and recent alluvial deposits exist, and (3) where creek banks are relatively high. All three of these conditions occur at various locations within the study area.

LANDSLIDES

The topography of most of the PEIR study area consists of nearly level terrain along the valley floor; however, steeper sloping terrain along the foothills and piedmont slopes of the Diablo and Gabilan ranges are also part of the PEIR study area. Landslides have been mapped immediately adjacent to and within the PEIR study area, by Rogers (1993) and Majmundar (1994) in all of the foothill areas (i.e., south of the San Benito River, and east and north of Hollister). These areas primarily consist of three geologic deposits: the Purisima Formation; San Benito Formation; and unconsolidated sand, silt, and gravel (which may be part of the San Benito Formation). The greatest percentage of landslides have been mapped within the Purisima Formation, which occurs adjacent to (not within) the PEIR study area. A moderate to large number of landslides have also been mapped within the San Benito Formation and the unconsolidated sand, silt, and gravel formation, both of which are present within the PEIR study area. Rogers (1993) indicates that landslides are particularly abundant along fault zones, likely because of the weakened nature of the bedrock from tectonic deformation. Landslides are also more abundant at the junctions of two or more fault zones.

MINERALS

Under the Surface Mining and Reclamation Act (SMARA), the State Mining and Geology Board may designate certain mineral deposits as being regionally significant to satisfy future needs. The Board's decision to designate an area is based on a classification report prepared by CGS and on input from agencies and the public. The Program study area lies within the designated Monterey Bay Production-Consumption Region for aggregate materials, which includes all designated lands within the marketing area of the active aggregate operations supplying the Monterey Bay urban center.

In compliance with SMARA, the California Division of Mines and Geology (CDMG) has established the classification system shown in Table 3.1-3 to denote both the location and significance of key extractive resources.

Table 3.1-3
California Division of Mines and Geology Mineral Land Classification System

Classification	Description
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence
MRZ-2	Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists
MRZ-3	Areas containing mineral deposits, the significance of which cannot be evaluated from existing data
MRZ-4	Areas where available data are inadequate for assignment to any other mineral resource zone

Note: MRZ = Mineral Resource Zone
Source: Stinson et al. 1987

According to Stinson et al. (1987), deposits zoned as Mineral Resource Zone 2 (MRZ-2) are composed of material that is suitable as a marketable commodity and meet the threshold gross selling price of $5 million (1978 dollars). Materials classified as MRZ-2 are suitable for use as asphaltic concrete aggregate, roadbase, or subbase material, in addition to use as a Portland cement concrete aggregate. In San Benito County, the MRZ-2 areas consist of the Holocene stream channel and portions of the floodplain of the San Benito River, designated as the "San Benito River Production District." The deposit begins southeast of the City of Hollister at the junction of Tres Pinos Creek and the San Benito River, and continues downstream (westward) to the northern end of the San Juan Valley (near the junction of the San Benito River with U.S. Highway 101). Aggregate deposits are estimated to be approximately 40 feet thick in this production district.

In 1999, Kohler-Antablin updated the mineral land classification of the Monterey Bay Production-Consumption Region. Based on more recent data, various locations within the San Benito River Production District were reclassified and the name of aggregate mining companies operating in this production district in 1999 was identified. In addition, new mineral resources were added, including the Don Chapin Company (Bolsa Road aggregate pit) adjacent to and northwest of the Hollister Airport, which is within the PEIR study area. Finally, the old channel of the San Benito River, adjacent to Southside Road and Airline Road, was classified as MRZ-2 (southeast of the PEIR study area).

The eastern third of the San Benito River Production District lies within the southern portion of the PEIR study area, as shown in Figure 3.1-4.

Stinson et al. (1987) designated all the Quaternary (Pleistocene) terrace deposits and the San Benito Formation (Figure 3.1-1) within the USGS Hollister Quadrangle as MRZ-3: areas where the significance of mineral deposits cannot be evaluated from existing data. These MRZ-3 areas generally contain alluvial deposits of sand and gravel, but resource calculations could not be made at the time of this analysis because of inadequate subsurface data.

In 1950, the Hollister Oil and Gas Field was discovered, approximately 2 miles northwest of Hollister in the foothills just outside the PEIR study area. Following that discovery, oil and gas wells were drilled in numerous other locations throughout the PEIR study area. No records of oil production have existed since 1972. Gas-bearing lenses of sand in the study area and vicinity are generally located in the Pliocene-age Purisima Formation, which is located beneath the younger Plio-Pleistocene San Benito Formation and the Pleistocene unnamed formation composed of unconsolidated sand, silt, and gravel. (Rogers 1993.)

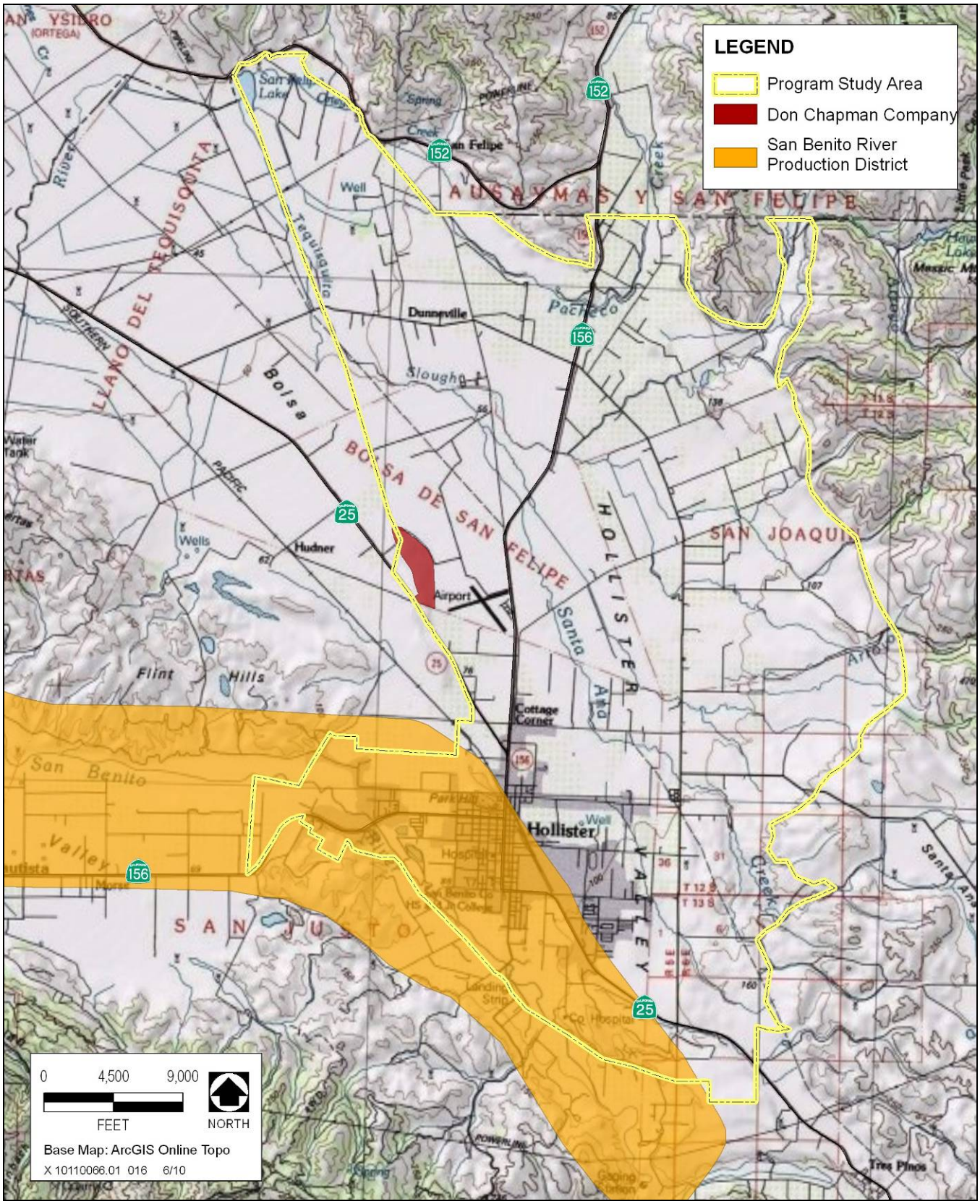
3.1.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

The mission of NEHRP includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRPA designates the Federal Emergency Management Agency as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, the National Science Foundation, and USGS.



Sources: Stinson et al. 1987; Kohler-Antablin 1999

Mineral Resources in the Study Area **Figure 3.1-4**

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (California Public Resources Code [PRC] Sections 2621–2630) was passed in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must perform a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) addresses earthquake hazards from nonsurface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

National Pollutant Discharge Elimination System Permit

See Section 3.2, “Water Resources,” for a full discussion.

California Building Standards Code

The California Building Standards Commission (BSC) is responsible for coordinating, managing, adopting, and approving building codes in California. In July 2007, the BSC adopted and published the 2006 International Building Code as the 2007 California Building Code (CBC). This new code became effective on January 1, 2008, and updated all the subsequent codes under the California Code of Regulations (CCR) Title 24. The State of California provides minimum standards for building design through the 2007 CBC (CCR, Title 24). The CBC applies to building design and construction in the state and is based on the federal Uniform Building Code (UBC), used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions.

Several chapters of CBC may be applicable to the proposed Program. The state earthquake protection law (California Health and Safety Code Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces, caused by wind and earthquakes. Chapter 16 of the CBC specifies exactly how each seismic design category is to be determined, on a site-specific basis through the site-specific soil characteristics and proximity to potential seismic hazards. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls. This chapter requires the preparation of a preliminary soil report, engineering geologic report, geotechnical report, and supplemental ground-response report. Chapter 18 also requires analysis of expansive soils and determination of the depth to groundwater table; slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading; lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity; and identifies mitigation measures to be considered in structural design. Chapter 29 regulates excavation, foundations, and retention walls.

Appendix Chapter J of the 2007 CBC regulates grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

San Benito County General Plan

The San Benito County General Plan (County General Plan)(1980) includes a seismic safety element that identifies the following policies associated with geology and soils resources that are applicable to the proposed Program:

- **Policy 1:** In general, urban expansion should be directed to areas of least risk from natural and man-made hazards.
    - Action f: Require setback distances from fault traces should be determined by individual site-specific surface rupture investigations.
    - Action g: The probable performance of structures proposed in those portions of the County with high liquefaction potential is difficult to predict and should be the subject of detailed site-specific liquefaction studies.
- **Policy 2:** Except for utility lines and transportation links, critical facilities and occupancies should not be in High Hazard Areas.
    - Action a: In areas identified as geologic or seismic hazard areas in the Open Space/Conservation Element development should be permitted only with a Use Permit.
    - Action b: The County should develop standard conditions for Use Permits with high seismic hazard areas which require site specific geologic, soils or other investigations be made and the structures involved designed and constructed to withstand the "maximum probable" earthquake or other identified potential hazards, with damage limited to an acceptable level.

San Benito County Grading, Drainage, and Erosion Control Ordinance

The San Benito County Grading, Drainage, and Erosion Control Ordinance (Title 19, Chapter 19.17 of the San Benito County Code) was enacted to safeguard public health, property, and general welfare by regulating grading, drainage, and erosion control on private and public property and requiring grading, erosion, and drainage control plans that prevent water pollution and sedimentation of the County's water resources. Grading activity is prohibited within 50 feet (measured horizontally) of the top of the bank of a stream, creek, river or within 50 feet of a wetland or body of water. Grading permit applications must include grading plans prepared by a civil engineer that show elevations, structures, erosion control methods, and amounts of cut and fill material. A soils engineering report and a geologic report must be submitted along with the grading permit application.

City of Hollister General Plan

The City of Hollister General Plan (City General Plan)(2005) identifies the following policies associated with geology and soils resources that are applicable to the proposed Program:

- **HS1.4 Seismic Hazards.** Assure existing and new structures are designed to protect people and property from seismic hazards. Review all development proposals for compliance with the Alquist-Priolo Earthquake Fault Zoning Act and the Uniform Building Code as a way to reduce the risk of exposure to seismic hazards for those who will be living and working within the Hollister Planning Area.
- **HS1.5 Geotechnical and Geologic Review.** Require all geologic hazards be adequately addressed and mitigated through project development. Development proposed within areas of potential geological hazards shall not be endangered by, nor contribute to, the hazardous conditions on the site or on adjoining properties.

- **HS1.6 Engineering Tests for Geologic Conditions.** Require engineering tests for those development projects which may be exposed to impacts associated with expansive soils, so that building foundation footings, utility lines, roadways, and sidewalks can be designed to accept the estimated degree of soil contraction, expansion, and settlement, according to the standards of the Uniform Building Code.

- **HS1.7 Design of Safe Structures and Utilities.** Require new roads, bridges, and utility lines are constructed to accommodate possible fault movement and withstand the expected ground motion induced during an earthquake.

- **HS2.1 High Occupancy Structures.** High-occupancy structures (such as schools, hospitals, office buildings, and apartments) or critical emergency facilities (such as fire and police stations, emergency relief storage facilities, and water storage tanks) should not be located within an active fault's "zone of potential surface deformation." In addition, high-occupancy structures should be designed or redesigned to protect human life to the highest degree possible during the "maximum probable event" of seismic activity. High occupancy structures should also have emergency plans approved by the City.

3.1.3 Environmental Impacts and Mitigation Measures

Analysis Methodology

The analysis prepared for this PEIR relied on U.S. Natural Resources Conservation Service (NRCS) soil survey data (2009) and published geologic literature and maps. The information obtained from these sources was reviewed and summarized to present existing conditions and identify potential environmental impacts based on the thresholds of significance presented below. Impacts associated with geology, soils, and mineral resources that could result from project construction and operational activities were evaluated qualitatively, based on conditions within the study area and expected construction practices.

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on Appendix G of the State CEQA Guidelines, as amended. The proposed Program would result in a significant impact related to geology, soils, and mineral resources if they would:

- expose people, property, or structures to potential substantial adverse impacts, including the risk of loss, injury, or death involving:
    - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
    - strong seismic ground shaking;
    - seismic-related ground failure, including liquefaction; or
    - landslides;
- result in substantial soil erosion or the loss of topsoil;
- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;

- be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater;
- result in the loss of availability of known mineral resources that would be of value to the region and the residents of the state; or
- result in the loss of availability of a locally important mineral resources recovery site delineated on a local general plan, specific plan, or other land use plan.

IMPACT ANALYSIS

The following Program elements were evaluated for their potential to result in impacts related to geology, soils, and mineral resources and no impacts were identified:

- **Purchases or Transfers of Imported Water Supplies:** This program element would use existing facilities and not involve earth-moving activities.
- **Non-Structural Solutions**: Program non-structural solutions include water conservation, salinity education, a softener ordinance, and other measures. These measures would reduce water demands, improve water quality, and not involve earth-moving activities.
- **Lessalt Water Treatment Plant (WTP) Upgrades:** These upgrades would occur at the already disturbed Lessalt WTP site and involve only minor, if any, earth-moving activities.
- **Ridgemark Wastewater Treatment Plant (WWTP) Upgrades**: These upgrades would occur at an already disturbed site and involve only minor, if any, earth-moving activities.
- **Operational Elements of the Program:** Following completion of construction of the North County Groundwater Bank, Lessalt WTP, new WTP, Ridgemark WWTP, and Demineralization (at existing urban wells or centralized plant), operations of these facilities would not involve earth-moving activities nor have any impact on geology, soils, or mineral resources.

Furthermore, because the proposed Program would not require the use of septic tanks or alternative wastewater disposal systems, there would be no impact from septic tanks or alternative wastewater disposal systems (in fact, the non-structural solutions Program element includes a measure to reduce the use of septic tanks in new developments); therefore, these issues are not evaluated further in this section of the PEIR.

IMPACT 3.1-1 Risks to People or Structures Caused by Surface Fault Rupture. *Individual Program elements within the study area could be located within or adjacent to an Alquist-Priolo Earthquake Fault Zone or a known active fault. These impacts could be potentially significant.* ***Less than significant with mitigation.***

Three Alquist-Priolo Earthquake Fault Zones are located within the PEIR study area, associated with the Calaveras, Sargent, and Quien Sabe faults (Figure 3.1-1) and the Calaveras Fault is located in the City. Another Alquist-Priolo Earthquake Fault Zone associated with the San Andreas Fault is immediately adjacent to the southwestern portion of the PEIR study area (Figure 3.1-1). Furthermore, although not zoned under the Alquist-Priolo Act, the Busch Ranch Fault is located within the PEIR study area (Figure 3.1-2) and, based on the available geologic evidence, should be considered an active fault. Construction of proposed Program buildings within an Alquist-Priolo Fault Zone or within 50 feet of a known active fault could subject people working in such buildings to hazards from surface fault rupture. Furthermore, pipelines associated with the proposed project that

might be placed across an Alquist-Priolo Fault or the Busch Ranch Fault could break as a result of surface rupture in the fault zone. Therefore, this impact is considered **potentially significant**.

Mitigation Measure 3.1-1a: Prohibit the Construction of Buildings within 50 feet of Active Faults.

No new buildings intended for human occupancy (e.g., new WTP) that are proposed as part of a Program element shall be constructed within 50 feet of the Busch Ranch, Quien Sabe, Calaveras, Sargent, or San Andreas faults.

Mitigation Measure 3.1-1b: Prepare Geologic Report for any Program Facilities in an Alquist-Priolo Fault Zone or the Busch Ranch Fault Zone and Implement CBC Requirements.

For any Program-related building or pipeline that is proposed for construction within the Alquist-Priolo Special Studies Zones (Figure 3.1-1) or within 100 feet of the Busch Ranch Fault (Figure 3.1-2), the project proponents shall hire a California-registered geotechnical engineer to prepare a geologic engineering report that shall be submitted to and approved by the County before the issuance of building permits (if required) or approval of improvement plans. The geologic engineering report shall demonstrate that any Program-related buildings intended for human occupancy that will be located with an Alquist-Priolo Earthquake Fault Zone or adjacent to the Busch Ranch Fault shall be set back at least 50 feet (or more, depending on the recommendation of the geotechnical engineer) from the fault trace and that appropriate seismic engineering designs to prevent damage from surface fault rupture shall be incorporated into building and foundation plans and pipeline designs, pursuant to the California Building Standards Code.

Implementation of Mitigation Measures 3.1-1a and b would reduce the potentially significant impact of construction within an Alquist-Priolo Earthquake Fault Zone to a **less-than-significant** level because no buildings intended for human occupancy would be constructed within 50 feet of an active fault, and any buildings or pipelines proposed for construction within an Alquist-Priolo Earthquake Fault Zone would require preparation and submittal of engineering designs incorporating the ability to withstand damage from surface fault rupture according to the California Building Standards Code.

IMPACT 3.1-2 Risks to People and Structures Caused by Strong Seismic Ground Shaking. *Proposed Program facilities would be constructed in a seismically active area, and Program implementation could expose people and structures to risks caused by strong seismic ground shaking. These impacts could be potentially significant. Less than significant with mitigation.*

The Program facilities would be located in a seismically active area, as shown in Table 3.1-1. In addition to the Calaveras Fault, the Busch Ranch, Flint Hills East, Flint Hills West, Sargent, Bolsa Road, Quien Sabe (Ansaymas), Santa Ana, Union Road East, Union Road West, Morse, and San Andreas faults are all located within or adjacent to the PEIR study area. As described above in the "Environmental Setting," the Hollister area experiences an average of approximately eight earthquakes per year. Approximately 52 earthquakes with minor damage (Modified Mercalli Intensities of V) and approximately 19 earthquakes with major damage (Modified Mercalli Intensities of VI and VII) have been reported in the Hollister Area since 1928. The Calaveras, Quien Sabe, Sargent, and San Andreas faults are active, have produced large magnitude earthquakes in the past, and are located within or immediately adjacent to the PEIR study area. Therefore, any of the proposed Program facilities likely would be subject to strong seismic ground shaking at least once during the life of the facilities. This impact is considered **potentially significant.**

Mitigation Measure 3.1-2a: Prepare a Geotechnical Engineering Report and Implement Appropriate Recommendations Pursuant to the CBC.

Before building permits (if required) are issued and construction activities begin for any Program element, the project proponent shall hire a California-registered geotechnical engineer to prepare a final geotechnical subsurface investigation report for the proposed facilities that shall be submitted for review and approval to the appropriate permitting agency. The final geotechnical engineering report shall address and make recommendations on the following:

- seismic ground shaking;
- liquefaction;
- site preparation;
- soil-bearing capacity;
- appropriate sources and types of fill;
- potential need for soil amendments;
- structural foundations, including retaining-wall design;
- grading practices;
- soil corrosion of concrete and steel;
- erosion/winterization;
- subsidence and lateral spreading;
- expansive/unstable soils; and
- landslide potential.

In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include site-specific subsurface testing of soil and groundwater conditions at the locations proposed for facility construction, and shall determine appropriate foundation designs that are consistent with the version of the CBC that is applicable at the time building and grading permit applications are submitted. All recommendations contained in the final geotechnical engineering report shall be implemented by the project proponent. Special recommendations contained in the geotechnical engineering report shall be noted on the grading plans and implemented as appropriate before construction begins. Design and construction of all project facilities shall be in accordance with the CBC.

Mitigation Measure 3.1-2b: Monitor Earthwork during Ground-Disturbing Activities.

All earthwork shall be conducted in accordance with the recommendations of the final geotechnical report, to be monitored by a qualified inspector under the supervision of a California licensed civil engineer, retained by the project proponent. The inspector shall provide oversight during all excavation, placement of fill, and disposal of materials removed from and deposited on both on- and off-site construction areas.

Implementation of Mitigation Measures 3.1-2a and b would reduce the potentially significant impact of possible damage to people and structures from strong seismic ground shaking to a **less-than-significant** level by requiring that the design recommendations of a California-registered geotechnical engineer, intended to reduce damage from seismic events, be incorporated into buildings, structures, and infrastructure as required by the CBC, and that a qualified inspector working under the supervision of a California licensed civil engineer would provide on-site monitoring to ensure that earthwork is performed as specified in the plans.

IMPACT 3.1-3 Potential for Hazards Associated with Construction in Areas with Substantial Geologic and Soil Limitations. *Construction of proposed Program facilities could be subject to hazards from a number of soil limitations including: liquefaction; landslides, subsidence, and lateral spreading; shrink swell potential (primarily expansive soils); and high corrosivity potential. These impacts could be potentially significant. Less than significant with mitigation.*

Liquefaction—Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of fluids. Sediments present in the PEIR study area vary, depending on the location. In some places, they consist of loosely compacted Holocene-age deposits. In others, the materials that underlie the valley floor consist of older Pleistocene-age alluvial deposits. The greatest liquefaction potential is located in areas near the San Benito River. Because active seismic sources are located within the PEIR study area, and because portions of the PEIR study area are underlain by younger Holocene deposits, a potential exists for liquefaction to occur at the locations of any of the proposed Program facilities located in the vicinity of the river. Therefore, this impact is considered **potentially significant.**

Landslides, subsidence, and lateral swelling—Facilities within the PEIR study area could be constructed in areas that are underlain by unstable soils. The potential for failure from subsidence and lateral spreading is highest: (1) in areas where the groundwater table is high, (2) where relatively soft and recent alluvial deposits exist, and (3) where creek banks are relatively high. All three of these conditions occur at various locations within the PEIR study area. Furthermore, numerous landslides have been mapped immediately adjacent to and within the PEIR study area, in all of the foothill areas (i.e., south of the San Benito River, and east and north of Hollister). Landslides in the study area have been mapped within the San Benito Formation and the unnamed unconsolidated sand, silt, and gravel formation. Landslides are particularly abundant along fault zones and at the junctions of two or more fault zones. Therefore, Program facilities that would be constructed in or adjacent to the foothill areas, the two hilly areas near the center of Hollister, or along or adjacent to fault zones as well as project facilities that would be constructed near creeks, ponds, rivers, or other water features could be subject to damage from construction on unstable soils. Therefore, this impact is considered **potentially significant.**

Shrink swell potential (primarily expansion)—Expansive soils could shrink and swell as a result of moisture change. These volume changes could result in damage over time to project building foundations, underground utilities, and other subsurface facilities and infrastructure if they were not designed and constructed appropriately to resist the damage associated with changing soil conditions. Volume changes of expansive soils also could result in the consolidation of soft clays following the lowering of the water table or the placement of fill. Placing buildings or constructing infrastructure on or in expansive soils could result in structural failure. Based on a review of NRCS soil survey data as shown in Table 3.1-2, some of the Program facilities would be constructed in soils with a moderate to high shrink-swell potential, likely to be soils that are expansive. Soil expansion, including volume changes during seasonal fluctuations in moisture content, could adversely affect interior slabs-on-grade, landscaping hardscapes, and underground pipelines. Therefore, this impact is considered **potentially significant**.

High corrosive potential—Soil corrosivity is an electrochemical process that would result in corrosion of concrete and/or steel in contact with soil at Program facilities. Excessive corrosion could shorten the usable lifespan of the concrete or steel materials used in project construction. As shown in Table 3.1-2, NRCS soil survey data indicate that most of the soil types within which Program elements would be constructed have a moderate to high corrosion potential for both concrete and steel. Excessive corrosion could shorten the useful lifespan of proposed Program facilities. Therefore, this impact is considered **potentially significant**.

Mitigation Measure 3.1-3: Minimize Potential for Hazards in Areas with Substantial Soil Limitations. Implement Mitigation Measures 3.1-2a and b.

Implementation of these mitigation measures would reduce potential geologic hazards from construction in areas subject to substantial soil limitations to a **less-than-significant** level because a California-registered geotechnical engineer would perform a site-specific geotechnical investigation that shall

include a determination of specific soil limitations as required by the CBC, and all recommendations made by the engineer regarding design would be implemented. Examples of the types of recommendations that may be made include, but shall not be limited to:

- Construction of building foundations on pilings that are anchored in bedrock;
- Removal of soil and replacement with compacted fill;
- Foundation design that incorporates the use of a post-tensioned slab or removal of soil and replacement with compacted fill;
- Slope stabilization by installation of retaining walls, spraying with gunnite;
- Driving caissons into bedrock to provide foundation support; and
- Use of materials that are less subject to corrosion (for example, polyvinyl chloride [PVC] pipe instead of steel).

Furthermore, all earthwork would be monitored by a qualified inspector under the supervision of a California licensed civil engineer to ensure compliance with project plans and specifications.

IMPACT 3.1-4 Construction-Related Erosion. *Construction activities during proposed Program implementation would involve grading and movement of earth in soils subject to wind and water erosion. Stormwater Pollution Prevention Plans and Grading and Erosion Control Plans would be prepared and implemented as part of permit compliance for each Program element.* ***Less than significant.***

Program implementation would involve grading and construction activities for building foundations and trenching activities for pipelines. Conducting these activities would result in the temporary disturbance of soil and would expose disturbed areas to winter storm events. Rain of sufficient intensity could dislodge soil particles from the soil surface. If the storm was large enough to generate runoff, localized erosion could occur. In addition, soil disturbance resulting from construction activities during summer could result in soil loss because of wind erosion.

The project proponent of each Program element would prepare a storm water pollution prevention plan (SWPPP) and implement appropriate BMPs as required by the State National Pollutant Discharge Elimination System (NPDES) General Construction Permit. In order to obtain grading permits, the project proponent of each Program element would retain a California-registered civil engineer to prepare a grading and erosion control plan. The plan would be consistent with the San Benito County's grading ordinance and the state's NPDES general storm water construction permit, and would include the site-specific grading associated with development of all Program facilities. Grading and erosion control plans include the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, and a description of the location and methods of storage and disposal of construction materials. Erosion and sediment control measures may include the use of detention basins, berms, swales, wattles, and silt fencing, and covering or watering of stockpiled soils to reduce wind erosion. Stabilization on slopes may include construction of retaining walls and reseeding with vegetation after construction. Stabilization of construction entrances to minimize trackout (control dust) may be achieved by installing filter fabric and crushed rock to a depth of approximately 1 foot.

Because a grading and erosion control plan with specific erosion and sediment control measures such as those suggested above would be prepared, approved by San Benito County, and implemented prior to Program element construction, direct impacts associated with construction-related erosion are considered **less than significant.** Additional direct and indirect impacts from soil erosion, such as sediment transport, water contamination, and potential loss of habitat, are evaluated in Section 3.2, "Water Resources," and Section 3.3, "Biological Resources."

Mitigation Measure: No mitigation measures are required.

IMPACT 3.1-5 Possible Loss of Mineral Resources–Construction Aggregate. *A portion of the PEIR study area contains minerals that could provide a source of construction aggregate. Construction of proposed Program facilities in areas classified as MRZ-2 could result in loss of regionally important minerals. These impacts could be potentially significant.* ***Significant and unavoidable.***

The southern portion of the PEIR study area is located within the Monterey Bay Production-Consumption Region, designated by CDMG. A portion of the San Benito River Production Zone, which has been classified as a regionally significant source of construction aggregate materials, falls within the southern portion of the PEIR study area. Most of the San Benito River Production Zone has been classified as MRZ-2: areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists. Aggregate materials are an extremely important source for road base concrete throughout the Monterey Bay region. Construction of proposed Program facilities (i.e., a new WTP, potentially a centralized demineralization plant, and potential brine evaporation ponds), if located in the San Benito River Production Zone, would result in loss of regionally important minerals because those resources could no longer be mined after facilities were constructed.

Furthermore, the CDMG designated all the Quaternary (Pleistocene) terrace deposits and the San Benito Formation within the USGS Hollister Quadrangle as MRZ-3: areas where the significance of mineral deposits cannot be evaluated from existing data. These MRZ-3 areas generally contain alluvial deposits of sand and gravel, but resource calculations cannot be made because of inadequate subsurface data. Without site-specific soil borings, it is not possible to determine whether any proposed Program facilities in these two geologic formations would result in the loss of locally or regionally important aggregate resources. Therefore, this impact is considered **potentially significant**.

Mitigation Measure 3.1-5: Conduct Soil Sampling in Areas Zoned MRZ 2 and MRZ 3 and Locate Facilities Outside of Areas that have Important Mineral Resource Deposits.

Prior to construction of proposed Program facilities that would be located in areas zoned MRZ-2 or MRZ-3, the project proponent shall retain a California-registered geotechnical or soils engineer to analyze site-specific soil core samples. Based upon the testing results, the geotechnical or soils engineer shall make a determination as to whether an economically-viable source of aggregate minerals is present in the location proposed for Program element or project construction. If none is present, then no additional mitigation is required. In the event that an economically-viable source of aggregate minerals is present, the project proponent shall notify CDMG, and the approximate horizontal and vertical extent of available aggregate resources shall be delineated by the geotechnical or soils engineer. If feasible, the project proponent shall move the proposed facility to a location that does not contain important mineral resources. This mitigation measure does not apply to Program-related pipelines or wells because the amount of mineral resources that would be lost, if any, would not result in a significant loss of the overall resource.

Implementation of Mitigation Measures 3.1-5 would reduce potentially significant impacts on regional designated mineral resources because it would determine if important minerals actually exist and if they do, then (1) CDMG would have the opportunity to improve its understanding of potential mining resources in the area and (2) to the extent feasible, Program elements could be relocated to areas that do not have important mineral resources. Implementation of this mitigation measure would not reduce this impact to a less-than-significant level because there remains the chance that relocating a facility may not be feasible. Areas under consideration for siting of a new WTP may contain important mineral resources. Water treatment plant siting is based on a number of factors including elevation and conveyance considerations that limit the viable locations and options for relocation. Therefore, this impact is **significant and unavoidable**.

3.1.5 RESIDUAL SIGNIFICANT IMPACTS

Because implementation of Mitigation Measure 3.1-5 would not reduce the significance of the potential loss of important mineral resources, Impact 3.1-5, “Possible Loss of Mineral Resources–Construction Aggregate” is considered significant and unavoidable. Therefore, even with implementation of all mitigation measures specified above, some residual significant impacts could occur.

This page intentionally left blank.

3.2 WATER RESOURCES

3.2.1 ENVIRONMENTAL SETTING

HYDROLOGY

This section discusses water levels and hydrologic conditions in the PEIR study area, including both surface and groundwater. Hydrologic features of the study area, including the San Benito River, Pacheco Creek, San Justo Reservoir, Santa Ana Creek, Arroyo Dos Picachos, and Arroyo de las Viboras, are shown on Figure 1-2, in Chapter 1, "Introduction." Flooding and drainage are also described in this section.

Surface Water

Pajaro River Watershed

The Pajaro River Watershed is approximately 1,300 square miles in size and includes portions of Santa Cruz, Santa Clara, San Benito, and Monterey counties. The San Benito River is the largest tributary to the Pajaro River and it serves as the major route for surface flow and drainage throughout the watershed. The source of the Pajaro River is San Felipe Lake, also known as Upper Soap Lake.

Average monthly stream flows for the San Benito River, Pacheco Creek, and the Pajaro River in the vicinity of the study area are provided in Table 3.2-1.

Table 3.2-1
Average Monthly Stream Flows for Major Streams in the Pajaro River Watershed

	Average Monthly Stream Flow (cubic feet per second)			
	San Benito River		Pacheco Creek	Pajaro River
Month	At State Route (SR) 156/ 4th Street near Hollister (USGS Gage 11158600)[a]	Near Hollister at Mitchell Road, west of SR 156 (USGS Gage 11158500)[b]	At Dunneville (San Felipe Road and Dunne Street) (USGS Gage 11153040)[c]	At Chittenden (by SR 152 at Walnut Ave) (USGS Gage 11159000)[d]
January	60	72	188	422
February	143	104	262	599
March	122	113	202	448
April	41	71	123	249
May	14	17	23	53
June	6.1	13	2.5	17
July	4.2	9.2	0.81	8.6
August	4.1	8.8	0.49	6.8
September	3.8	6.4	0.08	6.7
October	2.3	3.8	0.38	6.0
November	5.3	5.8	12	30
December	16	29	105	142

Notes: USGS = U.S. Geological Survey
[a]Stream flow data for water years 1971 to 2009
[b]Stream flow data for water years 1950 to 1983
[c]Stream flow data for water years 1982 to 1985
[d]Stream flow data for water years 1940 to 2009
Source: USGS 2010

San Benito River

The San Benito River flows between the Diablo Range on the east and southeast and the Gabilan Range on the west. The San Benito River is intermittent in some parts of the Gilroy-Hollister Valley Groundwater Basin and flows through the southern portion of the basin before reaching the Pajaro River, of which it is the largest tributary. The San Benito River has a drainage area of approximately 661 square miles (SBCWDWRA 2003:42). During the dry season, flows in the San Benito River are largely governed by releases from Hernandez Reservoir.

Pacheco Creek Watershed

The Pacheco Creek Watershed is a subwatershed of the larger Pajaro River Watershed. Pacheco Creek flows from the Diablo Range to the Pajaro River and crosses Santa Clara and San Benito counties. The three main tributaries of the watershed include Santa Ana Creek, Arroyo de los Viboras, and Dos Picachos, which flow to the Tequisquita Slough before joining Pacheco Creek above San Felipe Lake.

Flooding and Drainage

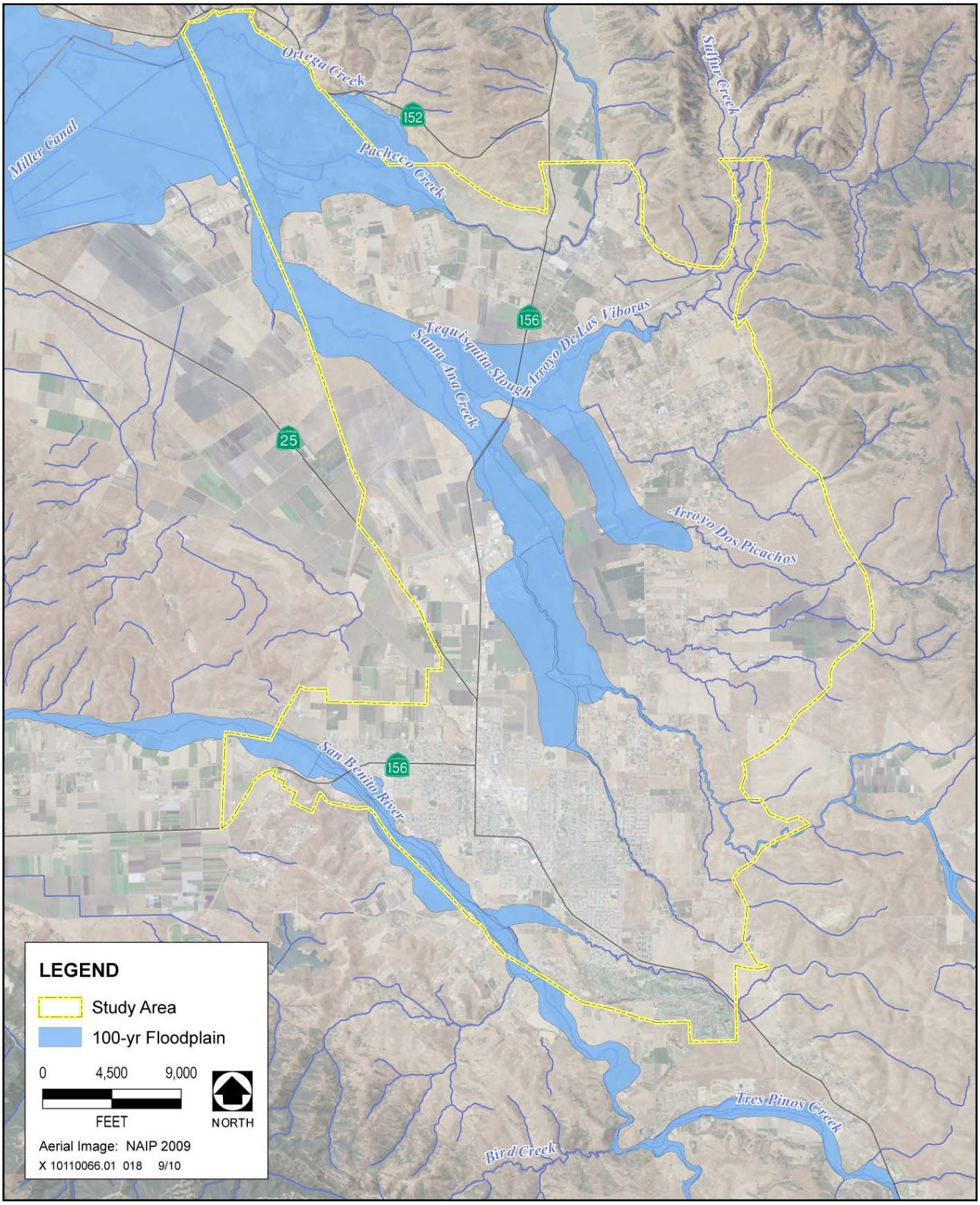
The vast majority of land in the HUA drains overland to local creeks or to the San Benito River. Drainage ditches are also maintained in some agricultural fields. Developed urban and rural residential areas are served by a storm drainage system, which consists of storm drain inlets, pipelines for conveyance of storm water, and storm water outfalls to provide for local storm water drainage. Storm water drainage is handled by individual cities in San Benito County. Although agriculture continues to be the predominant economic activity in the County, a substantial amount of new development has resulted in the loss of agricultural land and has created constraints on the City's infrastructure, including storm water management facilities that provide flood control for the HUA (City of Hollister 2004:4). Although urbanization has increased runoff from frequent events (2- and 25-year events), it has had little impact on runoff from large storms (over 50-year events) (PRWFPA 2003:ES-7 and ES-8).

A flood insurance study for the Hollister area, commissioned by the Federal Emergency Management Agency (FEMA) and completed in 1991, addresses floodplain patterns and floodplain management. The City of Hollister 2005 General Plan identifies the areas on both sides of the San Benito River and portions of Santa Ana Creek as being within the 100-year flood zone (City of Hollister 2005:5-3, Map 14). San Benito County flood zone mapping also indicates areas along San Benito River, Santa Ana Creek, Tres Pinos Creek, Pajaro River, Pacheco Creek, and San Juan Creek and by San Felipe Lake as being located within FEMA Flood Zone A (County of San Benito 2009b). Areas identified as FEMA Flood Zone A are subject to inundation by the 100-year flood event (1-percent-annual-chance flood events). FEMA Flood Zones are shown on Figure 3.2-1.

Groundwater

Groundwater supply in the HUA is part of the Gilroy-Hollister Valley Groundwater Basin (California Department of Water Resources [DWR] Basin Number 3-3.03), which underlies the broad valley that extends from the northern part of San Benito County into the southern part of Santa Clara County. The basin is located between the Diablo Range on the east and the Gabilan Range and the Santa Cruz Mountains to the west. It is bounded on the southwest by the San Andreas Rift Zone. The northern portion is drained toward Monterey Bay by the Pajaro River and its tributaries. The southern portion is drained by the San Benito River and its tributaries.

The Gilroy-Hollister Valley Groundwater Basin is comprised of a sedimentary sequence consisting mainly of clays, silts, sands, and gravels, ranging in age from Tertiary to Holocene that contains the principal aquifers underlying Hollister and San Juan Valleys (DWR 2004; HDR 2008:2-1). The Calaveras, San Andreas, and Sargent are the major faults that bound the groundwater basin and are relatively impermeable barriers to groundwater flow. Three geologic units are present in the subbasin: Alluvium, which consists of sediment that is generally coarser near the fringes of the subbasins and finer toward the flatter central portion of the valley; Older Alluvium, which consists of deposits that are weakly consolidated interbedded gravel, sand, and mudstones; and the Panoche Formation, which consists of deposits that are consolidated, thick interbedded sand and gravels and



Source: FEMA 1991 adapted by AECOM in 2010

FEMA Floodzone Map **Figure 3.2-1**

mudstones (Bookman-Edmonston Engineering 2006:ES-2). San Benito Gravels are included in the Older Alluvium unit and constitute the main source of groundwater within the Hollister Valley subbasin.

DWR divides the Gilroy-Hollister Valley Groundwater Basin into three subbasins: the Bolsa, Hollister Valley, and San Juan (Kennedy/Jenks Consultants 2008:2-3). San Benito County Water District (SBCWD) further divides the Gilroy-Hollister Valley Groundwater Basin into seven different subbasins: San Juan, Hollister West, Hollister East, Bolsa, Pacheco, Bolsa Southeast, and Tres Pinos. The majority of the HUA is within the DWR Hollister Valley subbasin and SBCWD's Hollister East, Hollister West, and Tres Pinos subbasins (Kennedy/Jenks Consultants 2008:2-4). The SBCWD subbasin classification is used throughout the remainder of this section of the PEIR. Figure 3.2-2 shows the SBCWD groundwater subbasins.

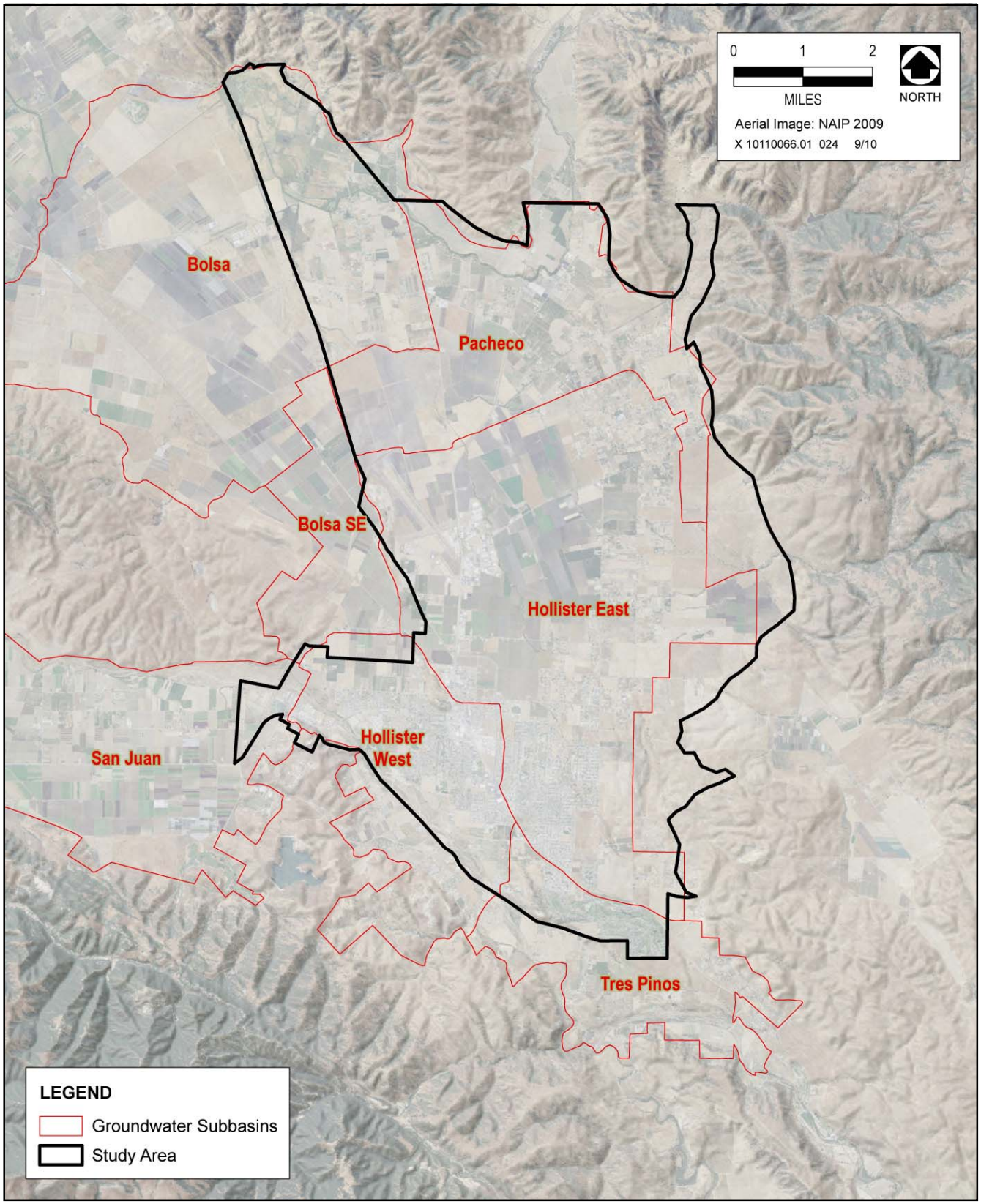
Groundwater Wells in the Hollister Urban Area

The City and the Sunnyslope County Water District (SSCWD) extract groundwater from the Gilroy-Hollister Valley Groundwater Basin for municipal and industrial (M&I) uses within the HUA. The City maintains one inactive and five active municipal groundwater wells in the HUA that are between 500 and 645 feet deep. Four active groundwater wells (City Wells 2, 4, 5, and 6) are located along the southern boundary of the HUA and the San Benito River, and one inactive groundwater well (City Well 1) and one active groundwater well (City Well 3) are located in the northern portion of the HUA (HDR 2008:2-13). City Well 1 has been inactive for several years because of high nitrate levels, and City Well 6 pumps sand and has water quality issues. SSCWD has five municipal groundwater wells (SSCWD Wells 2, 5, 7, 8, and 11) that are generally located to the east of the City's groundwater wells along the southern boundary of the HUA (HDR 2008). The SSCWD groundwater wells range from 336 to 550 feet deep. As shown in Table 3.2-2, the groundwater wells within the HUA have a maximum combined pumping capacity of approximately 15.45 million gallons per day (mgd). The location of these groundwater wells is shown in Figure 2-4 in Chapter 2, "Program Description."

Table 3.2-2
Existing Municipal and Industrial Wells in the HUA

Groundwater Well	Maximum Pumping Rate (mgd)
City of Hollister[a]	
Well 2 (Bundeson)	2.05
Well 3 (Fallon)	1.34
Well 4 (South)	2.40
Well 5 (Nash)	2.63
Well 6 (Airline)	0.63
Total	**9.05**
SSCWD	
Well 2 (Southside)	1.37
Well 5 (Ridgemark)	1.22
Well 7 (Enterprise)	0.79
Well 8 (Ridgemark)	1.15
Well 11 (Lico)	1.87
Total	**6.4**
Total HUA Groundwater Pumping Capacity	**15.45**

Notes: mgd = million gallons per day; afy = acre-feet per year; actual usage is less than maximum pumping rate.
[a]Well 1 (San Felipe) is inactive and was not included in the existing groundwater supply listing.
Source: HDR 2008



Source: GEI 2010

Groundwater Subbasins **Figure 3.2-2**

There are numerous private groundwater wells in the HUA. Approximately 150 local small water systems (LSWS) supply domestic water to various communities in the Gilroy-Hollister Valley Groundwater Basin, each with one or two groundwater wells for water supply. Four LSWS are located in the HUA and an additional 10 groundwater wells are located in close proximity. These systems serve residents of mobile home parks, schools, and neighborhoods. In addition, numerous agricultural groundwater wells are located throughout the HUA (Kennedy/Jenks Consultants 2008:2-19).

Overall Groundwater Levels

SBCWD's groundwater level monitoring program involves quarterly measurement of over 100 wells. Groundwater elevations for October 2009 showed that groundwater elevations are highest in the Tres Pinos subbasin to the southeast and lowest in the Bolsa subbasin to the northwest, where pumping depression results in elevations as low as 80 feet above mean sea level (msl). High groundwater levels were found in the western part of the San Juan subbasin, the Pacheco subbasin, and the northern part of the Hollister East subbasin, where flowing artesian wells are present in some places.

High Groundwater

High groundwater is present in the Pacheco, the eastern portion of the Bolsa, and northern portion of the Hollister East groundwater subbasins. When groundwater levels approach or reach the ground surface, saturated soils are created that can impair crop growth, weaken the foundations of structures, and can impede the proper functioning of septic system leachfields. High groundwater is present as a result of three different conditions: (1) perched water occurs in coarse-grained sediments that are underlain by near-surface clay and silt sequence; (2) high groundwater is present in the silt and clay sequence, above the low permeability confining bed; and (3) groundwater is migrating upward across the leaky confining bed from underlying confined aquifers at a relatively slow rate, about 320 afy (Bookman-Edmonston Engineering 2006:ES-3).

Groundwater contours and water quality show the sources of the high groundwater in the confined aquifer to be from the Pacheco Creek subbasin and Arroyo de las Viboras. There is a plume of water with low total dissolved solids (TDS) 300 to 800 milligrams per liter (mg/L) and boron (less than 0.80 mg/L) emitting from these areas and extending into the subbasin (Bookman-Edmonston Engineering 2006:ES-4). The water in the unconfined aquifer is similar, with groundwater recharge from the east and from Pacheco Creek. The perched water contains high concentrations of TDS and boron (up to 18 mg/L), suggesting the water is from irrigation.

The 2006 Draft Occurrence and Management of High Groundwater North Area report was prepared for SBCWD to define the geologic controlling features creating high groundwater conditions in the North County subbasins, locate the recharge areas, assess the hydraulic characteristics and water quality in each aquifer, and propose management options to lower groundwater levels.

It is unknown at this time if surface and groundwater in the area of high groundwater interact. Pacheco Creek has incised within 2 to 4 feet of the bottom of the underlying confining clay layer and, if the creek penetrates through the clay layer, the confined aquifer will discharge to Pacheco Creek (GEI Consultants 2009:6). At this time, however, it is unknown if the confining clay layer has been penetrated.

Recharge

Groundwater in the basin is recharged by percolation of precipitation, infiltration by streams, return flows from irrigation, wastewater percolation, and subsurface inflow. The Hernandez and Paicines reservoirs are operated to store local runoff and release it during the dry season, to replenish groundwater along the San Benito River and Tres Pinos Creek. Releases from Hernandez Reservoir have ranged between 3,500 afy and 26,300 afy, and although Paicines Reservoir can have no releases in some years, its releases have averaged 1,357 afy (SBCWD 2009:10).

The use of imported Central Valley Project (CVP) surface water, beginning in June 1987, has stabilized groundwater levels and, in some locations, particularly in the Bolsa and San Juan subbasins, problematic high groundwater conditions have been created. Percolation of effluent from the wastewater treatment plants has remained relatively steady since 1994; however, it has been decreasing gradually in recent years as a result of the implementation of water conservation measures and the subsequent decrease in wastewater effluent quantity. The percolation of CVP water has been reduced since 1997 in response to groundwater level recovery and limited CVP imports. The amount of wastewater percolation is expected to further decrease with the completion of the new wastewater treatment plant, as an increasing amount of treated wastewater effluent can be recycled and used for irrigation (SBCWD 2009:14).

Water Supply

Three sources provide water supply for the municipal, rural, and agricultural land uses in San Benito County. These are local groundwater pumped from wells, local surface water stored in and released from Hernandez and Paicines reservoirs, and imported CVP water. Water supply treatment and distribution facilities in the HUA are operated by the City and SSCWD. Facilities for water supply treatment and distribution include the Lessalt WTP, treated water storage tanks, pipelines, and pump stations. The existing water treatment and distribution facilities are discussed below and shown in Figure 2-4 in Chapter 2, “Program Description.”

Groundwater Pumping

Groundwater conditions and wells in the Study Area are described in the preceding section. Local groundwater is an important water source for M&I and agricultural uses in the Study Area.

In 2004, the City and SSCWD pumped 3,000 afy and 2,400 afy of groundwater, respectively, for a total of 5,400 afy. This total accounted for 64% of the M&I groundwater supply in the HUA. Agricultural groundwater pumping was approximately 2,800 afy in 2004, which accounted for 37% of the groundwater pumped in the HUA (Kennedy/Jenks Consultants 2008:2-17).

Individual homeowners with a well or water systems with less than five connections are considered domestic water users by the City. SBCWD keeps records of wells drilled in the area, but not how many of the wells remain active or how much they pump annually. An estimate of all groundwater wells used for domestic purposes (excluding SSCWD and the City) was based on SBCWD metering records. In 2004, approximately 855 afy was pumped for domestic users in the HUA (Kennedy/Jenks Consultants 2008:2-19).

Local Surface Water Supplies

The primary sources of local surface water supply are Hernandez and Paicines reservoirs. Both reservoirs are owned and operated by SBCWD. Hernandez Reservoir has a capacity of 17,200 acre-feet (af) and is located 43 miles southeast of the City on the San Benito River (HDR 2008:2-6).

Paicines Reservoir is an offstream reservoir with a capacity of 2,870 af, located between the San Benito River and Tres Pinos Creek. Paicines Reservoir is filled by water diverted from the San Benito River, with some of the diversions consisting of natural runoff and some consisting of rediversion of water stored and released from Hernandez Reservoir (HDR 2008:2-6).

Central Valley Project Water

SBCWD purchases imported CVP water from the U.S. Bureau of Reclamation (Reclamation). The CVP is a multipurpose project operated by Reclamation that stores and transfers water from the Sacramento, San Joaquin, and Trinity River basins primarily to the Sacramento and San Joaquin valleys. Sources of CVP water include Lake Shasta, Whiskeytown Reservoir, Clair Engel Lake, Folsom Lake, New Melones Reservoir, Millerton Lake,

and San Luis Reservoir. Imported surface water from the CVP is supplied to the HUA from the Delta through the San Luis Reservoir, the San Felipe Division facilities, and the Hollister Conduit (HDR 2008:2-7)

The current SBCWD contract with Reclamation is for a total supply of 43,800 afy, of which 35,550 afy is for agricultural use and 8,250 afy is for M&I use in normal water years. In a single critically dry year, the M&I supplies may be reduced to 50% of the contract amount, and in multiple dry years, the M&I supplies may be reduced to approximately 30% of the contract amount (HDR 2008:2-10). .

Lessalt Water Treatment Plant

The Lessalt WTP, a jointly-owned facility between the City and SSCWD, was placed into operation in 2002. The plant was designed, permitted, and constructed with a rated capacity of 3 mgd. Because of hydraulic constraints, process limitations, and reductions in CVP water availability; the Lessalt WTP has operated at an average rate of less than 1.6 mgd. In 2008, the Lessalt WTP produced 1,323 afy, an average annual production rate of 1.18 mgd. (HDR 2008:2-17; HDR 2010:3-1.)

Water Storage Facilities

The City maintains four treated water storage tanks within the HUA with a combine storage capacity of 7.7 million gallons (MG) (HDR 2008:2-18). Two 1.0-MG tanks are located on Fairview Road in the eastern portion of the HUA. These tanks are equally shared between the City and SSCWD. Two additional water storage tanks are located in the west-central portion of the HUA and have a total capacity of 6.7 MG.

SSCWD maintains three water storage tanks in the HUA. Two of the tanks are located in the Ridgemark area in the southwestern portion of the HUA and have a combined storage capacity of 1.5 MG. In addition, SSCWD uses 1.0 MG of the Fairview Road water storage tanks. In total, SSCWD has a water storage capacity of 2.5 MG in the HUA. (HDR 2008:2-21.)

Water Transmission and Distribution

The City and SSCWD maintain over 128 miles of water mains for transmission and distribution. The SSCWD system is connected to the City's water distribution system at three intersections: the Hillcrest Road/Memorial Driver intersection, the Sunnyslope Road/Memorial Drive intersection, and the Sunset Drive/Memorial Road intersection. Water can be transferred in either direction at the Memorial Booster Pump Station, located on Hillcrest Road. However, water can only be transferred from SSCWD to the City's system at the Sunnyslope Road/Memorial Drive and the Sunset Drive/Memorial Road intersections. (HDR 2008:2-21.)

WATER QUALITY

The primary beneficial uses of water in the study area are M&I, agricultural, and wildlife habitat. The primary constituents of concern for M&I users of water in the study area include salinity (TDS),[1] nitrates, and hardness (calcium and magnesium). For agricultural irrigation, the primary constituents of concern for maintaining the health of crops and soils are TDS and boron. Water quality constituents and conditions that can affect aquatic and

[1] TDS is usually not a health concern, but can be a taste, odor, and color concern for drinking water. At levels over 500 mg/L, TDS can cause gastrointestinal irritation to consumers unaccustomed to these levels. Excess sodium may affect those restricted to low sodium diets or those suffering from toxemia. Other concerns include scaling on sinks and fixtures, leaving white spots on cars, deposits in and corrosion of hot water heaters and pipes, and reduced effectiveness of detergent and shampoo. The buildup in water-using appliances can shorten appliance life and increase costs to consumers. Preliminary estimates indicate that local groundwater supplies may reduce the life expectancy of residential appliances by up to 25%, as compared with a water supply having a TDS level of 500 mg/L. Other residential costs include home softeners, bottled water, and increased use of soap and detergents.

terrestrial organisms include elevated concentrations of heavy metals, nutrients (nitrogen and phosphorus), suspended sediment, and turbidity, as well as elevated water temperature or decreased dissolved oxygen content.

Surface Water

Pajaro River Watershed

Historical and ongoing land uses such as agricultural production, residential and commercial development, and industrial activities have had an adverse effect on surface water quality within the Pajaro River Watershed. Fertilization of croplands has introduced elevated levels of nitrate and other nitrogen compounds to both surface and groundwater, and evapotranspiration by agricultural crops has increased the salinity of water that percolates below the root zone to groundwater (SBCWDWRA 2003:56). Grazing practices and encroachment of croplands and urban development has reduced the coverage of riparian habitat along many streams and wetlands and has introduced pathogens and elevated levels of nutrients to waterways.

Mining activities within San Benito County have substantially altered geomorphology of the riverbed in some cases, resulting in accelerated erosion and sedimentation (SBCWDWRA 2003:56). Mining activities include sand and gravel mining in the lower San Benito River and Tres Pinos Creek. Abandoned mines in the Upper San Benito and Clear Creek subbasins are also a source of mercury and other heavy metals. Being an active seismic area, many of the steep upper watershed areas have active landslides resulting from the weakened nature of the bedrock from tectonic deformation. These landslides have been sources of large, uncontrollable sediment deposition (SSCWD 2009:35). The construction of unimproved roads in the steep upper watershed areas has also increased erosion and sedimentation throughout the watershed.

In urban and suburban parts of the Pajaro River Watershed, nonpoint source pollutants are washed from streets, constructions sites, parking lots, and other exposed surfaces into storm drains. Urban contaminants typically accumulate during the dry season and may be washed off when adequate rainfall returns in fall. The amount of contaminants discharged in storm water from developed areas varies, based on a variety of factors including the intensity of urban uses such as vehicle traffic, types of activities occurring onsite (e.g., office, commercial, and industrial), types of contaminants used onsite (e.g., pesticides, herbicides, cleaning agents, and petroleum byproducts), contaminants deposited on paved surfaces, and the amount of rainfall.

The Central Coast Regional Water Quality Control Board (RWQCB) has identified the Pajaro River as an impaired water body under Section 303(d) of the Clean Water Act for boron. The Pajaro River, including Llagas Creek, Rider Creek, and the San Benito River, was listed as impaired for siltation in 1998, and an amendment to the Basin Plan to establish total maximum daily loads (TMDL) and a land disturbance prohibition for sediment in Pajaro River was established on May 3, 2007. The Pajaro River above Llagas Creek has also been identified as impaired for fecal coliform. The sources of fecal coliform are identified as pasture grazing, natural sources, and nonpoint sources. The TMDL for fecal coliform has been approved by the State Water Resources Control Board (SWRCB) and is projected to be adopted in 2011; the TMDL for boron is expected to be adopted in 2019 (SSCWD 2009:31).

San Benito River

Water quality monitoring data are somewhat limited within the Pajaro River Watershed. In San Benito River water, magnesium and sodium are important constituents contributing to hardness and TDS, respectively. Limited SBCWD water quality sampling of the San Benito River indicates an average TDS level of approximately 1,400 mg/L for the lower portion of the river, with samples ranging from 460 mg/L to 2,144 mg/L (SBCWDWRA 2003:57). The sampling indicates a trend toward increasing TDS with distance downstream, with the highest measurements obtained just upstream of Highway 101 near the confluence with the Pajaro River. Mercury has also been reported in the San Benito River above Hernandez Reservoir as a result of historical mercury mining in the upper portions of the watershed. The San Benito River is listed as an impaired waterbody for fecal coliform.

Imported CVP Water

Imported CVP water is generally of high quality, with TDS concentrations ranging from approximately 200 to 300 mg/L and a hardness concentration of approximately 110 mg/L as calcium carbonate ($CaCO_3$). Monitoring of CVP water entering the Lessalt WTP indicated that metals were well below applicable drinking water limits and were not even detected in some cases, boron was 0.2 mg/L, nitrate was not detected in the majority of samples, and volatile organic compounds (VOC), synthetic organic chemicals, and pesticides were not detected (SBCWDWRA 2003:57).

Groundwater

In general, groundwater quality in the Gilroy-Hollister Valley Groundwater Basin is marginally acceptable for potable and irrigation use, but its levels of salinity, sodium, chloride, sulfate, nitrate, boron, arsenic, hardness, and trace elements can occasionally exceed drinking water standards (SBCWDWRA 2003:57). Substantial differences between groundwater and imported surface water quality exist with regard to constituent concentrations such as TDS, hardness, and nitrates. Most of the salts in the local groundwater derive from dissolution of aquifer materials, but others are added by human activities such as agriculture and the disposal of treated wastewater.

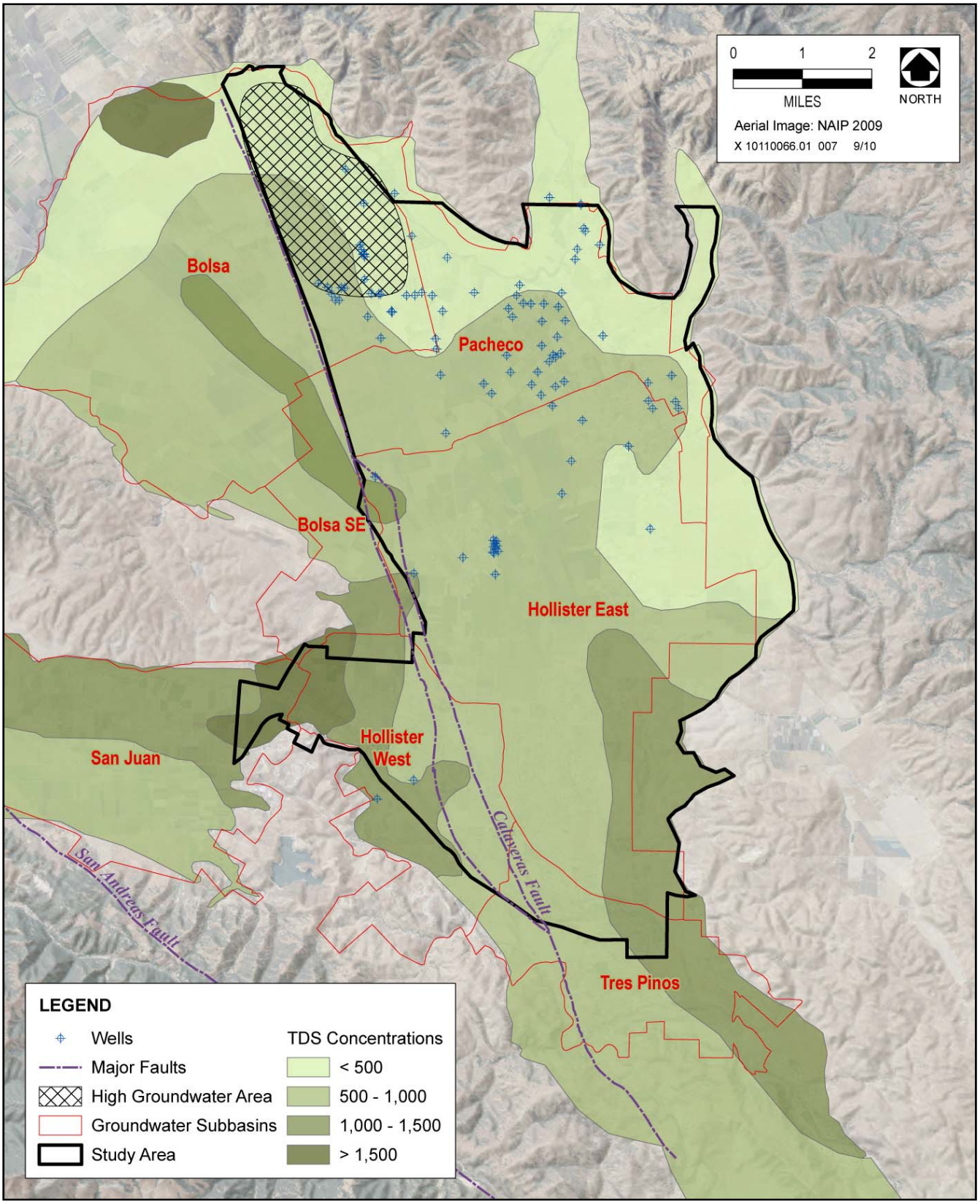
A total of 18 monitoring wells are located throughout northern San Benito County. Water quality from the majority of these wells includes TDS concentrations exceeding 500 mg/L, the recommended limit for drinking water by the California Department of Public Health (DPH). Additionally, 10 of the 18 wells have TDS concentrations exceeding 1,000 mg/L, the upper DPH limit for drinking water, including all five wells located in the San Juan subbasin (SBCWD and SCVWD 2007). Groundwater in the Hollister East and West subbasins also has high TDS concentrations and historically has been used as the M&I supply for the City. A lobe of good quality water, with a TDS of less than 500 mg/L, extends from the mouth of Pacheco Creek and Arroyo de las Viboras to the west (GEI Consultants 2009:1). Figure 3.2-3, “TDS Concentrations in Groundwater” shows TDS concentrations in the study area.

Almost all groundwater in the basin has a very high calcium and magnesium content, also called hardness. Total hardness concentrations in the groundwater have ranged from 295 to 594 mg/L as $CaCO_3$ (SBCWDWRA 2003:59).

Wastewater

Treated wastewater effluent typically has TDS concentrations of approximately 1,200 mg/L at the City’s Water Reclamation Facility (WRF) and up to 1,800 mg/L at the two WWTPs serving the Ridgemark area of the SSCWD (City of Hollister et al. 2008:1-7). The high mineral content (also called hardness) of the groundwater has resulted in common use of water softeners by residential customers. The use of residential water softeners, however, results in residuals being introduced into the wastewater stream, creating high levels of TDS. A target treated effluent TDS concentration of 500 mg/L (with a maximum limit of 700 mg/L) was established in the memorandum of understanding (MOU) to increase recycling and disposal opportunities by the year 2015.

Additional information on wastewater treatment and disposal in the HUA is provided in Section 3.8, “Utilities and Public Services.”



Note: Based on preliminary hydrogeologic feasibility study conducted by GEI.

TDS Concentrations in Groundwater **Figure 3.2-3**

3.2.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for managing water quality. The Clean Water Act of 1972 (CWA) is the primary federal law that governs and authorizes the EPA and individual states to implement activities to control water quality. The various elements of the CWA that address water quality and are applicable to the proposed Program are discussed below. Wetlands and other waters of the U.S. administered by the U.S. Army Corps of Engineers (USACE) under Section 404 of the CWA, including permits for the discharge of dredged and/or fill material into waters of the United States, are discussed in Section 3.3, "Biological Resources."

Under federal law, EPA has published water quality regulations under Title 40 of the Code of Federal Regulations (40 CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the waterbody in question, and (2) criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. In California, EPA has designated SWRCB and its nine RWQCBs with the authority to identify beneficial uses and adopt applicable water quality objectives.

National Pollutant Discharge Elimination System Permit Program

The NPDES permit program was established in the CWA to regulate M&I discharges to surface waters of the United States. A discharge from any point source is unlawful unless the discharge is in compliance with an NPDES permit. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source storm water runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

In November 1990, the EPA published regulations establishing NPDES permit requirements for M&I storm water discharges. Phase 1 of the permitting program applied to municipal discharges of storm water in urban areas where the population exceeded 100,000 persons. Phase 1 also applied to storm water discharges from a large variety of industrial activities, including general construction activity if the project would disturb more than 5 acres. For Phase 2, the NPDES storm water permit regulations that became effective in 2003 require that NPDES permits be issued for construction activity of projects that disturb 1 acre or more. Phase 2 of the municipal permit system (known as the NPDES General Permit for small Municipal Separate Storm Sewer Systems [MS4]) requires small municipal areas of less than 100,000 persons to develop storm water management programs. The nine RWQCBs in California are responsible for implementing the NPDES permit system (see additional information below).

Section 401 Water Quality Certification or Waiver

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain water quality certification from the RWQCB stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirement is delegated by the SWRCB to the nine RWQCBs. The proposed Program is under the jurisdiction of the Central Coast RWQCB.

Federal Antidegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses and water quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- existing in-stream uses and the water quality necessary to protect those uses shall be maintained and protected;
- where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and
- where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Safe Drinking Water Act

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA's primary and secondary maximum contaminant levels (MCLs), which are applicable to treated water supplies delivered to the distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act, enacted in 1986, established an accelerated schedule for setting MCLs for drinking water.

EPA has delegated to the DPH the responsibility for administering California's drinking water program. DPH is accountable to EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by EPA. The applicable state primary and secondary MCLs are set forth in Title 22, Division 4, Chapter 15, Article 4 of the CCR (see "Title 22," below for further discussion). Provisions of the Safe Drinking Water Act would apply to water supplies being sought for the proposed Program.

Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of waterbodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. EPA must either approve a TMDL prepared by the state or, if it disapproves the state's TMDL, issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list will be remediated.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

In California, the SWRCB has broad authority over water-quality control issues for the state. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the federal government under the CWA. Other state agencies with jurisdiction over water quality regulation in California include DPH (for drinking water regulations), the California Department of Pesticide Regulation, the California Department of Fish and Game (DFG), and the Office of Environmental Health and Hazard Assessment.

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt Basin Plans for all areas in the region and establish water quality objectives in the plans. California water quality objectives (or "criteria" under the Clean Water Act) are found in the Basin Plans adopted by the SWRCB and each of the nine RWQCBs. The Central Coast RWQCB is responsible for the regional area in which the proposed Program is located.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act of 1969 is California's statutory authority for protecting water quality. Under the act, the state must adopt water quality policies, plans, and objectives that protect the state's waters for the use and enjoyment of the people. The act sets forth the obligations of SWRCB and the RWQCBs to adopt and periodically update water quality control plans (Basin Plans). Basin Plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The act also requires waste dischargers to notify the RWQCBs of their activities through the filing of Reports of Waste Discharge (RWD) and authorizes SWRCB and the RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals. The RWQCBs also have authority to issue waivers to RWD and/or WDRs for broad categories of "low threat" discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

NPDES Permit System and Waste Discharge Requirements for Construction

The SWRCB has adopted specific NPDES permits for a variety of activities that have potential to discharge wastes to waters of the state. The SWRCB's statewide stormwater general permit for construction activity (Order 2009-0009-DWQ) is applicable to all land-disturbing construction activities that would disturb more than 1 acre. All of the NPDES permits involve similar processes, including submittal to the Central Coast RWQCB of notices of intent (NOI) to discharge, and implementation of Stormwater Pollution Prevention Plans (SWPPPs) that include best management practices (BMPs) to minimize those discharges.

Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce nonstormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of permanent post construction BMPs that would remain in service to protect water quality throughout the life of the project. NPDES permits require the implementation of design and operational BMPs to reduce the level of contaminant runoff. Types of BMPs include, but are not limited to, implementing erosion-control measures, such as silt fences, staked straw bales or wattles, sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation; establishing permanent vegetative cover to reduce erosion in disturbed areas by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration; and using drainage swales, ditches, and earth dikes to control erosion and runoff.

Discharges subject to the SWRCB NPDES general permit for construction activity are subject to development and implementation of a SWPPP. The SWPPP includes a site map and description of construction activities and identifies the BMPs that would be employed to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. The SWPPP also specifies the chemicals likely to be used during construction that could be present in storm water drainage and nonstormwater discharges. The SWPPP will also specify spill prevention and contingency measures, identify measures to prevent or clean up spills of hazardous materials used for equipment operation and hazardous waste, and identify emergency procedures for responding to spills. All NPDES permits also have a sampling and monitoring program that meets the requirements of SWRCB Order 2009-0009-DWQ, to ensure that the BMPs are effective.

The SWPPP identifies personnel training requirements and procedures to be used to ensure that workers are aware of permit requirements and proper installation and performance inspection methods for BMPs specified in the SWPPP. The SWPPP also identifies the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP. All construction contractors must retain a copy of the approved SWPPP on the construction site at all times.

NPDES Industrial Stormwater Permit System

To minimize the impact of stormwater discharges from industrial facilities, the NPDES program also includes an industrial stormwater permitting component that covers 10 categories of industrial activity that require authorization under an NPDES industrial stormwater permit for stormwater discharges. The General Industrial Permit (Order 97-03-DWQ) requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT). The General Industrial Permit also requires the development of a SWPPP, a monitoring plan, and annual reports.

Water Quality Control Plan for the Central Coast Region

The Water Quality Control Plan for the Central Coast Region (Basin Plan) was first adopted in 1975 and the last major revision was adopted in 1994. The Basin Plan identifies the beneficial uses of waterbodies and provides water quality objectives and standards for waters of California's Central Coast Region. The study area is located within the Pajaro River Hydrologic Unit. State and federal laws mandate the protection of designated "beneficial uses" of waterbodies. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050[f]). Additional protected beneficial uses included in the Basin Plan for the proposed Program vicinity include commercial and sport fishing, groundwater recharge, and freshwater replenishment.

A summary of water quality objectives in the Basin Plan for the San Benito River is presented in Table 3.2-2. These objectives are based on preservation of water quality and serve as a baseline for evaluating water quality management. Table 3.2-3 also presents specific median groundwater objectives for the Hollister sub-area of the Pajaro River subbasin.

Table 3.2-3
Central Coast Region Basin Plan Surface Water Quality Objectives (annual mean values)

Constituent	San Benito River (mg/L)	Hollister subarea of the Pajaro River Subbasin (mg/L)
Total dissolved solids	1,400	1,200
Chloride	200	150
Sulfate	350	250
Boron	1.0	1.0
Sodium	250	200
Nitrogen	-	5

Notes: mg/L = milligrams per liter
"-" = objective not provided in the Basin Plan
Source: Compiled by AECOM in 2010 based on data from the Central Coast RWQCB 1994:III-13 (Table 3-7) and III-15 (Table 3-8)

The Basin Plan, Section VI.B.2. Municipal Wastewater Management—Pajaro River Hydrologic Unit, also states, "Land disposal of wastewaters in the Hollister region must be monitored carefully to assure groundwater quality is protected. Source control of salt must be stressed to reduce effluent salinity to levels acceptable for disposal to local ground waters" (Central Coast RWQCB 1994:IV-16).

Title 22 Standards

Article 4, Section 60310 of Title 22 establishes use area requirements for recycled water use. Requirements in this section of Title 22 include, for example, restrictions on the recycled water irrigation within a certain distance of domestic water supply wells, confining recycled water to authorized use areas, posting signs to inform the public in areas where recycled water is in use, and prohibitions on runoff from recycled water use areas unless the runoff does not pose a public health threat and is authorized by the regulatory agency (DPH 2009:20-22, 24-26, 27).

Other DPH requirements for the production and use of recycled water include preparing an engineer's report on the production, distribution, and use of the recycled water; establishing requirements for dual plumbed recycled water systems; and specifying other requirements designed to ensure that recycled water use does not adversely affect public health

California MCLs may be found in Title 22 of the CCR, Division 4, Chapter 15, Domestic Water Quality and Monitoring. The DPH is responsible for Title 22 of the CCR (Article 16, Section 64449) as well, which also defines secondary drinking water standards, established primarily for reasons of consumer acceptance (i.e., taste) rather than because of health issues.

Drinking water MCLs are directly applicable to water supply systems "at the tap" (e.g., at the point of use by consumers in their home, office) and are enforceable by DPH. California MCLs, both primary and secondary, are directly applicable to groundwater and surface water resources when they are specifically referenced as water quality objectives in the pertinent Basin Plan. In such cases, MCLs become enforceable limits by the SWQCB and RWQCBs. When fully health protective, MCLs may also be used to interpret narrative water quality objectives prohibiting toxicity to humans in water designated as a source of drinking water (MUN) in the Basin Plan. Table 3.2-2 lists the Title 22 constituent standards, as well as those for the Central Coast Basin Plan and the California Toxics Rule described above.

California State Nondegradation Policy

In 1968, as required under the federal antidegradation policy described above, SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

- Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.

- Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements, which would ensure (1) pollution or nuisance would not occur and (2) the highest water quality consistent with the maximum benefit to the people of the state would be maintained.

California Toxics Rule and State Implementation Plan

The California Toxics Rule (CTR) was issued in 2000 in response to requirements of the EPA National Toxics Rule (NTR), and establishes numeric water quality criteria for approximately 130 priority pollutant trace metals and organic compounds. The CTR criteria are regulatory criteria adopted for inland surface waters, enclosed bays, and estuaries in California that are subject CWA Section 303(c). The CTR includes criteria for the protection of aquatic life and human health. Human health criteria (water and organism based) apply to all waters with a Municipal and Domestic Water Supply Beneficial Use designation, as indicated in the Basin Plans.

The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, also known as the State Implementation Plan (SIP), was adopted by SWRCB in 2000. It establishes provisions for translating CTR criteria, NTR criteria, and Basin Plan water quality objectives for toxic pollutants into NPDES permit effluent limits, effluent compliance determinations, monitoring for 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dioxin) and its toxic equivalents, chronic (long-term) toxicity control provisions, initiating site-specific water quality objective development, and granting of exceptions for effluent compliance. The goal of the SIP is to establish a standardized approach for the permitting of discharges of toxic effluents to inland surface waters, enclosed bays, and estuaries in a consistent fashion throughout the state.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

San Benito County General Plan

The following goal and policies of the San Benito County General Plan (1992) are applicable to the proposed Program:

Open Space and Conservation Element

- **Policy 8:** Development in drainage basins. It is the County's policy to minimize development/uses within drainage basins that could alter the path of watercourses and impede groundwater recharge.

- **Policy 9:** Water quality improvement. It is the policy of the County to cooperate with the Regional Water Quality Control Board to improve water quality problems identified for the County, to maintain water quality on all drainage, and to develop policies and programs for the protection and enhancement of habitat for fish on major tributaries to the Pajaro River (San Benito River, Pacheco Creek) and water quality in the Silver Creek Watershed.

GOAL 3 Natural Resources - To provide for the conservation, development, and utilization of natural resources, including water and its hydraulic force, water quality, forests, soils, rivers and other waters, fisheries, wildlife, minerals, energy, and other natural resources.

- **Policy 31:** Wastewater treatment. Wastewater treatment systems shall be designed to ensure the long-term protection of groundwater resources in San Benito County. Septic systems shall be limited to areas where sewer services are not available and where it can be demonstrated that septic systems will not contaminate groundwater. Every effort should be made in developing and existing developed areas to reduce the use of septic systems in favor of domestic wastewater treatment. Domestic wastewater treatment systems shall be required to use tertiary wastewater treatment as defined by Title 22.

- **Policy 33:** Water conservation. To ensure more efficient use of groundwater resources it will be the policy of the County to require conservation of water resources in San Benito County and encourage inter-agency conservation to develop policies and programs for the protection and enhancement of habitat for fish on major tributaries to the Pajaro River (San Benito River, Pacheco Creek).

GOAL 7 Environmental Hazards - To discourage development in areas that are environmentally hazardous.

Seismic Safety/Safety Element

- **Policy 2:** Except for utility lines and transportation links, critical facilities and occupancies should not be located in High Hazard Areas.

City of Hollister General Plan

The following goal and policies of the City of Hollister General Plan Element (2005) are applicable to the proposed Program:

Community Services and Facilities Element

GOAL CSF1: Coordinate with other agencies and plan for the provision of adequate infrastructure, facilities, and services.

- **Policy CSF1.1:** Adequate Capabilities and Capacity of Local Public Services. Ensure that future growth does not exceed the capabilities and capacity of local public services such as wastewater collection and treatment, local water supply systems, fire and police protection, maintenance of streets and roads, local school systems, parks and recreational facilities, and landfill capacity, and ensure that public services meet Federal and State standards and are available in a timely fashion.

- **Policy CSF1.4:** Coordinate Facilities and Services Planning. Cooperate and coordinate with the County of San Benito, LAFCO, and other local agencies in the provision of infrastructure and services within the Hollister Planning Area.

GOAL CSF2 - Plan for adequate sewer and water facilities.

- **Policy CSF2.1** Sewer and Water Facilities. Coordinate with responsible districts and agencies to assure that sewer and water facility expansion and/or improvements meet federal and state standards and occur in a timely manner.

- **Policy CSF2.4** Local Water Supply System. Encourage development in those portions of the Hollister Planning Area which are already served by the local water supply systems or to which water supply systems can reasonably be extended.

- **Policy CSF2.7** Water Conservation Measures. Encourage water-conserving practices and features in the design of structures and landscaping, and in the operation of businesses, homes and institutions, and increase the use of recycled water.

GOAL CSF3 - Provide adequate drainage facilities, limit erosion, and maintain clean water.

- **Policy CSF3.3** Local, State, and Federal Standards for Water Quality. Continue to comply with local, state, and federal standards for water quality.

- **Policy CSF3.6** Education and Outreach on Water Quality Programs. Support public education regarding water pollution prevention and mitigation programs.

- **Policy CSF3.7** Pollution from Urban Runoff. Address nonpoint source pollution and protect receiving waters from pollutants discharged to the storm drain system by requiring Best Management Practices. This would include:

1. Support alternatives to impervious surfaces in new development, redevelopment, or public improvement projects to reduce urban runoff into storm drain system and creeks;

2. Require that site designs work with the natural topography and drainages to the extent practicable to reduce the amount of grading necessary and limit disturbance to natural waterbodies and natural drainage systems; and

3. Where feasible, use vegetation to absorb and filter fertilizers, pesticides and other pollutants.

Natural Resources and Conservation Element

GOAL NRC3 - Conserve and manage natural resources.

- **Policy NRC3.1** Development Practices to Conserve Resources. Promote development practices, which will result in the conservation of energy, water, minerals, and other natural resources, and promote the use of renewable energy technologies (such as solar and wind) when possible.

- **Policy NRC3.2** Resource-Efficient Organizations and Businesses. Encourage businesses, commercial property owners, apartment building owners, and nonprofit organizations to be resource, energy, and water efficient.

San Benito County Ordinance

The San Benito County Code of Ordinances (County of San Benito 2009a) includes several chapters of relevance to the proposed Program relating to flood damage prevention and protection of water quality:

Chapter 19.15: Flood Damage Prevention

§ 19.15.037 COMPLIANCE. No structure or land shall hereafter be constructed, located, extended, converted or altered without full compliance with the term of this chapter and other applicable regulations. (1966 Code, § 6E-8) (Ord. 598, § 3.3)

Groundwater Management Plan Update

The Groundwater Management Plan (GMP) Update for the San Benito County portion of the Gilroy-Hollister Valley Groundwater Basin (July 2003) was prepared to update the 1998 GMP (SBCWDWRA 2003:Appendix B). The overall objective of the GMP Update is to maintain and enhance the agricultural and economic productivity of San Benito County in an environmentally responsible manner. Specific objectives to achieve the overall goal include:

Water Quantity Objective 1: Maintain a reliable water supply for present and future users.

Water Quantity Objective 2: Integrate the management of groundwater, surface water, and imported water, according to the criteria set forth in the GMP.

Water Quality Objective 1: Provide water quality to meet both the needs of end users and the established objectives as described in the GMP.

Water Quality Objective 2: Manage water resources to meet Regional Water Quality Control Board Basin Plan and Department of Health Services water quality objectives.

The GMP Update also established water quality criteria for M&I use. The criteria are to meet primary and secondary drinking water quality objectives with emphasis on achieving the DPH Recommended Limit for Consumer Acceptance of not more than 500 mg/L of TDS and hardness of no greater than 120 mg/L. These are the same objectives contained in the MOU.

3.2.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

This analysis relies on information provided by various public agencies as well as site-specific technical planning studies generated to support the proposed Program and this PEIR. Impacts on water resources were identified by comparing existing surface water and groundwater conditions and facilities with future conditions resulting from implementation of the proposed Program. Evaluations of potential impacts on water resources are based on a review of the 2008 Hollister Urban Area Water and Wastewater Master Plan (Master Plan) (MOU Parties 2008), Hollister Area 2008 Urban Water Management Plan (Kennedy/Jenks Consultants 2008), the 2010 Coordinated Water Supply and Treatment Plan (Coordinated Plan) (MOU Parties 2010), and San Benito County Water District Annual Groundwater Report (2009), and draft *Long-Term Wastewater Management Plan for the DWTP and IWTP* (City of Hollister 2007). Impacts on water resources are primarily described with respect to the overall Program; however, where impacts specific to individual Program elements have been identified, the impacts are discussed separately.

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on Appendix G of the State CEQA Guidelines, as amended. The proposed Program was determined to result in a significant impact related to water resources if it would:

- violate any water quality standards or waste discharge requirements;
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on-site or off-site;
- create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam;
- create inundation by seiche, tsunami, or mudflow;
- require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- have insufficient water supplies available to serve the project from existing or permitted entitlements and resources, or require new or expanded entitlements.

IMPACT ANALYSIS

The study area includes existing levees and dams. Portions of San Benito County were identified in the County General Plan as being subject to inundation in the event of the failure of dams. However, the County General Plan also states that the dams located within the county are considered to be safe by the California Division of Safety of Dams (County of San Benito 1980:12). The proposed Program would not modify any levees or dams either directly or indirectly, or increase flood risk. The proposed Program would have **no impact** on levees and dams. These issues are not discussed further in this PEIR.

The study area is not located in close proximity to the ocean and no risk of inundation by tsunami exists (California Emergency Management Agency 2009). Construction of Program elements would occur on flat areas where the likelihood of mudflows is nonexistent. The proposed Program would have **no impact** on tsunamis, seiche waves, or mudflows. These issues are not discussed further in this PEIR.

The New Pipeline to Ridgemark Program element would have a **beneficial impact** on water quality during project operations, as it would allow high-quality water from the Lessalt WTP to be transferred to the Ridgemark service area, enabling SSCWD to be able to meet its WDR salinity requirement for the Ridgemark WWTP. Impacts of operation of the New Pipeline to Ridgemark are not discussed further in this PEIR.

The implementation of the non-structural solutions Program element, including the water softener ordinance, salinity education, and the requirement that new development connect to Hollister's sewer system, would have a **beneficial impact** on water quality. Implementation of the water softener ordinance would decrease the salinity of water softener discharges to the sewer system, having beneficial effects on wastewater that would ultimately be percolated or used for irrigation. Requirements for the new developments to connect to the City's sewer system would result in no new septic systems and less associated potential groundwater quality impacts. Impacts of implementation of non-structural solutions are not discussed further in this PEIR.

The expansion of recycled water facilities has been examined in previous EIRs, specifically the 2006 City of Hollister Domestic Wastewater System Improvement and the San Benito County Water District Recycled Water Project EIR (2006 EIR) and the 2008 City of Hollister Reclaimed Water Irrigation Project Supplemental EIR (2008 SEIR). The 2006 EIR described, in general, what potential environmental effects may be expected from the development of recycled water sites and the extension of water distribution pipelines, and how these impacts are to be addressed and/or mitigated. The 2006 EIR anticipated no significant and unavoidable hydrology and water quality impacts resulting from project implementation. The 2008 SEIR expanded on the 2006 EIR analysis as it related to development of specific recycled water irrigation sites. The 2008 SEIR anticipated no significant and unavoidable hydrology and water quality impacts resulting from project implementation. Mitigation measures identified in the 2006 EIR and 2008 SEIR are assumed to be implemented as part of implementation of the recycled water facilities Program elements. Impacts of implementation of recycled water Program elements are not discussed further in this section.

IMPACT 3.2-1 Potential for Temporary and Short-Term Degradation of Surface and Groundwater Quality during Program Construction. *Construction of individual Program elements within the study area could degrade water quality through erosion or the accidental release of pollutants. The project proponent of each Program element would prepare a SWPPP and implement appropriate BMPs as required by the NPDES and obtain local and DPH permits for well installation.* Less than significant.

Implementation of the proposed Program would include construction that would have the potential to degrade water quality. Program elements that do not involve ground-disturbing construction would not have measureable temporary or short-term impacts on water quality. Impacts on water quality could result from construction of the following Program elements:

- North County Groundwater Bank, including well and recharge facilities and monitoring wells;
- New Urban Groundwater Wells;
- New Surface Water Treatment Plant;
- Demineralization Facilities;
- New Treated Water Facilities, including storage tanks, pipeline connections, and pump stations;
- Expansion of City of Hollister WRF;
- Recycled Water Facilities;
- Cielo Vista Connection to City WRF (conveyance facility construction); and
- Ridgemark WWTP Upgrades.

The exact locations of the facilities for many Program elements have not been identified and the construction techniques and materials that would be used for each Program element (e.g., excavation, drilling, and dewatering) have not been established. Numerous natural and human-made surface waters exist throughout the study area, including small creeks, rivers, reservoirs, conduits, and ponds, and runoff from construction areas could drain directly to one or more of these waterbodies and result in water quality impacts.

Construction activities associated with the proposed Program, including vegetation removal, drilling, grading, staging, trenching, and excavation, would expose soils to erosive forces and might transport sediment into local drainages, increasing turbidity and degrading water quality. The grading of land and removal of vegetation would increase erosion potential. Although the majority of the study area is fairly level, potential would exist for erosion during and following construction activities that could result in siltation to local waterways. As described in Section 3.2.1.2 above, TMDLs and a land disturbance prohibition for sediment in Pajaro River, including the San Benito River and Llagas Creek, were established in 2007. A substantial increase in erosion during construction of Program elements could prevent the project proponents from maintaining compliance with the Central Coast RWQCB's TMDL.

Construction activities could also result in the accidental release of other pollutants to surface waters including, but not limited to: oil and grease, solvents, petroleum hydrocarbons, chemical substances used during construction, waste concrete, and wash water. This contaminated runoff could enter on-site drainage channels and ultimately drain off-site to downstream waterbodies, including the San Benito River and ultimately Monterey Bay. Many construction-related wastes have the potential to degrade existing water quality and beneficial uses by altering the dissolved oxygen content, pH, suspended sediment or turbidity levels, or by causing toxic effects in the aquatic environment. In addition to surface water quality, impacts to groundwater quality might occur during construction. The accidental release of pollutants to surface waters or the ground surface would have the potential to infiltrate and contaminate groundwater. Additional discussion of hazardous materials handling are provided in Section 3.10, "Public Health and Hazards."

The North County Groundwater Bank Program element might use existing percolation beds, rehabilitate existing percolation beds, or possibly construct new ones adjacent to Arroya de las Viboras, Arroyo Dos Picachos, or Pacheco Creek. Rehabilitation or construction of new percolation beds would have the potential to impact water quality through the accidental release of construction wastes (e.g., oils and similar wastes).

The project proponent for each Program element that would disturb one or more acre of land would be required to prepare a SWPPP that includes BMPs to maintain surface water quality consistent with the existing statewide NPDES stormwater permit for general construction activity. The project proponent must also prepare and submit the appropriate NOIs and any other necessary site-specific WDRs or waivers to the Central Coast RWQCB. The specific requirements of the SWPPP are described under "NPDES Permit System and Waste Discharge Requirements for Construction," in Section 3.2.2, "Regulatory Context."

During installation of new wells, surface runoff and/or cross-contamination of aquifer zones could also occur. Specifically, installation of wells on or adjacent to properties with known or unknown contamination would have the potential to affect the water quality of the underlying aquifer. As the locations of new Program wells have not

yet been determined, impacts could result from cross-contamination of aquifer zones. The project proponent would be required to comply with local and DPH permitting requirements under the federal Safe Drinking Water Act. These include completion of a Drinking Water Source Assessment and Protection report for each proposed well site and establishment of sanitary seals for potable supply wells and minimum horizontal and vertical separation of up to 10 feet from other conveyance structures that may act as cross-contamination sources.

Because the project proponent of each Program element would prepare a SWPPP and implement appropriate BMPs as required by the NPDES and obtain local and DPH permits required for well installation, impacts associated with temporary and short-term degradation of surface and groundwater quality during construction would be **less than significant.**

IMPACT 3.2-2 Potential to Degrade Surface and Groundwater Quality during Project Operations. *Operation of individual Program elements within the study area could degrade water quality through the potential discharge of contaminated runoff from paved areas. The project proponent of each Program element would implement appropriate BMPs as required by the NPDES and would comply with the NPDES permit requirements for post-construction stormwater runoff. However, because final design plans and specifications have not been prepared, implementation of the Program elements could result in potentially significant impacts on water surface and groundwater quality. Less than significant with mitigation.*

Operation of the proposed Program elements could have the potential to cause or contribute to long-term discharges of contaminants directly into receiving waters or into the storm water drainage system and ultimately to receiving waters. Impacts on water quality could result from operation of the following Program elements:

- Purchase or Transfer of Imported Water Supplies (operation impacts relating to salt loading from percolation are discussed under Impact 3.2-3),
- New Surface Water Treatment Plant and WTP Modifications,
- North County Groundwater Bank (operation impacts from percolation as well as the movement of poorer quality groundwater relating to pumping are discussed under Impact 3.2-3),
- New Urban Wells (operation impacts from the movement of poorer quality groundwater relating to pumping are discussed under Impact 3.2-4),
- Cielo Vista Connection to City WRF,
- Storage and Use of Recycled Water (operation impacts from recycled water application are discussed under Impact 3.2-5), and
- Demineralization of Urban Wells and Brine Disposal (operation impacts from brine concentration and disposal are discussed under Impact 3.2-5).

The potential discharges of contaminated runoff from paved areas and areas of new infrastructure (e.g., new water treatment plant, treated water storage facilities, wells, pipelines, and pump stations) could increase or could cause or contribute to adverse impacts on receiving water quality. Contaminants typically would accumulate during the dry season and would be washed off during the rainy season. The amount of contaminants discharged in storm water drainage from areas of new infrastructure and hardscapes would vary, based on a variety of factors including the intensity of uses, types of activities occurring onsite, types of contaminants used onsite (e.g., pesticides, herbicides, cleaning agents, and petroleum byproducts), and the amount of rainfall. The Program elements would be designed to reduce potential adverse impacts from storm water runoff. However, project-specific drainage studies and design have not yet been completed or approved by the City and/or County.

The project proponent of each Program element would implement appropriate BMPs as required by the NPDES and would comply with the NPDES permit requirements for post-construction stormwater runoff. However, because final design plans and specifications have not been prepared, it cannot be determined conclusively at this time that implementation of the Program elements would not result in impacts on water quality through the potential discharge of contaminated runoff from paved areas. This impact is **potentially significant**.

> Mitigation Measure 3.2-2: Prepare and Submit Final Drainage Plans and Implement Requirements Contained in Those Plans.
>
> Before approval of individual Program elements, detailed hydrology plans and water quality studies shall be required and prepared by a qualified engineer as necessary for each Program element. Drafts of these plans shall be submitted to the County for review and approval before the issuance of grading permits. These plans shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the project. Requirements for hydrology plans and water quality studies would differ depending on the Program elements and some Program elements may not require plans or studies to be completed if hydrologic and water quality impacts would not be anticipated.

Implementing Mitigation Measure 3.2-2 would reduce impacts to surface and groundwater quality from stormwater runoff during operations of the Program elements to **less-than-significant** levels by implementing source control programs and BMPs to control pollutants.

In addition to the potential for contaminated runoff to impact receiving water quality, the operation of new or expanded water treatment facilities would generate liquid wastes, such as backwash, washdown, sludge, and sanitary wastes during operation. These wastes may be treated onsite or discharged to the local sanitary sewer system for treatment at a WWTP prior to discharge to percolation ponds or a local surface water body. All wastes would be treated to comply with individual treatment plant permit limits, set by the RWQCB prior to discharge, and would not exceed any discharge limits designed to protect water quality. Therefore, water quality impacts associated with the operation of new or improved water treatment plants would be considered **less than significant**.

IMPACT 3.2-3 Potential to Degrade Groundwater Quality during Project Operations of the North County Groundwater Bank. *Operation of the North County Groundwater Bank could degrade groundwater quality through potential salt loading from increasing use of imported water for percolation. Pumping during operation of the North County Groundwater Bank could also degrade groundwater quality by inducing movement of poorer quality water. As groundwater conditions and well field design and modeling have not been finalized, implementation of the North County Groundwater Bank could result in potentially significant impacts to groundwater quality.* ***Potentially significant and unavoidable.***

Operation of the North County Groundwater Bank would involve both groundwater pumping and percolation of imported water supplies into the aquifer for recharge, storage, and use at later times. The use of imported water supplies for percolation at the North County Groundwater Bank could increase salt loading in the groundwater basin. Although imported water is generally of higher quality than groundwater in the study area, it would constitute a net increase in salt in the local area. The Gilroy-Hollister Valley Groundwater Basin has a single outflow mechanism—seepage into and surface water flow through the San Benito and Pajaro rivers. The basin can function as a closed basin when groundwater levels are low and no seepage exists. Currently, the basin is not functioning as a closed basin, because of the decreased pumping as a result of the use of CVP water for agricultural irrigation, and excess groundwater can be discharged through the river systems. This discharge only accounts for a relatively small volume of the groundwater (11,000 afy in WY 2005), and salts continue to accumulate in the groundwater and affect its quality (SBCWD and SCVWD 2007).

Groundwater pumping at the North County Groundwater Bank would be managed to lower the confined groundwater table in the high groundwater area to approximately 10 feet below ground surface. Improved

opportunities for the percolation and storage of high quality imported supplies and high quality water from seasonal streams would have a **beneficial impact** on groundwater quality. In addition, this Program element would reduce future groundwater contamination from septic system failures that are caused by high groundwater.

Despite the beneficial impact on groundwater levels resulting from pumping of high groundwater, described above, operation of the North County Groundwater Bank could allow for the movement of poorer quality water into the Pacheco, eastern portion of the Bolsa, and northern portions of the Hollister East subbasins, as defined by SBCWD. Water that is located upgradient of the proposed North County Groundwater Bank in the Tres Pinos and Hollister East subbasins contains moderate concentrations of salts (TDS between 500 and 1,000 mg/L) and boron between 0.70 and 1.5 mg/L. It is the intent of the Program to properly design the wellfield to provide sustainable yield and to maintain high quality groundwater conditions. If not properly designed and operated, pumping could induce movement of poorer quality water and could degrade groundwater quality in portion of the subbasin. Similarly, lowering of groundwater levels in the shallow aquifer could induce the vertical migration of poor quality water from underlying aquifers if the clay layers separating the aquifers leaked (GEI Consultants 2009:4). Operation of the North County Groundwater Bank could degrade water quality in portions of the subbasins.

Impact Conclusion

As discussed above, operation of the North County Groundwater Bank could degrade water quality through the potential for salt loading from increasing use of imported water for percolation or through induced movement of poorer quality water relating to groundwater pumping. This impact is **potentially significant**.

> Mitigation Measure 3.2-3: Implement a Groundwater Monitoring Plan to Refine Well Field Conceptual Design at the North County Groundwater Bank.
>
> The project proponent shall establish and implement a groundwater monitoring program to establish the preproject conditions of the groundwater basin with respect to salinity and water level and to monitor the impact of Program element operations on groundwater levels and water quality and respond accordingly. The groundwater monitoring program shall specify monitoring and water quality sampling frequency, parameters, and protocols and response actions, including the refinement of pumping rates or durations. The monitoring programs shall be developed and conducted in accordance with DPH and RWQCB regulatory requirements. Portions of this mitigation measure shall be implemented prior to construction and continue throughout the life of the North County Groundwater Bank to manage withdraws to prevent long-term over-draft and to avoid degradation of water quality.

Implementing Mitigation Measure 3.2-3 would reduce potential impacts to surface and groundwater levels and quality, including nearby wells, from operations of the North County Groundwater Bank. However, the wellfield for the North County Groundwater Bank has not yet been designed and pumping operations are not yet determined. Therefore, it is also not possible at this time to determine if the impact would be reduced to a less-than-significant level. Therefore, impacts to groundwater quality during operation of the North County Groundwater Bank are considered **potentially significant and unavoidable.**

IMPACT 3.2-4 Potential to Degrade Groundwater Quality during Operation of New Urban Wells. *Operation of New Urban Wells could degrade groundwater quality through inducing movement of poorer quality water. This impact could be potentially significant.* Less than significant with mitigation.

As part of the New Urban Wells Program element, one or more wells would be drilled in the HUA at locations to be determined in the future. New urban wells would be used to meet water demands as growth occurs in the HUA. With the Lessalt WTP and a new surface WTP in operation, urban wells would be used primarily to meet peak demands, particularly during summer when water demands are highest. It is anticipated that as least two new wells would be required by 2023 to meet the maximum daily demand in the event that the largest water source (well or WTP) was out of service. The location, depth, and pumping rates have not been determined. The timing

for implementation would depend in part on the actual rate of growth in water demand in the HUA. SSCWD is currently proposing construction and operation of a new well (Well #12) and is completing CEQA documentation for this project.

Because of uncertainties in existing groundwater conditions and the future location of Program wells, there is potential for the operation of these wells to degrade existing groundwater quality by inducing movement or migration of poorer quality groundwater. This impact is **potentially significant**.

> Mitigation Measure 3.2-4: Develop and Implement Operating Plan for New Urban Wells.
>
> The project proponent shall conduct modeling, analyze existing available date, and collect additional groundwater data as necessary to inform site selection and well design and operation. Prior to project implementation, an operations plan will be developed and implemented that includes ongoing monitoring of groundwater quality and level, and establishes performance criteria and actions to adaptively manage the groundwater pumping to maintain desirable conditions and impacts below significant levels.

Implementing Mitigation Measures 3.2-4 would reduce impacts to groundwater quality from the New Urban Wells Program element to **less-than-significant** levels by implementing an operating plan that includes ongoing monitoring and performance criteria to ensure that groundwater quality is not degraded during project operations.

IMPACT 3.2-5 Potential to Impact Groundwater Levels, Surface Water Levels, and Nearby Wells during Program Operations. *Operation of the North County Groundwater Bank and New Urban Wells Program elements could result in changes in groundwater levels relating to groundwater pumping and recharge. As groundwater conditions and well field design and modeling have not been finalized, implementation of the North County Groundwater Bank and New Urban Wells Program elements could result in potentially significant impacts on groundwater levels, surface water levels in Pacheco Creek, and the operation of nearby wells. Less than significant with mitigation.*

Operation of the North County Groundwater Bank could have several effects on groundwater levels. As described under Impact 3.2-2, operation of the groundwater bank would involve both groundwater pumping and percolation into the aquifer for recharge, storage, and use at later times. Groundwater pumping would be managed to lower the confined groundwater table in the high groundwater area to approximately 10 feet below ground surface.

Operation of New Urban Wells could similarly affect groundwater levels through pumping activities. New Urban Wells would be operated primarily to meet peak demands, particularly during summer when water demands are highest. As the location, groundwater conditions, pumping rate, and pumping schedule have yet to be determined, the operation of New Urban Wells could have the potential to lower groundwater levels around the area of pumping.

Operation of the North County Groundwater Bank and New Urban Wells Program elements would have the potential to affect existing wells in the vicinity of new groundwater wells, although detailed siting and design of the wells has not been determined. During groundwater pumping, nearby wells may experience a temporary interference from project operations resulting in declining water levels or well yields. Groundwater level fluctuations and interference to existing wells would be temporary, short-term, or long-term in nature, depending on the extraction operations. This impact is **potentially significant**.

In addition, pumping activities at the North County Groundwater Bank could result in changes in surface water levels in Pacheco Creek and associated impacts on riparian and native fish habitat. Please see Section 3.3, “Biological Resources” (Impact 3.3-2), for a discussion of the potential impacts of the North County Groundwater Bank on biological resources. Potential changes in surface water levels that could result from operation of the North County Groundwater Bank would be largely dependent upon interactions between surface waters and groundwater, about which limited information is currently available. Because of the uncertainties regarding

surface water interaction with groundwater in the reach of Pacheco Creek from approximately Lovers Lane to Highway 156 where groundwater banking operations would take place, it is possible that operation of the North County Groundwater Bank (i.e., lowering of the groundwater) could result in substantial changes in surface water flows. This impact is **potentially significant**.

> Mitigation Measure 3.2-5: Identify Existing Wells and Implement Ongoing Monitoring and Pumping Restrictions to Keep Impacts at Less-Than-Significant Levels.
>
> During project design, the project proponent shall identify existing wells within the areas of the affected basins where studies indicate that drawdown effects could be observed. The project proponents will review the identified wells and collect information regarding existing use, screened intervals, total depth, and pump depth. The information collected shall be used to predict effects to each well that has been identified. Based on this information, relocation of proposed project wells or reductions in project pumping from the wells will be incorporated into the final design for the North County Groundwater Bank and Urban Wells Program elements. Prior to project implementation, an operations plan will be developed and implemented that includes ongoing monitoring of well levels and establishes performance criteria and actions to adaptively manage the groundwater pumping to maintain desirable conditions and impacts below significant levels.

Implementing Mitigation Measures 3.2-4 and 3.2-5, in conjunction with Mitigation Measure 3.2-2 described above, would reduce impacts to surface and groundwater levels, including nearby wells, from operations of the North County Groundwater Bank and New Urban Wells Program elements, to **less-than-significant** levels by understanding existing well uses, aquifer characteristics, and groundwater and surface water interaction; modeling and monitoring drawdown and during project implementation; and adaptively managing groundwater pumping and recharge to maintain desirable conditions.

IMPACT 3.2-6 Potential Degradation of Surface and Groundwater Quality during Operations of the Demineralization Program Element. *Operation of the Demineralization Program element, including evaporation ponds and brackish wetlands, could impact surface and groundwater quality. Deep well injection of concentrated brine could impact groundwater quality if the well is not constructed properly and monitored. Additionally, ocean discharge of brine waste is a potential alternative for brine waste and has the potential to adversely affect water quality in the vicinity of the outfall location. Potentially significant and unavoidable.*

Demineralization would have a **beneficial impact** on groundwater quality, as it would serve to permanently remove salts from the groundwater basin. In addition, the use of demineralized groundwater would decrease the amount of additional CVP water introduced into the basin and would, therefore, reduce the amount of salt imported into the basin. The improved quality of the potable water produced using demineralization would also lead to improved wastewater quality.

However, demineralization would produce waste discharge with increased salt content (i.e., brine). The concentration of this brine solution has yet to be determined and would depend on the concentration of salts in the intake water, the treatment processes used, and plant capacity. By 2015, 3 mgd of demineralization capacity could be operational, and an additional 2 mgd capacity would be added in Phase 2 construction. The need for additional demineralization would be based on water quality and growth considerations.

The potential effect of operation of demineralization facilities on water quality would depend upon the concentration option and brine disposal alternative selected (i.e., landfill, deep well injection, or ocean discharge). Concentration options could include advanced techniques such as chemical precipitation or evaporation ponds. Evaporation ponds require less energy and manpower to operate and maintain than advanced concentration techniques, but can require large amounts of land and be an attractant for wildlife, including protected species. Operation of evaporation ponds and brackish wetlands which would gradually concentrate the brine and cause solids to precipitate could affect surface and groundwater quality if brine percolates into the ground or overflows

and enters waterways. Brackish wetlands, if installed within the 100-year floodplain of the San Benito River, could also be subject to inundation during flood events. Evaporation ponds and constructed wetland evaporative ponds are regarded as surface impoundments in California. Therefore, design and construction of evaporation ponds are subject to combined SWRCB and California Integrated Waste Management Board Regulations, Division 2, Title 27 of the CCR for Designated Waste, which among other things, requires liners to be installed to cover all natural geologic materials (City of Hollister et al. 2010:4-5). Surface impoundments are also required to have sufficient freeboard to accommodate seasonal precipitation and a 25-year, 24-hour storm event (Central Coast RWQCB Standard).

Alternately, brine could be disposed using a series of ponds and plant habitats of increasing salinity to form wetland and greenbelt habitat along the San Benito River. The ponds that would make up the wetlands, like the evaporative ponds described above, would be lined to minimize percolation and protect groundwater quality and water quality in San Benito River. Constructed wetlands could be used to remove nutrients and other constituents from the brine, but would not substantially lower total salinity. For the portion of the brine used to irrigate wetland habitat, salt would either be retained in the soil or flushed down the San Benito River during local rains (City of Hollister et al. 2010:4-9). During storm events, the potential for the wetland ponds to overtop and impact local surface and groundwater quality would exist. Discharges of brine from wetland ponds could violate the water quality objective for TDS in the San Benito River. The project proponent would be required to complete an Application/Report of Waste Discharge and this document shall be submitted to the Central Coast RWQCB for approval. The Central Coast RWQCB may also mandate that a groundwater monitoring program be developed and executed to verify nondegradation and protection of the underlying groundwater aquifer.

Concentrated Brine Disposal Options

Landfill

In both the case of the evaporation ponds and the wetlands and greenbelt habitat, concentrated brine would be dried and disposed in a landfill, underground, using deep well injection, or at an ocean discharge site. The landfill option would involve the periodic removal of solids from the ponds. If the salts are classified as nonhazardous, they could be disposed in a Class III landfill, lined in at least a portion of it to protect groundwater quality. Impacts to water quality from disposal of solids at an appropriately classified landfill would be less than significant.

Deep Well Injection

Deep well injection would use injection wells to place brine waste in a nonbeneficial geologic formation that would have no potential for migration into potential potable water aquifers. EPA regulates and monitors all injection well activities. Under the 1974 Safe Drinking Water Act (SDWA), EPA established a federal Underground Injection Control (UIC) Program. The UIC established requirements to prevent contamination of Underground Sources of Drinking Water (USDW) as a result of injection well activities. An injection well receiving waste brine from a reverse osmosis or similar demineralization process would be classified by EPA as a Class I, nonhazardous well. Injection wells typically operate at high pressures and failure of an injection well could lead to groundwater contamination and affect groundwater quality if the injection well was not constructed properly and monitored.

Ocean Discharge

To be disposed in the ocean, the brine would either need to be transported through a transmission pipeline or trucked. The ocean discharge disposal alternative would have the potential to affect water quality in the vicinity of the outfall location or to affect water quality in the study area if the outfall was temporarily unavailable. The potential effects of brine on groundwater, ocean receiving waters, or surface waters would depend on a number of environmental variables, including variations in salinity and temperature of the receiving waters, freshwater inflow, and tidal and wind actions in the mixing and dispersal of the discharge. The brine discharge might exceed

established water quality objectives and numerical standards identified for the receiving water body. If brine discharge through an ocean outfall were to be temporarily unavailable, this could result in a violation of a WDR.

A potential outfall location has yet to be determined; however, one possible outfall would be at the City of Watsonville WWTP. This outfall is a 42-inch diameter pipeline that extends 7,350 feet into the Pacific Ocean, terminating with a set of diffuser ports. The City of Watsonville recently reduced the amount of wastewater effluent it discharges through the ocean outfall relating to implementation of a recycled water program. Upon reaching the ocean, the brine would blend with the receiving seawater in a mixing zone around the outfall discharge. The City of Watsonville currently accepts brine deliveries from two small drinking water facilities. Requirements for the existing brine deliveries would include monitoring, reporting, and compliance with a discharge permit issued by the City of Watsonville, and payments to the City of Watsonville for the disposal service (SBCWD and SCVWD 2007).

Seawater typically has a TDS concentration of approximately 35,000 mg/L. The waste brine has been projected to have a TDS concentration of approximately 6,000 to 12,000 mg/L; the City of Watsonville's secondary effluent has a TDS concentration of approximately 900 mg/L (SBCWD and SCVWD 2007:4-15). Mixing of the brine and wastewater effluent would bring the blended discharged TDS concentration closer to that of natural seawater, potentially assisting in minimizing any impacts to the marine environment caused by freshwater discharge into the ocean. The Watsonville WWTP currently operates under a set of WDRs, and a NPDES permit regulates the concentrations and mass loadings for a variety of wastewater constituents and parameters. Discussions with the City of Watsonville and the Central Coast RWQCB would be required to determine the appropriateness of modifying the existing permit to add brine disposal from San Benito County and whether the combination of treated wastewater and waste brine would meet permit requirements. Emergency storage capacity would also be required, to avoid a violation of the WDR under emergency conditions when effluent could not be disposed through the outfall.

Impact Conclusion

Demineralization would have a **beneficial impact** on groundwater quality, as it would serve to permanently remove salts from the groundwater basin. Because implementation of Title 27 of the CCR and compliance with Central Coast RWCB requirements would ensure proper design and construction of evaporating ponds, impacts on water quality from operation of demineralization facilities would be less than significant. In addition, disposal of concentrated brine in Class III landfills would be **less than significant**.

The deep well injection disposal alternative would have the potential to affect groundwater quality if the injection well was not constructed properly and monitored. If brine discharge through an ocean outfall were to be temporarily unavailable, this could result in a violation of a WDR. These impacts would be **potentially significant**.

> Mitigation Measure 3.2-6a: Coordinate with the City of Watsonsville and the Central Coast RWQCB to Determine if Ocean Disposal of Brine is Acceptable and Conduct Modeling and Incorporate the Results into the Outfall Design.
>
> If the existing Watsonville WWTP outfall is to be used for brine disposal, the project proponent shall discuss the appropriateness of modifying the City of Watsonville's existing NPDES permit to add brine disposal from San Benito County with both the City of Watsonville and Central Coast RWQCB. The project proponent shall evaluate several chemical constituents in the blended discharge, including, but not limited to, inorganic salts, heavy metals, as well as chemicals that may be used at the demineralization plant (e.g., chlorine, antiscale additives, and corrosion products). The project proponent shall conduct all necessary studies, such as dispersion modeling, in coordination with the City of Watsonville and the Central Coast RWQCB, obtain an NPDES permit, and construct and operate this Program element in compliance with the NPDES permit. If another existing outfall is utilized for brine disposal, the project

proponent shall implement the same steps described above. If a new outfall is required, the project proponent shall conduct numerical hydrodynamic modeling to evaluate the variables affecting salinity and to provide input to a plant outfall design that minimizes impacts to ocean waters to the maximum extent feasible. Proper design and construction of the facility outfall shall mitigate impacts from brine discharge by maximizing the rapid dispersion and mixing of saline effluent to the extent that the changes to the salinity of waters in the outfall vicinity are minimized. If a new outfall is required, an NPDES permit shall be acquired from the Central Coast RWQCB, and WDRs shall be developed to regulate the concentrations and mass loadings of the brine waste.

Mitigation Measure 3.2-6b: Provide Emergency Storage for Brine Effluent.

If an ocean outfall or deep well injection is used for brine disposal, the project proponent shall provide emergency storage. Emergency storage requires that, in the event of emergency conditions when effluent discharge is temporarily restricted or unavailable, effluent can be stored temporarily to avoid a violation of the WDRs. A water balance model shall be developed by the project proponent to assess the volume of storage required to contain brine in the case of a temporary ocean outfall or deep well injection unavailability. Water storage may consist of tanks or lined ponds.

Mitigation Measure 3.2-6c: Perform a Deep Well Injection Feasibility Study, Obtain and Comply with an EPA Permit, and Meet Reporting and Monitoring Standards.

The characteristics of deep injection wells vary substantially, depending on the design flow rate, surrounding geology, and previous (if any) use of the well. If deep well injection is selected for brine disposal, the project proponent shall complete a feasibility study to be conducted by a licensed geologist/geotechnical engineer to evaluate the depth, geology, and hydrogeology of any potential well location with respect to the ability to accept and disperse injected brine at a specified rate and over an estimated project life. The feasibility study shall be submitted to EPA, which regulates and monitors all injection well activities.

The following items shall be performed by the project proponent and continuously monitored and controlled, in compliance with the EPA Class I, nonhazardous well requirements:

- Analysis of the injection fluid with sufficient frequency to yield representative data of its characteristics.
- Installation and use of continuous monitoring devises for the following required items:
    - Injection Rate (gallons per minute)
    - Injection Total Volume (gallons)
    - Injection Pressure (psi)
    - Annular Pressure (psi)
- A mechanical integrity test at least every 5 years during the life of the injection well.
    - A well is considered to have mechanical integrity if no significant leaks are in the casing, tubing, or packer and no significant fluid movement is into an underground source of drinking water (USDW) through vertical channels adjacent to the injection well bore.

A quarterly report shall be submitted to EPA which shall summarize the analysis of the injection fluid and identify the average, maximum, and minimum monthly values of each of the monitored parameters (i.e., characteristics of the injection fluid, injection rate, injection volume, injection pressure, and annular pressure. If operational difficulties such as scaling, fouling, or plugging occur at the brine-soil interface because the brine is corrosive, periodic or continual addition of chemicals, as well as periodic monitoring,

shall be required to determine the effectiveness of the addition of chemicals. If initial chemical addition is not successful at remedying operational difficulties, as determined through periodic monitoring, alternate chemicals or operational methods shall be tried and monitoring shall be continued until scaling, fouling, or plugging issues are resolved.

Implementing Mitigation Measures 3.2-5a through 3.2-5c would help to reduce potential impacts to water quality from operations of the demineralization of urban wells as it relates to brine disposal; however, this impact could still result in potentially significant impacts to surface and groundwater quality. It is unknown at this time if brine disposal could be conducted in a way that would ensure that impacts to receiving waters would be precluded and water quality objectives would be achieved. Therefore, this Program element could contribute to currently unknown but potentially significant environmental impacts for which feasible mitigation may not be available to reduce impacts to a less-than-significant level. Because project-specific modeling has not been completed to demonstrate that brine disposal could be conducted in a way that would ensure that impacts to receiving waters would be precluded and water quality objectives would be achieved (i.e., modeling of the deep well injection option has not yet been completed to demonstrate no-migration), at this program level of analysis, this impact would be considered **potentially significant and unavoidable**.

IMPACT 3.2-7 Potential Increases in On-Site and Off-Site Flood Risk. *Buildout of the Program elements would increase impervious surface and associated storm water runoff that could increase the potential for on-site and off-site flooding. The proposed Program would create additional impervious surfaces, but not to such a degree that there would be a substantially increased flood risk. If brackish wetlands are chosen as the brine concentration method for demineralization operations, they could be constructed within the San Benito River floodplain and could reduce the flood storage capacity of the floodplain. A significant decrease in San Benito River floodplain capacity is not expected. Less than significant.*

Construction of the Program elements would increase the amount of impervious surface in the study area (e.g., water treatment plant buildings and access roads) and would thereby reduce percolation and increase surface runoff. The increase in impervious surfaces would increase the discharge rate of storm water runoff generated in the study area and could result in a greater potential for off-site and on-site flooding without proper management. In addition to a potential increase in storm water runoff, sediment deposition occurring in or obstructing water flow to storm drains could also cause localized flooding; storm drain capacity could be exceeded by runoff or when purge water was discharged to storm drains during well development. Studies conducted by the Pajaro Watershed Authority concluded that storm water flows from the City did not contribute to peak flows downstream as of 2005; however, there are areas of historical localized flooding in the study area (City of Hollister 2005). Although the proposed Program would increase the amount of impervious surfaces, the increase would not be substantial. Many Program elements would not involve any or would involve limited construction activities. Other Program elements would be implemented at existing sites where there are already impervious surfaces. Additionally, the proposed Program would not place housing within a 100-year flood hazard area, place structures within a 100-year flood hazard area, or expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam. This impact is considered to be **less than significant**.

If brackish wetlands were chosen as the brine concentration method for demineralization operations, they could be constructed within the floodplain of the San Benito River and could reduce the flood storage capacity of the floodplain if there was a net increase in fill placed within the 100-year floodplain. This would reduce the flood storage capacity of the floodplain and could potentially increase downstream flood levels. A significant decrease in San Benito River floodplain capacity is not expected. Additionally, the brackish wetlands would not place housing within a 100-year flood hazard area, place structures within a 100-year flood hazard area, or expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam. This impact is considered to be **less than significant**.

Pipelines would be installed within existing roadways or rights-of-way, to the extent possible, and connected to existing pipelines. Vegetative ground cover or surface pavement above installed pipelines would be restored after the completion of construction to maintain existing drainage patterns. Because proposed pipelines would be installed underground, they generally would not be affected by flood events unless there was a large amount of scour in a situation where a pipeline is buried and the surface overtop is revegetated as opposed to paved. Storm drainage conditions would not be expected to change substantially from those locations where the area would be restored to preproject conditions. Therefore, potential impacts from pipelines would be considered **less than significant**.

Mitigation Measure: No mitigation measures are required.

IMPACT 3.2-8 Increased Demand for Water Supplies. *The proposed Program includes a phased plan that uses existing imported CVP surface and groundwater supplies, additional imported surface water, and groundwater from demineralization of select urban wells and from the proposed North County Groundwater Bank. In the event that CVP water supplies are reduced to 50% or other imported surface water supplies are limited, the North County Groundwater Bank and/or urban wells would be capable of meeting the water demands of the HUA. Therefore, the proposed Program would meet water demands in the HUA through 2023. Less than significant.*

The proposed Program provides a long-term water supply plan, through 2023, to meet the existing and future water resource needs of the HUA. Water supply demands have been developed based on land use designations and zoning in the City and County General Plans, estimated water losses, and anticipated levels of water conservation (HDR 2008: 4-7). Adjustments to water supply demands were made to account for implementation of growth management programs in the County and City. In addition, population projections were used as a component for determining the rate of regional growth. Using the Association of Monterey Bay Area Government's 2004 population projections that were adjusted to reflect the City's regional housing needs, the City is estimated to have 55,192 residents by 2023 (HDR 2008:4-7).

Table 3.2-4 shows the existing and projected water demands in the HUA, from 2005 through 2023 and at buildout. The projected water demands in Table 3.2-4 indicate that water supply needs in the HUA will increase between 2005 and 2023 by 3,875 afy, or 48.6% over the planning period (HDR 2008:4-9). These buildout demands were identified and are assumed to extend beyond the 2023 planning period for the proposed Program (HDR 2008:4-9). At buildout conditions, water demands are projected to increase to 20,148 afy or approximately 2.5 times the 2005 water demands (HDR 2008:4-9).

Table 3.2-4
Existing and Projected Water Demands in the Hollister Urban Area (afy)

	2005	2013	2018	2023	Buildout
Hollister Urban Area	7,965	8,383	10,294	11,840	20,148

Note: afy = acre-feet per year
Source: HDR 2008

With the current economic downturn and the implementation of water conservation measures, water demands in the HUA have not increased as previously estimated in the Master Plan, primarily because of the substantial decline in new home construction. In fact, water demands have actually decreased. Between 2005 and 2009, HUA water consumption decreased by more 10% (based on data compiled by HDR in 2010.)

The proposed Program would meet future water supply demands through the use of existing imported CVP and groundwater supplies, additional imported surface water, groundwater from demineralization of select urban

wells, and the proposed North County Groundwater Bank. The following discussion summarizes the existing and proposed surface and groundwater supplies available to the HUA and analyzes the ability of these supplies to meet the water supply demands of the HUA through 2023.

Existing CVP Water Supplies

As discussed above, SBCWD has an existing contract for CVP surface water exported from the Delta into San Luis Reservoir, and through the San Felipe Project into the Hollister Conduit. The current SBCWD contract with Reclamation provides for a total supply of 8,250 afy for M&I use in normal water years. In a single critically dry year, the M&I supplies may be reduced to 50% of the contract amount, and in multiple dry years, the M&I supplies may be reduced to approximately 30% of the contract amount (HDR 2008:2-10). Based on current trends, it is likely that the reliability of imported surface water supplies will continue to decline in the future (HDR 2008:1-7).

Purchases or Transfers of Imported Water Supplies

The proposed Program would obtain additional imported water through purchases, transfers, and out-of-basin groundwater banking. The amount and timing of additional imported water is difficult to estimate and would change, depending on water year type, CVP allocation, availability of transfers/purchased water, and the coordinated operation of the North County Groundwater Bank. It could range from 0 afy in a wet year, with existing CVP allocation at 100% and sufficient stream runoff and percolation to replenish previous diversions from the North County Groundwater Bank, to as much as 5,400 afy, based on SBCWD's minimum historical M&I CVP allocation of 1,320 afy (HDR 2008:1-7).

North County Groundwater Bank

Development of the North County Groundwater Bank is proposed to increase long-term water supply and supply reliability in the HUA. Facilities associated with this Program element would include facilities to extract and recharge groundwater, plus a network of monitoring wells. The North County Groundwater Bank would be operated to pump between 4,000 afy and 6,000 afy of groundwater. Water pumped from the groundwater bank would be pumped into the Hollister Conduit, conveyed to the Lessalt WTP and the proposed new surface WTP for treatment, and then conveyed to the HUA. The North County Groundwater Bank is proposed to be operational by 2013.

New Urban Wells

Both the City and SSCWD will continue to use groundwater wells for M&I supply. Based on demand projections, additional supply capacity would be needed toward the end of Phase 2 of the proposed Program. This additional capacity could be provided by drilling one or more new wells in the HUA. Based on existing urban well capacity (approximately 15 mgd) and the projected 2023 demands (approximately 22 mgd for maximum daily demand), at least two new wells would be required by 2023 to meet the maximum daily demand in the event that the largest water source (well or WTP) was out of service.

Impact Conclusion

The proposed Program would implement a phased plan that includes the use of existing imported CVP surface and existing groundwater supplies, additional imported surface water, new urban wells, groundwater from demineralization of select urban wells, and groundwater from the proposed North County Groundwater Bank. In the event that CVP water supplies were reduced to 50% or other imported surface water supplies were limited, the North County Groundwater Bank and/or urban wells would be capable of meeting the water demands of the HUA. Therefore, the proposed Program would meet water demands in the HUA through 2023, and this impact is considered **less than significant**.

Mitigation Measure: No mitigation measures are required.

IMPACT 3.2-9 Increased Demand for Water Treatment and Distribution Facilities. *The proposed Program includes upgrading the existing Lessalt WTP, constructing a new surface WTP, and constructing a groundwater demineralization facility. In addition, the proposed Program would construct transmission and distribution pipelines, aboveground water storage tanks, and pump stations that would deliver treated surface water and groundwater to the HUA. A time-phased implementation plan has been developed for the new water treatment facilities, and specifically for the demineralization facilities and distribution facilities. These facilities would be constructed and expanded incrementally to ensure that adequate treatment capacity and distribution facilities would be available to meet the water demands of the HUA.* Less than significant.

The proposed Program includes upgrading the existing Lessalt WTP, constructing a new surface WTP, and constructing a groundwater demineralization facility. In addition, the proposed Program would construct transmission and distribution pipelines, aboveground water storage tanks, and pump stations that would deliver treated surface water and groundwater to the HUA.

The proposed Program anticipates that approximately 6 mgd of surface water treatment capacity would be needed in the HUA by 2015. This capacity would be divided between the Lessalt WTP and the new WTP to ~~optimizethe~~ optimize the supply of high quality water in the distribution system while reducing total project costs. The Lessalt WTP would be upgraded to allow the facility to operate at its originally intended capacity of 3 mgd. Therefore, the capacity of the new WTP is expected to be approximately 3 mgd. Determination of the exact location and capacity of this new treatment plant would be based on water supply availability and the results of facilities planning studies. Upgrades to the Lessalt WTP would be completed by 2013, and construction of the new surface WTP would be completed by 2014.

The proposed Program includes phased demineralization of groundwater at urban wells through wellhead treatment or construction of a centralized demineralization treatment plant. The phasing would result in 3 mgd of demineralization capacity by 2015, and an additional 2 mgd by 2019, for a total of 5 mgd through 2023. This schedule represents the earliest implementation of phased demineralization. If actual demands did not meet projected demands, the schedule for implementation could be adjusted.

To satisfy the need for new storage throughout the distribution system, approximately 11 MG of new treated water storage would be needed, resulting in four to six new storage tanks. The storage tanks would be built in phases as additional storage was needed. Additional water transmission pipelines would be constructed to convey treated water from the storage tanks to the HUA.

A time-phased implementation plan has been developed for the new water treatment facilities, and specifically for the demineralization facilities and distribution facilities (see Figure 2-1 in Chapter 2, “Program Description”). If actual demands do not meet projected demands, the schedule for implementation would be adjusted. These facilities would be constructed and expanded incrementally to ensure that adequate treatment capacity and distribution facilities would be available to meet the water demands of the HUA. Therefore, this impact is considered **less than significant**.

Mitigation Measure: No mitigation measures are required.

3.2.4 RESIDUAL SIGNIFICANT IMPACTS

Impacts associated with potential increased in on-site and off-site flood risk and increased demand for water supplies, treatment, and distribution are considered less than significant. Implementation of mitigation measures contained in this section would reduce impacts associated with short-term degradation of surface and groundwater quality during project construction, and effects of recycled water use on groundwater and surface water quality

and levels, to a less-than-significant level. Therefore, there would be no residual significant impacts with respect to these issue areas.

The project could result in the potential degradation of groundwater quality from operation of the North County Groundwater Bank Program element. Due to the lack of definition of that element and its operations, there is not substantial evidence to conclude at this time that impacts to groundwater can be reduced to less-than-significant levels. Therefore, this Program element could contribute to currently unknown but potentially significant environmental impacts for which feasible mitigation may not be available to reduce impacts to a less-than-significant level, resulting in potentially significant and unavoidable residual impacts.

The project would result in the potential degradation of surface and groundwater quality from operation of the demineralization Program element. It is unknown if brine disposal could be conducted in a way that would ensure that impacts to receiving waters would be precluded and water quality objectives would be achieved. Therefore, this Program element could contribute to currently unknown but potentially significant environmental impacts for which feasible mitigation may not be available to reduce impacts to a less-than-significant level, resulting in potentially significant and unavoidable residual impacts.

This page intentionally left blank.

3.3 BIOLOGICAL RESOURCES

3.3.1 ENVIRONMENTAL SETTING

Sources of information used to prepare this section include such biological databases as the California Natural Diversity Database (CNDDB) (2010), the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (CNPS 2010), and the United States Fish and Wildlife Service's (USFWS's) endangered species database (USFWS 2010). The environmental setting includes pertinent information from the San Benito Groundwater Management Plan and the Draft Environmental Impact Report: Groundwater Management Plan Update for the San Benito County portion of the Gilroy-Hollister Valley Groundwater Basin (SBCWDWRA 2003). A reconnaissance-level, biological field survey of the study area was conducted by AECOM biologists on May 27, 2010.

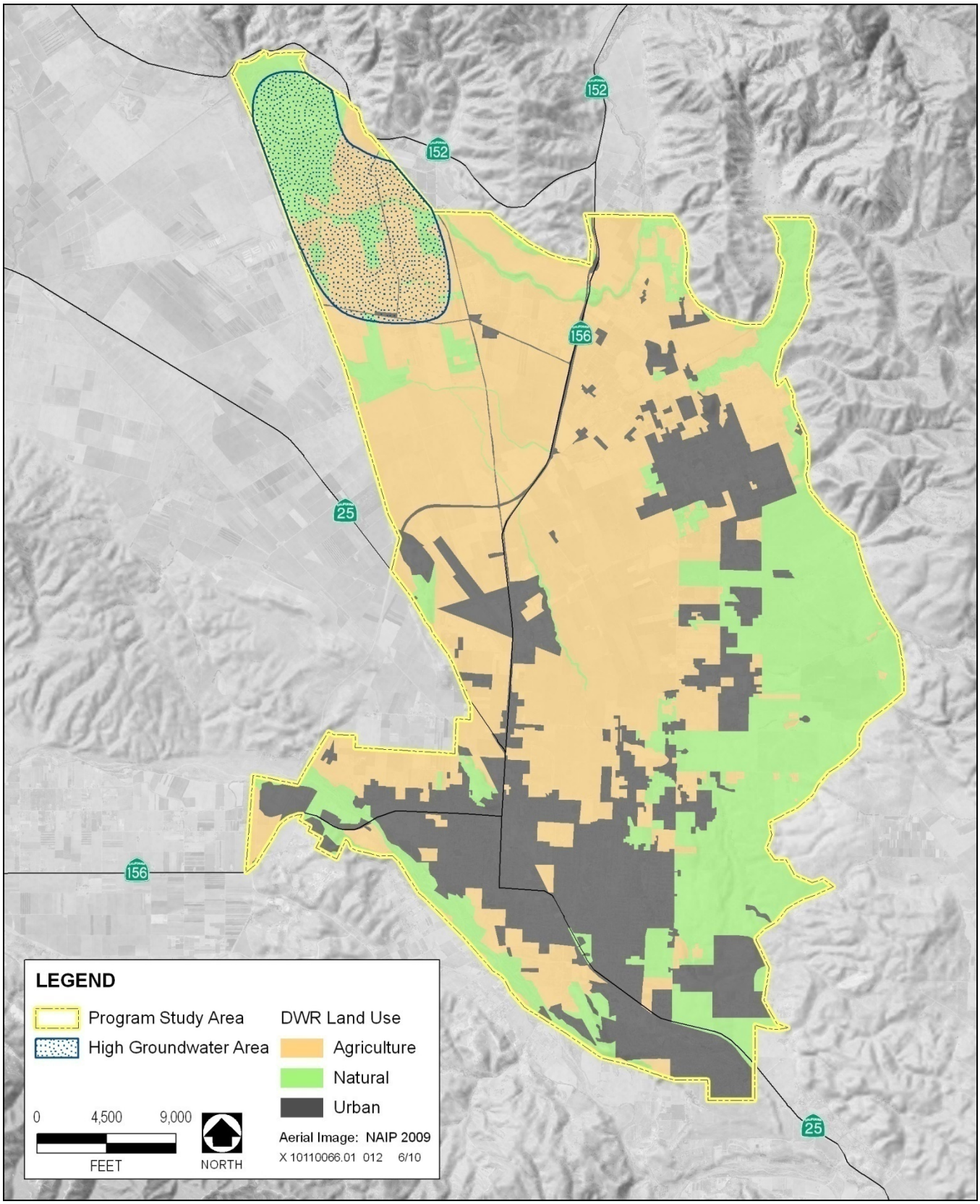
The assessment of habitats present in the study area, and their location and characteristics, was based on a review of scientific and technical literature, previous biological assessments in the study area (particularly SBCWDRA 2003:Appendix E), and GIS data layers. Reviewed GIS data layers included the National Wetland Inventory (NWI) (USFWS 2010), National Hydrography Dataset (USGS 2010), San Benito County Land Use Data (DWR 2002), and Multi-Source Land Cover Data (CDF 2002). The extent of habitat types was interpreted from the DWR, National Hydrography, and NWI data layers.

The biological resources in the study area have been strongly influenced by anthropogenic factors. Native habitats have been largely replaced by urban and agricultural land uses. Biological resources have also been affected by changes to the natural hydrological conditions, which have been altered by groundwater pumping and agricultural use of imported water. The presence of artificially high groundwater in the northwestern portion of the study area is of particular importance to this analysis (Figure 3.3-1). In 1988, after the construction of the Pacheco Tunnel and Conduit, which conveys imported water from the CVP into the study area, agricultural water users increased their reliance on imported water instead of pumping groundwater, resulting in an area with excessively high groundwater. These high groundwater conditions have altered the extent and characteristics of agricultural and natural habitats from their characteristics prior to the use of imported water (Grossinger et al. 2008) and have increased surface water flows in the lower segments of Pacheco Creek and its tributaries during certain times of the year (i.e., summer and fall) when the creeks historically have exhibited extremely low or intermittent flows. The existing impact of use of imported water on biological resources in the high groundwater condition varies spatially, based on the soil substrate and its influence on the interaction between groundwater and surface water. This interaction is not yet fully understood because of limited hydrologic and biological survey data.

VEGETATION

The San Benito County Land Use Data (DWR 2002) includes agricultural, developed, and natural land cover in the study area (Figure 3.3-1). Agricultural and developed land cover accounts for most (72%) of the study area (Table 3.3-1). Agricultural land cover includes irrigated pasture, idle agricultural fields, crops, vineyards, and orchards. Developed land cover spans a gradient of development density from rural residential areas with dispersed buildings to suburban and urban areas with multiple buildings per acre and associated roads and utilities. Developed land cover includes landscaping and ruderal (disturbed) habitats, and small patches of natural vegetation. Natural land cover in the study area includes: annual grassland, chaparral, coastal scrub, fresh emergent wetland, oak woodland, and valley and foothill riparian. Fresh emergent wetlands, oak woodlands, and valley and foothill riparian habitats are considered sensitive habitats.

Although no hydrological data are available to accurately measure the effect of high groundwater on vegetation, evidence shows that the high groundwater conditions has increased the extent of natural habitat, particularly, seasonal and perennial wetlands. Currently, within the area of high groundwater (Figure 3.3-1), there are 1,532 acres of agricultural and 1,197 acres of natural habitats (DWR 2002).



Source: Data adapted by AECOM 2010

Land Use in the Study Area **Figure 3.3-1**

Table 3.3-1 Acreage of Land Cover Types by Location in the Study Area			
	Location in Study Area		
Land Cover Type	High Groundwater Area	Outside of High Groundwater Area	Total
Agricultural	1,532	15,251	16,783
Natural	1,197	8,777	9,974
Urban	26	8,511	8,538
Total	**2,755**	**32,539**	**35,294**
Source: Acreages derived by AECOM in 2010 based on data from DWR 2002			

The artificially high groundwater conditions have resulted in changes to agricultural land use: from 1997 to 2002, the acreage of row and field crops decreased by approximately 66%; and concurrently, the combined acreage of idle cropland and pasture (both of which include weedy fields) and natural vegetation increased by approximately 61% (DWR 1997 and 2002). Where high groundwater saturates the upper 1 to 2 feet of soil of cropland for several days or more, the growth and survival of crops are affected because crop roots are concentrated in this upper layer of soil and because most nutrient uptake occurs in this layer of soil (Rao and Li 2003:13(4):610–616; Wang and Smith 2004:55:501–523; Jackson and Colmer 2005:96:501–505). Soil saturation also interferes with the ability to use machinery to work soil and can temporarily reduce grazing suitability.

In natural land cover, high groundwater also affects the species composition and vegetation types. Similar to crop plants, plants of native vegetation are strongly affected by saturation of the uppermost foot of soil during the growing season (NRC 1995). Many plant species have reduced growth and survival in saturated soils, but wetland plants tolerate saturated soils, and some thrive under such conditions.

Annual grassland. This habitat is composed of a layer of herbaceous (i.e., nonwoody) plants dominated by annual grass species, most of which are nonnative. Some perennial grasses and numerous native and nonnative forbs are also present, but generally account for only a small portion of the vegetation. This habitat is common in the foothills above the valley floor areas, including the Flint Hills, the hills southwest and due east of Hollister, and the hills between Tres Pinos and Paicines.

Chaparral. Chaparral is an upland habitat that has a dense cover of evergreen shrubs with a very sparse herbaceous understory. The structure of this habitat type is relatively consistent at and among sites, except after fires, when a dense layer of herbaceous plants is present for several years. This habitat covers a very small acreage near the perimeter of the study area.

Coastal scrub. Coastal scrub is characterized by low-growing, deciduous shrubs with semiwoody or woody stems. However, its structure varies and often also includes perennial forbs or taller and/or evergreen shrubs. Coastal scrub occurs within the floodplain of the San Benito River.

Fresh emergent wetland. Fresh emergent wetlands in the study area include both perennial and seasonal wetlands; these subcategories differ in duration of inundation and soil saturation, and as a result, in characteristic plant and animal species. Freshwater emergent wetlands frequently occur along the edges of waterways. Extensive freshwater emergent wetlands also occur around San Felipe Lake and where water ponds in either man-made features or natural depressions, such as those used as stock ponds or for irrigation.

Oak woodland. Oak woodlands vary from areas with widely spaced trees to dense stands with a nearly continuous tree canopy. The understory of these woodlands may be dominated by herbaceous plants (i.e., grasses and forbs), shrubs, or both. In the study area, oak woodland is in the hills southwest of Tres Pinos and west of the San Benito River, southwest of Hollister, and in the upper Arroyo Dos Picachos watershed area, northeast of Hollister.

Valley and foothill riparian. Valley and foothill riparian habitats are dominated by deciduous trees and shrubs. The structure of this habitat varies from a low scrub to tall forest that may have a continuous tree canopy and a dense shrub understory. This habitat is typically associated with the approximately 83 miles of waterways in the study area (USGS 2010). In particular, the bed and banks of the San Benito and Pajaro Rivers, Tres Pinos Creek, Santa Ana Creek, Arroyo Dos Picachos, Arroyo de la Viboras, Tequisquita Slough, and Pacheco Creek support valley and foothill riparian habitat.

WILDLIFE AND FISH COMMUNITIES

The combination of vegetation types in the study area provide breeding and foraging habitat for many of the wildlife species known to occur in San Benito County. Wildlife diversity is expected to be highest in riparian and perennial wetlands habitats despite the fact that these areas are generally restricted to narrow stream corridors and small, isolated locations surrounded by agricultural and urban land uses. The high-quality riparian habitat along the upper reach of Pacheco Creek is particularly important for wildlife, and many resident and migratory bird species are known to use this riparian corridor for nesting and foraging. Agricultural land and grasslands in the study area are known to support many wildlife species. Grasslands that support vernal pools are considered especially important because they may provide habitat for a number of endemic vertebrate and invertebrate species.

Aquatic habitats in the study area support a diverse assemblage of native and nonnative fish species that are typical for the region. Pacheco Creek and other waterways in the study area provide important habitat for the native fish community, including steelhead (*Oncorhynchus mykiss*), Monterey roach (*Lavinia symmetricus subditus*), speckled dace (*Rhinichthys osculus*), Sacramento sucker (*Catostomus occidentalis*), prickly sculpin (*Cottus asper*), and hitch (*Lavinia exilicauda*). Nonnative fish species include green sunfish (*Lepomus cyanellus*) and mosquitofish (*Gambusia affinis*) (Smith 1998)

SPECIAL-STATUS SPECIES

Special-status species are plants and wildlife that are legally protected or otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations (Table 3.3-2), including:

- species that are listed under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA) as rare, threatened, or endangered;
- species considered candidates for listing or proposed for listing;
- wildlife identified by DFG as species of special concern;
- wildlife identified as fully protected under the California Fish and Game Code; and
- plants considered by the CNPS to be rare, threatened, or endangered.

Special-status plant and wildlife species previously documented in the vicinity of the study area were identified through a search of the CNDBB. The CNDDB is a statewide inventory managed by DFG that includes the location and condition of the state's rare and declining species and habitats. A search of the CNDDB was conducted for special-status species previously reported within 1 mile of the study area. Although the CNDDB is the most current and reliable tool for tracking occurrences of special-status species, it contains only those records that have been submitted to DFG. Thus, additional special-status species are likely present within the study area although they were not identified through the CNDDB search. Special-status fish previously documented within or in the vicinity of the study area were identified through a search of pertinent unpublished literature (Smith 1998 and 2007).

Table 3.3-2
Special-Status Species Previously Documented Within or in the Vicinity of the Study Area

Species	Habitat	CNPS	DFG	USFWS/NMFS
Plants				
Hover's button-celery *Eryngium aristulatum hooveri*	Vernal pools	1B	--	--
Round-leaved filaree *Erodium macrophyllum*	Valley and foothill woodland, clay soil	2	--	--
San Joaquin spearscale *Atriplex joaquiniana*	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools, alkaline and clay soil	1B	--	--
Hairless popcorn-flower *Plagiobothrys glaber*	Meadows and seeps, marshes and swamps, alkaline soil	1A	--	--
Indian Valley bush-mallow *Malacothamnus aboriginum*	Chaparral, foothill woodland	1B	--	--
Alkali milk-vetch *Astragalus tener vartener*	Valley and foothill grassland, vernal pools, alkaline soil	1B	--	--
Fish				
South-Central California Coast steelhead DPS *Oncorhynchus mykiss*	Requires cold, freshwater streams with suitable gravel for spawning	--	SSC	T
Monterey roach *Lavinia symmetricus subditus*	Spawning occurs in pools and side pools of small rivers and creeks; juveniles rear in pools of small rivers and creeks	--	SSC	--
Amphibians and Reptiles				
California tiger salamander *Ambystoma californiense*	Vernal pools and other seasonal ponds in valley and foothill grasslands	--	T	T
Western spadefoot *Scaphiopus hammondii*	Vernal pools and other seasonal ponds in valley and foothill grasslands	--	SSC	--
California red-legged frog *Rana draytonii*	Streams and ponds	--	SSC	T
Western pond turtle *Actinemys marmorata*	Freshwater marsh, ponds, lakes, and rivers	--	SSC	--
San Joaquin whipsnake *Masticophis flagellum ruddocki*	Grasslands and oak woodlands	--	SSC	--
Birds				
Western burrowing owl *Athene cunicularia hypugea*	Grasslands, agricultural land, and open woodlands	--	SSC	--
Mammals				
Western red bat *Lasiurus blossevillii*	Riparian woodlands	--	SSC	--
Western mastiff bat *Eumops perotis californicus*	Rock crevices and buildings	--	SSC	--
San Joaquin kit fox *Vulpes macrotis mutica*	Grasslands and open scrub		T	E
American badger *Taxidea taxus*	Grasslands, oak woodland, and open scrub	--	SSC	--

California Native Plant Society (CNPS):
1A = plants presumed extinct in California
1B = plants rare, threatened, or endangered in California and elsewhere
2 = plants rare, threatened, or endangered in California, but more common elsewhere

California Department of Fish and Game (DFG):
E = state listed as endangered
T = state listed as threatened
SSC = California Species of Special Concern

U.S. Fish and Wildlife Service (USFWS)/National Marine Fisheries Service (NMFS):
E = federally listed as endangered
T = federally listed as threatened

Sources: CNDDB 2010; Moyle 2002

Special-Status Plants

Six special-status plant species have been previously reported to the CNDDB from locations in or near the study area (Table 3.3-2 and Figure 3.3-2). Most of these plant species are associated with sensitive habitats (e.g., wetlands and vernal pools) and/or specific soil types (e.g., alkaline and clay). Special-status plants previously reported from the vicinity of the high groundwater area include Hoover's button-celery (*Eryngium aristulatum hooveri*) and San Joaquin spearscale (*Atriplex joaquiniana*). There are no occurrences of any threatened or endangered species protected under the ESA or CESA.

Special-Status Fish

Two special-status fish species have been documented to occur in Pacheco Creek in the study area, steelhead and Monterey roach (Table 3.3-2). Steelhead is the only fish species protected under the ESA in the study area.

Pacheco Creek lies geographically within the South-Central California Coast steelhead distinct population segment (DPS). The South-Central California Coast steelhead DPS is listed as threatened under the ESA, and Pacheco Creek is within the critical habitat designation for the DPS (70 Federal Register [FR] 52488, September 2, 2005). Steelhead runs in the entire Pajaro River system are reported to have numbered from 1,000 to 2,000 in the early 1960s but have since decreased to less than 100 in 1991 (NMFS 2002). Recent steelhead abundance in Pacheco Creek is unknown but believed to be extremely low (Smith 2007).

Special-Status Wildlife

Ten special-status wildlife species have been previously documented in or near the study area. Species protected under the ESA include San Joaquin kit fox (*Vulpes macrotis mutica*), California red-legged frog (*Rana draytonii*), and California tiger salamander (*Ambystoma californiense*). The San Joaquin kit fox and California tiger salamander are also protected under CESA. Special-status wildlife species previously reported from the high groundwater area include western pond turtle (*Actinemys marmorata*) and California red-legged frog.

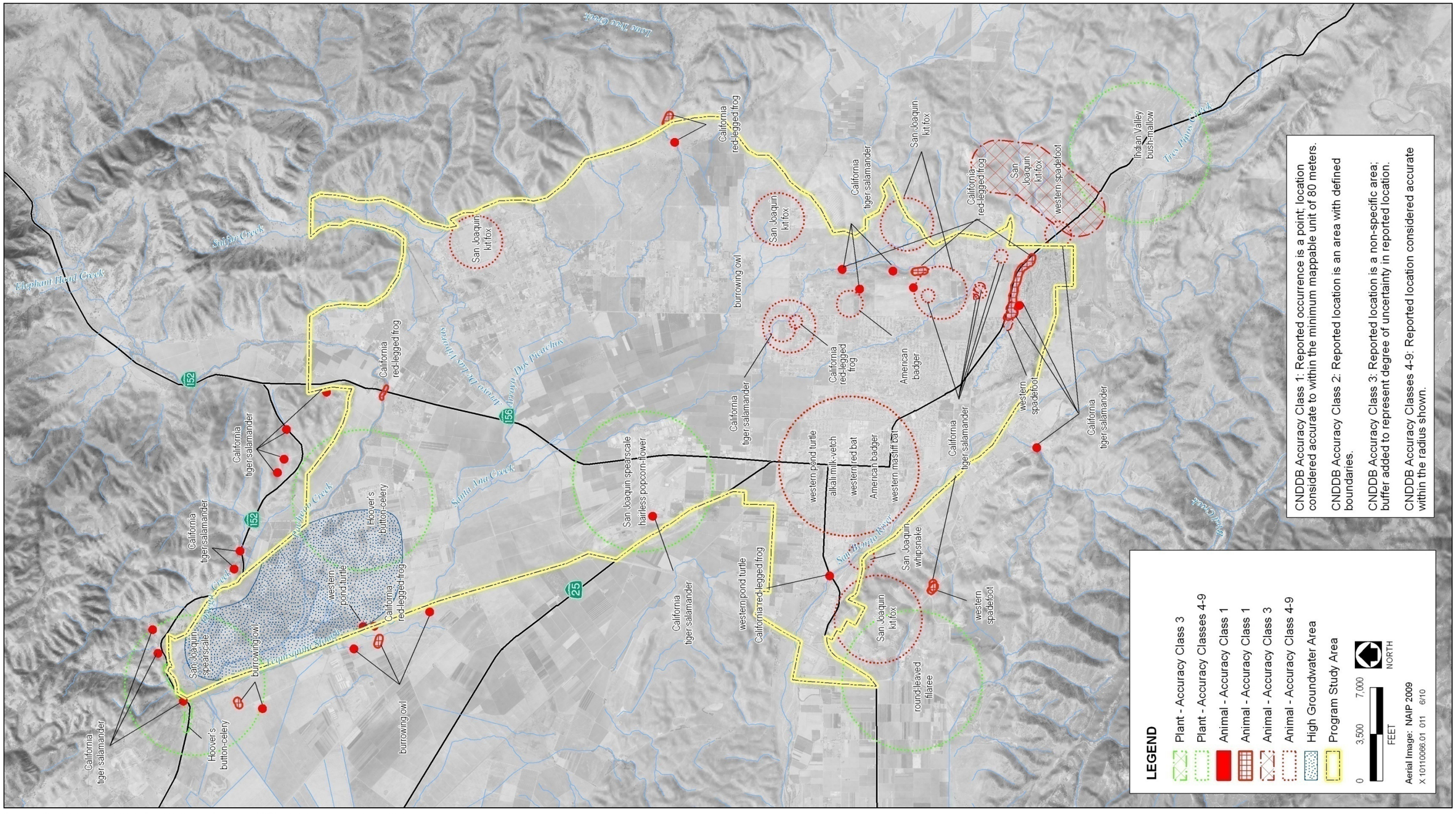
SENSITIVE HABITATS

Sensitive habitats include those that are of special concern to DFG, or that are afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, the Porter-Cologne Act, and/or Section 404 of the Clean Water Act (CWA). Sensitive habitats may be of special concern to these agencies and to conservation organizations for a variety of reasons, including locally or regionally declining status of sensitive habitats, or because they provide important wildlife. Sensitive habitats in the study area are discussed below under the following headings: (1) Pacheco Creek and its Tributaries, (2) San Felipe Lake, and (3) Sensitive Vegetation Communities.

Pacheco Creek and its Tributaries

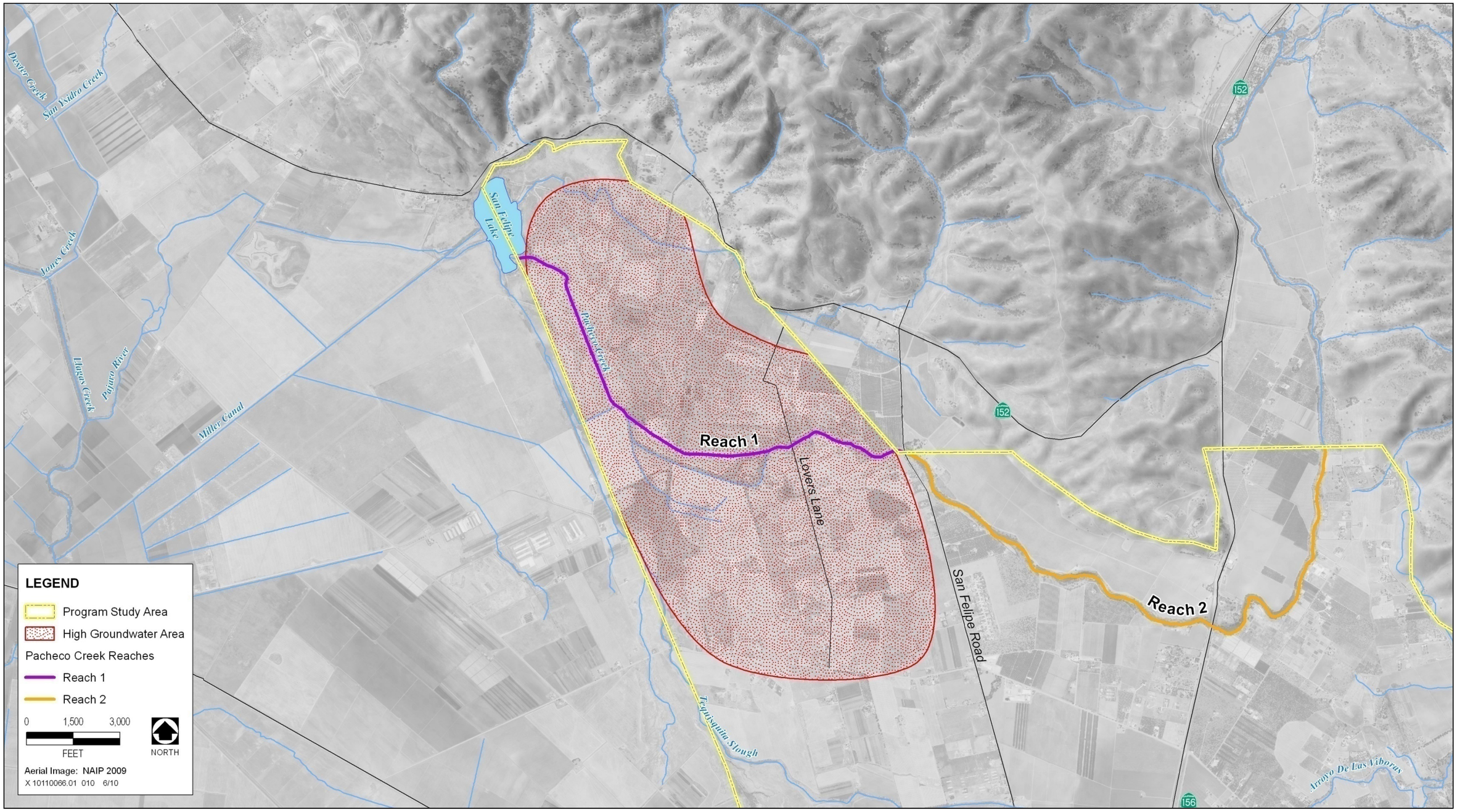
Primary waterways in the study area include Pacheco Creek and its tributaries. Pacheco Creek originates in the Diablo Range and eventually flows into the Pajaro River (via Miller Canal) downstream of the study area. Pacheco Creek's primary tributaries, Santa Ana Creek, Arroyo de Los Viboras, and Arroyo dos Pichachos, all flow into Tequisquita Slough before joining Pacheco Creek above San Felipe Lake (also known as Soap and/or Frazier Lake).

The aquatic habitat conditions in Pacheco Creek are predominately influenced by natural precipitation patterns, topography, upstream water releases from Pacheco Reservoir, high groundwater conditions in the north portion of the study area, and riparian vegetation. Pacheco Creek includes both upper elevation segments with higher velocity and lower volume waters, and valley floor segments with lower velocity and larger volume waters. The conditions between higher and lower elevations generally transition from having cooler, clear-running water with gravel bars and riffle complexes, to warmer, turbid, more stagnant waters with substrates composed of fine sediments. For purposes of evaluation, Pacheco Creek has been delineated into two discreet reaches, Reaches 1 and 2, based on changing habitat conditions associated with the location of the high groundwater area and interaction between ground and surface waters (Figure 3.3-3). Representative photographs of Pacheco Creek in each of the two reaches are provided in Figure 3.3-4.



Source: CNDDB March 2010; GEI 2009 modified by AECOM 2010 based on DWR 2010.

Special-Status Species Previously Documented Within a 1-Mile Buffer of the Study Area **Figure 3.3-2**



Source: CNDDB March 2010; GEI 2009 modified by AECOM 2010 based on DWR 2010.

Pacheco Creek High Groundwater Areas **Figure 3.3-3**

Pacheco Creek near San Felipe Road (Reach 1)

Pacheco Creek near Highway 156 (Reach 2)

Representative Photographs of Pacheco Creek **Figure 3.3-4**

As discussed above, Pacheco Creek provides important habitat for the native fish community, including steelhead and Monterey roach. Pacheco Creek and its tributaries are regulated by DFG under the California Fish and Game Code, and may be subject to U.S. Army Corps of Engineers (USACE) jurisdiction under Section 404 of the CWA.

San Felipe Lake

San Felipe Lake lies in an area along Pacheco Creek's downstream boundary of the study area. The lake has been characterized as historical sag pond wetlands located at the head of the Pajaro River near the Calaveras Fault. Historically, when the valley flooded, the lake and wetlands drained into the Pajaro River, creating a large expanse of shallow water upstream and downstream of the earthen berm that impounds water and forms the lake (Smith 1998). To facilitate agricultural development, Miller Canal was constructed from San Felipe Lake directly to a downstream portion of the Pajaro River downstream of its confluence with Llagas Creek, bypassing the flat, meandering historic wetland channel. Construction of the canal allowed for quicker spilling and draining of the lake at a lower elevation, which allowed farming around the lake. The surface area of the lake still expands dramatically in size (both up and downstream of the earthen berm that impounds the lake) when the valley experiences heavy flooding.

San Felipe Lake is regulated by DFG under the California Fish and Game Code, and may be subject to USACE jurisdiction under Section 404 of the CWA. The area inundated by this seasonal shallow water, floodplain habitat (also known as Bolsa de San Felipe) has been identified as an important California bird area by Audubon California, the state office of the National Audubon Society. (Cooper 2004.)

SENSITIVE VEGETATION COMMUNITIES

Sensitive vegetation communities include fresh emergent wetland, valley and foothill riparian, and oak woodland communities. These vegetation communities provide important habitat for many wildlife species, including a number of special-status species, and are considered sensitive by DFG. Fresh emergent wetlands and valley and foothill riparian are also regulated under the California Fish and Game Code and may be subject to federal jurisdiction under Section 404 of the CWA.

Fresh Emergent Wetland

Fresh emergent wetlands in the study area include both marshes and seasonal wetlands. These wetlands types differ in duration of inundation or soil saturation, and in characteristic plant species. Marshes are dominated by large, perennial, herbaceous plants (such as cattails [*Typha* species]) that are rooted in saturated or submerged soil, but whose leaves extend above the water surface. Most plants dominating marshes require readily available moisture, and groundwater levels more than 1 foot below the surface for a substantial portion of the growing season may not provide sufficient moisture (USACE 2000). Seasonal wetlands typically occur in shallow depressions where soils are impermeable or slowly draining, groundwater is seasonally high, or both. Seasonal wetlands support plants that can tolerate both saturated soils and seasonal drought, or annual upland grasses and forbs that grow only while soils are drying in late spring and summer. Some seasonal wetlands in the study area have been referred to by some authors as vernal pool seasonal wetlands (DFG 1998). However, vernal pools are typically supported by impermeable soil layers which are not characteristic in the soils underlying the basin floors of the study area. Some seasonal wetlands in the study area may nonetheless provide habitat comparable to vernal pools.

The hydrology of fresh emergent wetlands varies during a growing season and among years. This variation is important for maintaining the biodiversity of wetlands. Variation in water levels disperses seed, creates opportunities for plant establishment, and maintains habitat heterogeneity for plants and animals. Changes in depth of inundation or depth to saturated soil also can change the extent of marsh, seasonal wetland, and upland habitats.

In the study area, many fresh emergent wetlands are the result of human alterations. These are often marshes associated with small artificial ponds and natural drainages that are enhanced by intentional or unintentional releases of irrigation water, and also with irrigation and drainage ditches when not frequently cleared of vegetation. Fresh emergent wetlands in the high groundwater area also may be the result of human alteration of groundwater levels.

Valley and Foothill Riparian

Within the study area, the dominant tree species in this habitat include black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), Fremont cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), and valley oak (*Quercus lobata*), with subcanopies of box elder (*Acer negundo*), alder (*Alnus rhombifolia*), and willows (*Salix* species) often occurring. Numerous shrubs, herbs, and vines also occur in the understory of this habitat including mulefat (*Baccharis salicifolia*), poison hemlock, poison oak (*Toxicodendron diversiloba*), and blackberries (*Rubus* species). The transition between riparian and the predominantly agricultural setting in the study area is often abrupt.

Flow regime, depth to water table, and disturbance strongly affect the species composition and physical structure (and thus, habitat values) of valley and foothill riparian vegetation. Although flow regime influences the dispersal, establishment, growth, and survival of all the woody riparian species, cottonwoods and willows particularly depend on specific hydrologic events for their recruitment. During seed release, flows must be high enough to disperse seed to surfaces where scouring by subsequent flows does not occur, yet not so high that seedlings desiccate after flows recede, and flows must recede gradually to enable germination and seedling establishment while the substrate is still moist (Mahoney and Rood 1998:18:634–645; USACE 2000). Establishment of California sycamore, box elder, alder, and valley oak are not as dependent on specific hydrologic conditions for germination and seedling establishment.

Depth to the water table affects riparian communities because riparian trees are susceptible to drought stress. Although riparian trees can persist on sites where the groundwater surface is as far as 20 feet below the ground surface (USACE 2000), declines in groundwater elevation can reduce growth and survival (USACE 2000; Horton et al. 2001:11:1046–1059); where groundwater is at depths of 10 to 20 feet below the surface, or is only shallow for a portion of the growing season, reduced growth and survival may result in sparser tree canopies with less biomass and less diverse habitat structure (Lite and Stromberg 2005:125:153–167).

Riparian vegetation communities also provide shaded riverine aquatic (SRA) habitat functions that are important for fish and other aquatic species. SRA habitat is defined as the nearshore aquatic habitat occurring at the interface between a river and adjacent woody riparian habitat. The principal attributes of this cover type are (1) an adjacent bank composed of natural, eroding substrates supporting riparian vegetation that either overhang or protrude into the water; and (2) water that contains variable amounts of woody debris, such as leaves, logs, branches, and roots and has variable depths, velocities, and currents. Riparian vegetation provides structure (through SRA habitat) and food for fish species. Shade decreases water temperatures, while low overhanging branches can provide sources of food by attracting terrestrial insects. As riparian areas mature, the vegetation sloughs off into the rivers, creating structurally complex habitat consisting of large woody debris (LWD) that furnishes refugia from predators, creates higher water velocities, and provides habitat for aquatic invertebrates. For these reasons, many fish and other aquatic species are attracted to SRA habitat.

Oak Woodland

The tree layer of oak woodlands in the study area is dominated most frequently by coast live oak (*Quercus agrifolia*), but also by valley oak, and to a lesser extent by blue oak (*Quercus douglasii*) and foothill pine (*Pinus sabiniana*). These are long-lived trees that are resilient to damage; their stems often survive fire, and when their stems are killed by fire or are cut down, basal sprouts frequently grow into new stems. Nonetheless, there are

concerns regarding the status and on-going trends of tree canopies of oak woodlands, particularly blue oak and valley oak-dominated savannas and woodlands (McCreary and McPherson 2005:13).

3.3.2 REGULATORY CONTEXT

Biological resources in San Benito County are protected and/or regulated by a variety of federal, state, and regional and local laws and policies. Key regulatory and conservation planning issues applicable to the proposed Program are discussed below.

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Endangered Species Act

Pursuant to the ESA, the USFWS and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) have regulatory authority over federally listed species. Under the ESA, a permit to "take" a listed species is required for any action that may harm an individual of that species. "Take" is defined under Section 9 of the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S. Code [USC] 1532, 50 Code of Federal Regulations [CFR] 17.3). Under federal regulation, "take" is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. If a project would result in take of a federally listed species, the project proponent must acquire either an incidental-take permit, under Section 10(a) of ESA, or a federal interagency consultation, under Section 7 of ESA before the take occurs.

Section 404 of the Clean Water Act

Section 404 of the federal CWA establishes a requirement for a project proponent to obtain a permit from the USACE before engaging in any activity that involves any discharge of dredged or fill material into "waters of the United States," including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Many surface waters and wetlands in California meet the criteria for waters of the United States, including intermittent streams and seasonal lakes and wetlands.

Section 401 of the Clean Water Act

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredging or filling activity is consistent with the state's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the SWRCB and its nine RWQCBs.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Endangered Species Act

Pursuant to CESA of the California Fish and Game Code, a permit from DFG is required for projects that could result in the take of a species state listed as threatened or endangered (i.e., species listed under CESA), except that plants may be taken without a permit pursuant to the terms of the California Native Plant Protection Act

(California Fish and Game Code Section 1900 et seq.). Pursuant to Section 2080, take of a listed species is prohibited without an incidental take permit (ITP). A take of a species under CESA is defined as an activity that would directly or indirectly kill an individual of the species. The CESA definition of take does not include "harm" or "harass" as is included in the federal act. As a result, the threshold for take under CESA is generally considered higher than under ESA.

California Fish and Game Code Section 1602—Lake and Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife or fishery resources are subject to regulation by DFG under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first notifying DFG: substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. A stream is defined as a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. DFG's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A DFG streambed alteration agreement must be obtained for any project that would result in an impact on a river, stream, or lake.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Act, "waters of the state" fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that discharge waste to wetlands or waters of the state must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the CWA.

More recently, the appropriate RWQCB has also generally taken jurisdiction over "waters of the state" that are not subject to USACE jurisdiction under the CWA, in cases where USACE has determined that certain features do not fall under its jurisdiction. Mitigation requiring no net loss of wetlands functions and values of waters of the state is typically required.

Regional and Local Plans, Policies, Regulations, and Ordinances

San Benito County General Plan

The San Benito County General Plan (San Benito County 1995) addresses conservation of biological resources in the Open Space and Conservation Element. Countywide policies and objectives for the preservation of natural resources include:

- To preserve existing plant and wildlife ecological habitats;
- To preserve riparian habitats and valuable watersheds;
- To implement state and federal policy for wetlands; and
- To promote the restoration, restocking, and protection of oak woodland habitat.

City of Hollister General Plan

The City of Hollister General Plan (City of Hollister 2005) provides overall guidance for natural resource conservation. A goal of the Natural Resources and Conservation Element is to assure enhanced habitat for native

plants and animals, and special protection for threatened or endangered species. The following policies were adopted in support of this goal:

- **Policy NRC 1.1:** Protection of Environmental Resources,
- **Policy NRC 1.2:** Protection of Endangered Species Habitat,
- **Policy NRC 1.3:** Compensatory Habitat, Habitat Enhancement or Habitat Protection,
- **Policy NRC 1.4:** Other Habitat Planning Measures,
- **Policy NRC 1.5:** Wetlands Preservation,
- **Policy NRC 1.6:** Enhancement of Creeks and Drainage Ways, and
- **Policy NRC 1.7:** Specialized Surveys for Special-Status Species.

3.3.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

The proposed Program would include construction and operational impacts that could substantially affect biological resources. This analysis focuses on Program element construction activities that would affect sensitive biological resources and presents an evaluation of potential operational impacts that could affect groundwater and surface water, which in turn could affect biological resources. Phase 1 and 2 Program elements that are not expected to adversely and substantially affect biological resources in the study area include:

- **Purchases or Transfers of Imported Water Supplies**: no new facilities would be required and additional water supplies through the conveyance system would not adversely affect any biological resources;

- **Lessalt WTP Upgrades**: these upgrades would occur at the already disturbed Lessalt WTP site, which does not maintain sensitive habitats or species;

- **Ridgemark WWTP Upgrades**: these upgrades would occur at the already disturbed Ridgemark WWTP site, which does not maintain sensitive habitats or species;

- **Expansion of the City WRF**: these facilities would not have any substantial effects on species or their habitats;

- **Phase 1 Recycled Water Program**: this Program element has been completed; and

- **Non-Structural Solutions**: non-structural solutions include salinity education, water softener ordinances, and other measures that would not adversely affect any biological resources.

Construction Impacts

The magnitude of potential impacts associated with construction is difficult to quantify at this time as most Program elements are in the early stages of design and several have yet to be sited. Generally, construction impacts on biological resources are expected to be minor as many Program elements would be constructed on land that has already been developed or has otherwise been disturbed. It is also anticipated that impacts to biological resources could be minimized or avoided by modifying Program element design and avoiding the few potential site locations that might support sensitive biological resources. However, because this evaluation is based on Program-level descriptions of Program elements, it is assumed that construction of some Program elements could result in removal or degradation of currently undeveloped land, which could support special-status species or sensitive habitats, and therefore could impact biological resources. These Program elements include:

- North County Groundwater Bank,
- New Surface Water Treatment Plant,

- Phase 1 Demineralization of Urban Wells,
- New Pipeline to Ridgemark,
- New Treated Water Storage,
- Ridgemark Recycled Water,
- Phase 2a Recycled Water Program,
- New Urban Wells,
- Cielo Vista WWTP Connection to City WRF, and
- Phase 2b Recycled Water Program.

Operational Impacts

Operational impacts on sensitive biological resources could result from implementation of the following Program elements:

- North County Groundwater Bank, and
- Demineralization of Urban Wells.

Operation of the North County Groundwater Bank could adversely affect biological resources by reducing surface and subsurface water that supports aquatic habitats, natural vegetation, and terrestrial and aquatic wildlife species. Groundwater pumping would be managed to lower the confined groundwater table in the high groundwater area to approximately 10 feet below ground surface. For the purpose of this analysis, impacts are evaluated based on the anticipated lowering of the ground water by 10 feet compared to baseline conditions in the high groundwater area. Implementation of the North County Groundwater Bank could also affect sensitive biological resources outside of the high groundwater area. Potential impacts to Pacheco Creek hydrology are of particular concern because of the special-status species and sensitive habitats it supports.

Operation of the North County Groundwater Bank would also percolate imported water supplies into the aquifer for recharge, storage, and use at later times. Operation of percolation and associated facilities could adversely affect biological resources by further altering natural hydrological conditions on Pacheco Creek, Arroyo Dos Picachos, and Arroyo de las Viboras.

The potential for biological resources to be affected by operation of demineralization facilities would depend on the concentration option and brine disposal alternative selected. Operation of evaporation ponds and brackish wetlands could affect wildlife if salts and other potentially toxic elements reach harmful levels. Other options such as chemical precipitation might have no impact on biological resources if the potential for wildlife exposure could be controlled.

This analysis of operational impacts is focused on aquatic, wetland, and riparian habitats, and the plants and animals that they support. The proposed Program operations are not expected to adversely affect upland species or habitats.

THRESHOLDS OF SIGNIFICANCE

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines, as amended. A biological resources impact would be considered significant if implementation of the proposed Program would do any of the following:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by DFG or USFWS;

- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by DFG or USFWS;

- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marshes, vernal pools, and coastal areas) or any state-protected wetlands not subject to regulation under Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan; or
- substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

IMPACT ANALYSIS

IMPACT 3.3-1 Possible Impacts to Sensitive Biological Resources Resulting from Temporary and Short-Term Project Construction Activities. *Construction of Program facilities could adversely affect sensitive habitats and special-status species. The temporary and short-term construction impacts could occur during site grading or during other ground-disturbing activities. Construction activity is expected to occur primarily in highly disturbed urban and agricultural areas that would not support important biological resources. Any Program element that might substantially affect biological resources would undergo additional environmental review and obtain required permits.* Less than significant.

Short-term (temporary) construction activities could result in the removal of sensitive habitat and the degradation of habitat that is used by special-status species. Vehicles used during construction could result in direct wildlife mortality. Construction noise could disturb wildlife, especially during sensitive nesting activities for birds. Construction in or near aquatic habitat could degrade water quality through the release and exposure of sedimentation, turbidity, and/or construction-related contaminants (e.g., fuels, lubricants, etc.), which could affect sensitive biological resources. The project proponent of each Program element would prepare a SWPPP and implement appropriate BMPs as required by the State NPDES General Construction Permit.

Although construction could substantially affect sensitive biological resources, the overall magnitude of the impact is not expected to be high for any of the Program elements with construction components. Construction activity is expected to occur primarily in highly disturbed urban and agricultural areas that would not support important biological resources. Many new Program facilities would be built on sites that have already been developed and do not support sensitive habitats or species. The Program element footprints are expected to be relatively small. The new surface water treatment plant is expected to cover less than 10 acres. A few Program facilities could require larger footprints, such as evaporation ponds associated with demineralization facilities, but facilities should be able to be sited away from sensitive habitats and special-status species.

Furthermore, any Program element that could substantially affect sensitive biological resources will conduct project-level CEQA review, and obtain and comply with applicable permits that may include CWA Section 404 Permit with USACE, ESA Section 7 Consultation with USFWS and/or NMFS, CWA Section 401 Water Quality Certification with SWRCB, and/or Fish and Game Code Section 1602 Streambed Alteration Agreement with DFG. Terms and conditions of regulatory permits could include construction requirements to further reduce impact on sensitive biological resources, and/or mitigating construction impacts through avoidance, minimization,

and/or compensation for any potential impacts to sensitive resources to ensure that project-level impacts on sensitive biological resources are reduced to a less-than-significant level.

Consequently, construction-related impacts to sensitive biological resources are considered to be **less than significant.**

Mitigation Measure: No mitigation measures are required.

IMPACT 3.3-2 Impacts to Aquatic Habitat and the Fish Community Resulting from Project Operations Affecting Groundwater or Surface Water Levels. *Impacts to aquatic habitat and the fish community could result from operation of several of the Program elements. Implementation of the North County Groundwater Bank project would involve pumping groundwater to reduce groundwater in the high groundwater area to approximately 10 feet below ground surface. The groundwater bank would also involve the percolation of surface water for aquifer recharge. Both of these activities could affect conditions in Pacheco Creek and its tributaries. Ocean discharge of brine waste associated with operation of demineralization facilities, if that brine waste discharge option is chosen, would also have the potential to substantially degrade brackish and marine aquatic habitats. Significant and unavoidable.*

Potential effects to aquatic habitats and the fish community that could result from operation of the North County Groundwater Bank would be largely dependent upon interactions between surface waters and groundwater. For example, if the existing high groundwater would support or substantially contribute to base surface flows in Pacheco Creek and tributaries, then lowering the groundwater to 10 feet below the surface could result in the depletion or reduction of surface water and associated loss or degradation of aquatic habitats during critical periods for fish, wildlife, and riparian vegetation.

Surface water interaction with groundwater is variable along different reaches of the creeks in the study area. Underlying Pacheco Creek from approximately Lovers Lane to Highway 156 (Reach 1) (Figure 3.3-3) is a relatively thick clay layer that separates surface and groundwater located below the clay layer. However, limited survey data of the creek bottom between Lovers Lane and San Felipe Road indicate that the creek has incised, possibly within 2 to 4 feet of the bottom of the clay layer, and currently insufficient elevation data exist to fully evaluate whether the clay layer is breached (GEI Consultants 2009). If the clay layer is currently breached or if it would be penetrated or breached in the future, the creek could be anticipated to more effectively interact with the confined aquifer. Without the underlying clay layer that limits the surface water from directly interacting with the groundwater, surface water flows in Pacheco Creek (in Reach 1) could become substantially losing (depleted) as a result of the groundwater being lowered. Further, lowering of high groundwater could result in reduction or complete elimination of flow from artesian wells, which could provide an important source of surface water to Pacheco Creek and other small creeks.

Because of the uncertainties regarding surface water interaction with groundwater in Reach 1, it is possible that operation of the North County Groundwater Bank (i.e., lowering of the groundwater) could result in surface water flows in the creek becoming substantially depleted on either a temporary or permanent basis. Depletion of surface water flows could, in turn, result in the loss or degradation of aquatic habitat for the native fish community, including steelhead. Potential effects to steelhead would be limited to periods when steelhead adults and/or juveniles used this reach of the creek during their upstream and downstream migrations. Substantial decreases in surface flows could result in localized and downstream conditions that would be unsuitable for migration; this would be a **potentially significant** impact. Potential effects to the remaining native fish species would be anticipated to be less severe as several of these species (e.g., roach and hitch) have adapted to over-summering in creeks with reduced flows, small isolated pools, and warm water temperatures. Nevertheless, substantial or complete dewatering of the creek, especially during critical seasonal periods such as the low summer flow period, during spawning migrations, or during juvenile steelhead emigration downstream, would result in associate reductions in habitat area for these species and this would be a **potentially significant** impact.

Near Highway 156 (Reach 2), the clay layer is thicker and it is believed that it prevents Pacheco Creek from interacting with the groundwater. Once north of the Ansaymas Fault (located approximately where Highway 156 crosses Pacheco Creek), the sediments coarsen, the clay layer is absent, and Pacheco Creek could be a losing or gaining stream, depending on natural groundwater and surface water conditions (GEI Consultants 2009). Although this area is outside of the high groundwater area that would be targeted for lowering, operation of the North County Groundwater Bank could affect the variable habitat conditions that currently exist in this reach.

Operation of the North County Groundwater Bank would also include periodic percolation of imported water supplies into the aquifer for recharge, storage, and use at later times. Although uncertainties exist regarding the specific operation and location of percolation facilities, these operations would result in water being added to areas throughout the study area that have been determined to effectively percolate surface water into the aquifer. These areas could include creek beds and constructed basins or ponds along Pacheco Creek, Arroyo Dos Picachos, and Arroyo de las Viboras. Operation of percolation facilities could affect aquatic and riparian habitats and the fish community. The magnitude of this impact would be dependent upon a number of factors including the amount and timing of releases.

The potential for aquatic habitats, the fish community, and wildlife to be affected by operation of demineralization facilities would depend on the concentration option and brine disposal alternative selected. Operation of evaporation ponds and brackish wetlands could affect fish and wildlife resources if the disposal resulted in brine waste entering a waterway providing habitat for these species. Additionally, the ocean discharge alternative would have the potential to substantially affect biological resources in the vicinity of the outfall location.

It is important to note that the project proponent, for any Program element that could substantially affect sensitive biological resources, would be required to conduct project-level environmental review pursuant to CEQA. The environmental review document would identify feasible mitigation measures for any potentially significant or significant impacts to biological resources and the development of the mitigation measures would avoid, minimize, and/or compensate for impacts to reduce them to a less-than-significant level, where feasible. The project proponent would also be required to obtain and comply with terms and conditions of all applicable regulatory permits for Program elements, which could include: CWA Section 404 Permit with USACE, ESA Section 7 Consultation with USFWS and/or NMFS, CWA Section 401 Water Quality Certification with SWRCB, and/or Fish and Game Code Section 1602 Streambed Alteration Agreement with DFG. Terms and conditions of regulatory permits could include operational requirements to further reduce impact on sensitive biological resources, and/or mitigating operational impacts through avoidance, minimization, and/or compensation for any potential impacts to sensitive resources.

Overall, potential impacts to biological resources associated with operation of the North County Groundwater Bank and Demineralization of Urban Wells Program elements are considered **potentially significant**.

Mitigation Measure 3.3-2a: Avoid and Minimize Operational Impacts to Sensitive Biological Resources to the Extent Feasible.

The project proponent shall design Program elements to avoid and minimize impacts to sensitive biological resources to the extent feasible.

Mitigation Measure 3.3-2b: Develop and Implement an Ecosystem Monitoring and Adaptive Management Plan for the North County Groundwater Bank Project.

The project proponent for the North County Groundwater Bank Program element shall develop and implement an ecosystem monitoring and adaptive management plan to avoid and minimize impacts on sensitive biological resources, including wetland, riparian, riverine habitats, and associated special-status species, which may be adversely affected by project operations. The plan shall be developed in conjunction with project-level environmental review of the North County Groundwater Bank project, and incorporated into the project description.

The plan shall describe all of the following elements:

- Monitoring requirements including groundwater levels, surface water flows, and vegetation condition and extent.
- Thresholds of significance for sensitive biological resources that can be adversely affected by implementation of the North County Groundwater Bank.
- Management actions that may be applied through adaptive management if conditions exceed the thresholds and that may be sufficient to return conditions to acceptable levels (i.e., levels that do not exceed the thresholds). These management actions shall include:
    - provision of feasible stream flows or irrigation of wetland and/or riparian areas that will reduce aquatic habitat fragmentation or disconnection and plant stress;
    - physical modifications to riverine, wetland, and/or riparian areas that will reduce aquatic habitat fragmentation, disconnection, or plant water stress (e.g., increasing hydrologic connectivity of riparian vegetation to the low-flow channel); and/or
    - ecosystem restoration that will create additional or replacement habitat.
- Procedures for annual reporting of monitoring results and decision-making during adaptive management, including selecting and implementing management actions.
- Mechanisms for funding feasible monitoring and management actions for a 10-year period.

Implementation of Mitigation Measures 3.3-2a-b could reduce impacts associated with operation of the North County Groundwater Bank Program element to aquatic habitat and the fish community. However, because the definitions of the Program elements that could result in impacts to aquatic habitat and the fish community have not yet been finalized, it is not possible at this time to accurately measure the anticipated level of impact. Therefore, it is also not possible at this time to determine if the impact would be reduced to a less-than-significant level. Implementation of Mitigation Measures 3.3-2a-b along with Mitigation Measure 3.2-3 (see Section 3.2, "Water Resources") could reduce impacts on sensitive biological resources resulting from operation of demineralization facilities but not to a less-than-significant level. Therefore, impacts to aquatic habitat and the fish community are considered **potentially significant and unavoidable.**

IMPACT 3.3-3 Impacts to Special-Status Species and Sensitive Habitats Resulting from Project Operations. *Operation of the North County Groundwater Bank and Demineralization of Urban Wells Program elements could reduce surface and subsurface hydrology in the study area. This reduction could adversely affect sensitive habitats and special-status species in the high groundwater area and other locations in the study area where operations could lower groundwater. Implementation of the North County Groundwater Bank Program element would also involve the percolation of surface water for aquifer recharge, which could adversely affect sensitive habitats and special-status species by increasing surface and subsurface flows during summer. Potential ocean discharge of brine waste associated with operation of demineralization facilities could degrade habitat for special-status species associated with brackish and marine aquatic habitat.* ***Potentially significant and unavoidable.***

Operations associated with the North County Groundwater Bank could result in substantial impacts to sensitive habitats and special-status species. Many sensitive habitats and special-status species are afforded protection, or otherwise regulated under state and federal laws. Protection of sensitive habitats and special-status species is also addressed in the City of Hollister and San Benito County General Plans (San Benito County 1995, City of Hollister 2005).

Natural watercourses, including Reach 1 of Pacheco Creek and sensitive habitats in the high groundwater area, have the highest potential for significant effects because these areas are known to support plants and animals that depend on surface and subsurface water. Sensitive habitats could also be substantially affected by operation of percolation facilities, which could adversely affect plant composition and health by artificially increasing flows and subsurface water in creeks during the dry season. Sensitive habitats in the high groundwater area would also most likely be affected because this area would be expected to have groundwater reduced 10 feet below ground surface through project operations. Implementation of the proposed Program could substantially affect fresh emergent wetlands and valley and foothill riparian communities, both of which are sensitive vegetation communities. As described above under "Sensitive Vegetation Communities," the dominant plants of fresh emergent wetlands are dominated by hydrophytic plants, many of which are dependent on readily available soil water, and thus, their growth and survival could be reduced by changes in groundwater elevation. Consequently, fresh emergent wetlands, particularly marshes, could be eliminated by lowering of groundwater levels by several feet or more. Similarly, the dominant trees and shrubs in valley and foothill riparian communities (e.g., willows) could have their growth and survival reduced by lowering of groundwater elevations (also described above under "Sensitive Vegetation Communities"). Riparian communities also could be adversely affected by changes in surface flows. As a consequence of groundwater lowering and surface flow alterations, the extent of riparian vegetation could be reduced.

Special-status species that depend on surface water, and aquatic and riparian habitat, could be adversely affected by project operations. The potential for these impacts to occur would be greatest in areas where wetland and riparian habitat would be subject to relatively low levels of disturbance, and where changes in groundwater levels would be expected to deviate most from existing conditions. Special-status species could also be substantially affected by operation of percolation facilities, which could reduce habitat suitability by artificially increasing flows and subsurface water in creeks during the dry season. Specific locations in the study area where special-status species could be adversely affected include Pacheco Creek and the high groundwater area. In both locations, species such as California red-legged frog, California tiger salamander, western pond turtle, and San Joaquin spearscale could be affected by loss and degradation of habitat. California red-legged frog is protected under ESA and California tiger salamander is protected under ESA and CESA. Any adverse affect on a species protected under ESA or CESA would be considered a significant impact. Impacts on wildlife species of special concern or plants considered as rare, threatened, or endangered, could also be significant, depending on the magnitude of the impact, which cannot be accurately quantified at this time because detailed operation plans have yet to be developed.

Operation of demineralization facilities, including evaporation ponds and brackish wetlands, could affect aquatic habitats and special-status species. Additionally, the ocean discharge alternative for brine disposal would have the potential to affect biological resources in the vicinity of the outfall location.

These potential impacts associated with operation of the North County Groundwater Bank and Demineralization of Urban Wells Program elements would be considered **potentially significant**.

> Mitigation: Implement Mitigation Measure.3.3-2a-b and Mitigation Measure 3.2-3 (See Section 3.2, "Water Resources").

Implementation of these mitigation measures could reduce the operational impacts of the North County Groundwater Bank and Demineralization of Urban Wells Program elements on sensitive vegetation communities and special-status species. However, the potential magnitude of these impacts cannot be accurately assessed at this time because the Program elements have not been fully defined. Therefore, this impact is considered **potentially significant and unavoidable.**

3.3.4 RESIDUAL SIGNIFICANT IMPACTS

Because there is not sufficient information available to provide substantial evidence that implementation of Mitigation Measure 3.3-2a-b would reduce the significance of impacts to aquatic habitat and fisheries and sensitive vegetation communities and the special-status species that inhabit them to a less-than-significant level, Impact 3.3-2 “Impacts to Aquatic Habitat and the Fish Community Resulting from Project Operations Affecting Groundwater or Surface Water Levels” and Impact 3.3-3 “Impacts to Special-Status Species and Sensitive Habitats Resulting from Project Operations” are considered potentially significant and unavoidable.

This page intentionally left blank.

3.4 LAND USE AND AGRICULTURE

3.4.1 ENVIRONMENTAL SETTING

The PEIR study area is approximately 35,294 acres. The HUA is approximately 9,423 acres and the City's sphere of influence (SOI) includes an additional 202 acres north of the northern HUA boundary totaling 9,625 acres. The remaining 25,320 acres of the PEIR study area (acreage not in the HUA or City's SOI) are in the County. The predominant land use in the PEIR study area is agriculture (approximately 48%). Agricultural land uses give way to natural land, which composes approximately 28% of the study area, near creeks and up into the foothills. The remaining 24% of land use is the urban and suburban area in the City, where most of the proposed Program would be implemented (DWR 2002). Figure 3.3-1, "Land Cover in the Study Area" shows the relative distribution of agricultural, natural, and urban lands in the PEIR study area.

The City General Plan (2005 as amended 2007) designates 15 different land uses (Table 3.4-1) in the SOI. The majority of city-administered land is designated Low Density Residential and accounts for 33.6% of the total acreage. Over half of the total designated land (59%) is designated for residential uses, totaling 5,642 acres. A relatively small proportion of the total amount of residential land is designated for commercial and residential mixed use, 286 acres or 3% of the total designated land. Only 5.8% (562 acres) of the City's SOI is designated for agricultural use. None of this agriculture-designated land is located in the current city limits.

Table 3.4-1
City of Hollister Land Use Designations

Land Use Designations		Designated Acres	Percent of Total Acres	Maximum Permitted Intensity
RR	Residential Estate	1,419	14.7	1 du/ 5 ac
LDR	Low Density Residential	3,235	33.6	1 to 8 du/ac
MDR	Medium Density Residential	326.3	3.4	8 to 12 du/ac
HDR	High Density Residential	375.5	3.9	12 to 35 du/ac
MU	Mixed-use Commercial and Residential	137	1.42	25 to 40 du/ ac
D-MU	Downtown Commercial and Mixed-use	53	0.6	25 to 40 du/ac
HO	Home Office	39	0.4	8 to 12 du/ac
WG	West Gateway Commercial and Mixed-used	57	0.6	20 to 35 du/ac
NG	North Gateway Commercial	250	2.6	2.0 FAR
GC	General Commercial	145	2.6	2.0 FAR
I/AS	Industrial/Airport Support	1,664	17.3	1.0 FAR
A	Airport	319	3.3	N/A
P	Public	457	4.7	1.0 FAR
OS	Open Space	586	6.12	0.01 FAR
AG	Agriculture	562	5.8	N/A
Total Acres:		**9,625**	**100**	

Notes: du = dwelling units; ac = acre; FAR = floor to area ratio; N/A = not applicable
Source: City of Hollister General Plan (2005 as amended 2007)

The County is primarily rural and agricultural in character, with large flatland areas as well as areas of rolling hills. The only urbanized areas within the County are the cities of Hollister and San Juan Bautista (the latter of which is not included in the PEIR study area). Both of these communities are surrounded by agricultural row crop farming, orchards, vineyards, and lands used for livestock grazing.

3.4.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Farmland Protection Policy Act of 1981

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact of federal programs with respect to the conversion of farmland to nonagricultural uses. It ensures that, to the extent possible, federal programs are administered to be compatible with state, local, and private programs and policies to protect farmland. The Natural Resources Conservation Service (NRCS) is the agency primarily responsible for implementing the FPPA.

The FPPA established the Farmland Protection Program (FPP) and the Land Evaluation and Site Assessment (LESA) system, which are discussed below in further detail. The NRCS administers the FPP, which is a voluntary program that provides funds to help purchase development rights to keep productive farmland in agricultural uses. The program provides matching funds to state, local, and tribal government entities and nongovernmental organizations with existing farmland protection programs to purchase conservation easements. Participating landowners agree not to convert the land to nonagricultural uses and retain all rights to the property for future agriculture. A minimum 30-year term is required for conservation easements, and priority is given to applications with perpetual easements. NRCS provides up to 50% of the fair market value of the easement (NRCS 2006).

The LESA system is a tool used to rank lands for suitability and inclusion in the FPP. LESA evaluates several factors, including soil potential for agriculture, location, market access, and adjacent land use. These factors are used to rank land parcels for inclusion in the FPP based on local resource evaluation and site considerations (NRCS 2006).

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Important Farmland Inventory System and Farmland Mapping and Monitoring Program

The California Department of Conservation, Office of Land Conservation, maintains a statewide inventory of farmlands. These lands are mapped by the Division of Land Resource Protection as part of the Farmland Mapping and Monitoring Program (FMMP). The maps are updated every 2 years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance. Farmlands are divided into the following five categories based on their suitability for agriculture:

- **Prime Farmland**—land that has the best combination of physical and chemical characteristics for crop production. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed.
- **Farmland of Statewide Importance**–land other than Prime Farmland that has a good combination of physical and chemical characteristics for crop production.
- **Unique Farmland**—land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, but has been used for the production of specific crops with high economic value.

- **Farmland of Local Importance**—land that is either currently producing crops or has the capability of production, but does not meet the criteria of the categories above.

- **Grazing Land**—land on which the vegetation is suited to the grazing of livestock.

Other categories used in the FMMP mapping system are "urban and built-up lands," "lands committed to nonagricultural use," and "other lands" (land that does not meet the criteria of any of the other categories). Figure 3.4-1, "Farmland Map" shows the FMMP mapping designations in the PEIR study area. The acres of FMMP farmland are listed in Table 3.4-2. In the study area, Important Farmland comprises 51.19% of the total amount of land. Grazing land accounts for 20.34%, urban or built-up land 16.07%, other land 12.18%, and water 0.23% of the total amount of land.

Table 3.4-2
FMMP Farmland Designations in the PEIR Study Area

Land Code and Description		Acres	Percent of Total Acres
D	Urban or Built-up Land	5,669.4	16.07
G	Grazing Land	7,176.9	20.34
L	Farmland of Local Importance	4,584.1	12.99
P	Prime Farmland	10,827.8	30.68
S	Farmland of Statewide Importance	2,162.7	6.13
U	Unique Farmland	487.5	1.38
W	Water	80.1	0.23
X	Other Land	4,298.8	12.18
Total Acres:		**35,287.3**	**100**

Source: FMMP 2006 and 2008

Williamson Act Contracts

The California Land Conservation Act of 1965, commonly known as the Williamson Act, enables local governments to enter into contracts with private landowners to establish "agricultural preserves" consisting of lands devoted to agricultural uses and other uses compatible therewith. Cancellation of a Williamson Act contract by a contract holder involves an extensive review and approval process. The local jurisdiction approving the cancellation must find that the cancellation is consistent with the purpose of the California Land Conservation Act or is in the public interest. A Williamson Act contract is deemed null and void when a public agency acquires Williamson Act land for a public improvement (Government Code Section 51295).

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of Hollister General Plan

The land use diagrams in the City General Plan assigns land use designations, which define appropriate land uses in the designated areas. The zoning codes are used to implement the policies and provisions of the City General Plan, which contains land use goals and policies intended to guide development and discourage incompatible land uses. The following land use goals are applicable to the proposed Program:

> **GOAL LU2:** Ensure that public utilities and infrastructure adequately meet the demand for services placed on them by existing and future commercial and residential users.

GOAL LU3: Develop and maintain attractive landscaping on public and private properties, open space, and public gathering spaces.

GOAL LU6: Promote orderly and balanced growth within Hollister's planning area boundaries.

GOAL LU9: Encourage development patterns that promote energy efficiency and conservation of natural resources.

The City recognizes the importance of agriculture to the community and protects agricultural lands by maintaining parcels large enough to sustain agricultural production, preventing conversion to nonagricultural uses, and prohibiting uses that are incompatible with long-term agricultural production. In the Open Space element of the City General Plan, Goal OS-2, "Preserve viable agricultural activities and lands," is implemented by the following City policies:

- **Policy OS2.1 Premature Conversion of Prime Farmland:** Whenever possible, minimize the premature conversion of prime farmland to nonagricultural uses by directing urban growth toward portions of the Hollister Planning Area which have not been identified as prime farmland.

- **Policy OS2.2 Coordination with San Benito County to Preserve Prime Farmlands:** Encourage the County of San Benito to maintain existing County land use policies that discourage urban development in rural areas within the County as a way to ensure continuing agricultural operations within portions of the Hollister Planning Area. Coordinate with the County of San Benito in efforts to maintain prime farmlands in active agricultural use whenever possible and in all efforts to maintain the continued economic viability of agriculture within the Hollister Planning Area.

- **Policy OS2.3 Williamson Act Contracts:** Encourage the sponsors of subdivisions on agriculturally viable land to enter and maintain prime soils of the proposed subdivision in Williamson Act contracts as a means of off-setting the loss of agricultural land.

- **Policy OS2.4 Residential Development Near Agricultural Areas:** Require developers to inform potential buyers of homes near agricultural areas of the possible hazards associated with the application of pesticides/herbicides and nuisances from other cultivation practices. In those cases where the County of San Benito's "Right-to-Farm" Ordinance applies to the City review of projects, homeowners shall also be informed of this ordinance by developers.

San Benito County General Plan

The 1992 San Benito County General Plan identifies goals that the County General Plan is trying to achieve and objectives on how to achieve the goals. The following goals for land use are applicable to the proposed Program:

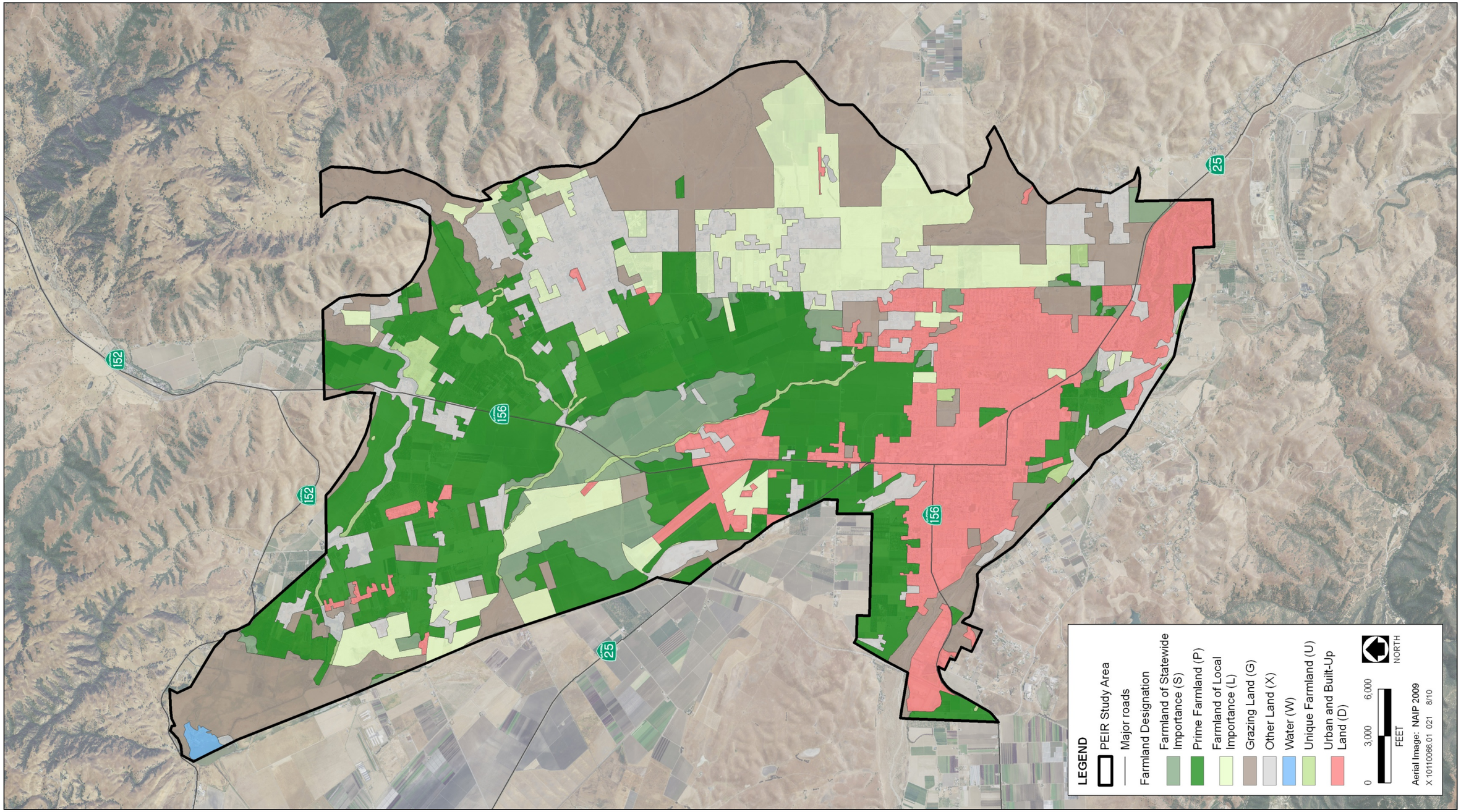
GOAL 1: To maintain the County's rural atmosphere.

GOAL 3: To allot sufficient area within each type of land use to provide for future needs.

GOAL 5: To provide for a diversified economic base for the County.

GOAL 6: To establish a working relationship with the Cities of San Juan Bautista and Hollister in order to encourage the cooperative planning efforts for all jurisdictions involved.

GOAL 7: To maintain the character and the natural amenities of San Benito County while providing for its growth.



Source: FMMP 2006 and 2008

FFMP Land Use Designations in the PEIR Study Area

Figure 3.4-1

GOAL 8: Develop a growth management program that will stabilize the rate of population growth, provide opportunities for housing for a full spectrum of the population in San Benito County, and provide for public health, safety, and general welfare.

GOAL 9: Develop a growth management program that will stabilize the rate of population growth in San Benito County while avoiding adverse environmental consequences to natural resources and enhancing existing quality of life.

The County General Plan includes the following policies regarding consideration of agricultural resources:

- **Policy 1:** The agriculturally designated areas of the County shall be developed at a low-density use (5 acre minimum lot size).
- **Policy 2:** The type of uses allowed within the agriculturally designated areas shall be related to the suitability of the soil resources, climate, and water supply. The types of uses allowed on most agriculturally designated areas within the County include agriculture, agricultural processing, grazing, and land in its natural state, wildlife refuges, and low intensity residential. Uses subject to use permit approval include low intensity recreational facilities, mineral extraction and processing, and also institutional uses and uses that, by their nature, should be located in undeveloped areas.
- **Policy 3:** Grade 1 soils as defined in the Soils Survey of San Benito County shall be the highest priority for protection of soil resources.
- **Policy 4:** Development proposals adjacent to Grade 1 agricultural lands and soils suitable for the production of row crops, flowers, or orchards shall be required to mitigate potential land use conflicts with agricultural operations.

3.4.3 Environmental Impacts and Mitigation Measures

Analysis Methodology

Evaluation of the proposed project's potential impacts on land use and agricultural resources was based on a review of the planning documents pertaining to the study area, including the 1992 San Benito County General Plan, the City of Hollister General Plan, and soil surveys of San Benito County. In addition, the California Department of Conservation's (DOC's) Important Farmland maps (DOC 2008) and California Land Conservation Act (i.e., the Williamson Act) maps for the County were used to determine the agricultural significance of the lands in the study area.

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on Appendix G of the State CEQA Guidelines, as amended. The proposed project was determined to result in a significant effect on agricultural resources or land use planning if it would:

- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect;
- conflict with any applicable habitat conservation plan or natural community conservation plan;
- conflict with existing zoning for agricultural use or a Williamson Act contract; or

- convert or result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural uses.

IMPACT ANALYSIS

Some of the proposed Program facilities, such as the new WTP, new urban wells, and the centralized demineralization plant, could be located near residential areas; none would create a new division through any community or residential cluster. Therefore, no impacts related to the physical division of communities would result from implementing the proposed Program elements, and this issue is not discussed further.

The threshold related to Williamson Act contracts is not relevant to this analysis because Williamson Act contracts are deemed null and void when Williamson Act land is acquired for a public improvement by a public agency (Government Code Section 51295).

IMPACT 3.4-1 Conflict with Land Use Plans and Policies. *The proposed Program would not conflict with an applicable land use plan an agency with jurisdiction over the project but could conflict with a policy adopted for the purpose of avoiding or mitigating an environmental effect.* ***Less than significant****.*

The proposed Program would be implemented in the City and the County. The City and County have adopted general plans that include different elements including land use, housing, circulation, community services and facilities, open space and agriculture, natural resources and conservation, and health and safety. The proposed Program is not a development project. The proposed Program would serve development that is approved by the City and County in accordance with their respective land use elements. Construction and operation of water supply, wastewater, and recycled water Program elements are consistent with the land use elements for City and County development because water services are needed to satisfy existing and future demand for water. Without Program implementation, approval of developments consistent with the land use elements could be constrained because of the lack of water service. Therefore, the Program does not conflict, but rather, allows the City and County's land use elements to be realized.

Implementation of the Program has the potential to conflict with policies in the other City or County General Plan elements that have been adopted to minimize environmental impacts. Potential impacts on important farmland are evaluated in the following impact statement. Inconsistencies with City and County General Plan policies are not, in and of themselves impacts on the physical environment. Potential impacts of the proposed Program elements on the physical environment are evaluated in the respective environmental resource sections of this PEIR:

- Section 3.2, "Hydrology and Water Quality," for potential effects on existing well production;
- Section 3.3, "Biological Resources," for open-space and natural habitat conservation;
- Section 3.10, "Public Health and Hazards," for locating facilities within fault zones;
- Section 3.12, "Air Quality," for potential odors and emissions near sensitive receptors;
- Section 3.13, "Noise," for short-term and temporary construction impacts on sensitive receptors; and
- Section 3.15, "Visual Resources," for changes in the visual context of the study area.

Because the proposed Program (1) would not conflict with an applicable land use element, (2) potential inconsistencies with policies in the City and County General Plan elements are not in and of themselves impacts on the physical environment, and (3) because impacts on the environment that result from inconsistencies with the applicable City or County General Plan element are mitigated to the extent feasible, this impact would be **less than significant**.

Mitigation Measure: No mitigation measures are required.

IMPACT 3.4-2 Conversion of Important Farmland to Nonagricultural Uses. *The specific locations and designs for many of the Program facilities have not yet been identified. It is possible that a loss of farmland could occur as a result of the construction or operation of a Program element. Implementation of the North County Groundwater Bank could improve high groundwater conditions in areas that are not currently suitable for agricultural use and thereby increase the amount of productive farmland in the PEIR study area. However, it is too speculative to state whether the net amount of productive farmland in the study area would be would be less, the same, or greater as a result of Program implementation. Even if a net gain of agricultural land was possible in the future, a temporary loss of farmland could occur when a Program facility is constructed.* ***Significant and unavoidable.***

Most Program elements would be located in the City boundaries where there are no designated agricultural land uses. Some Program elements would be located in the HUA and the City's SOI, where only approximately 5.8% of the land (562 acres) is designated for agriculture. However, specific locations and designs for many Program facilities have not yet been identified. The proposed Program would include construction of a new WTP, wells and ancillary facilities for a groundwater bank, demineralization facilities (including byproduct disposal areas), and treated water storage facilities. Some of these facilities could potentially be sited in areas classified by the FMMP as Prime or Unique Farmland or Farmland of Statewide Importance. Monitoring and production wells and pumps may need to be installed in some locations with these FMMP designations, removing edges of fields from agricultural use. Land at construction staging areas and access haul roads could be temporarily removed from agricultural production to accommodate preconstruction and construction activities. Construction activities that occur during the growing season would temporarily hinder plant growth and result in a temporary loss in agricultural productivity if staging areas could not be sited on disturbed or fallow sites.

Implementation of the North County Groundwater Bank could improve high groundwater conditions in areas that are not currently suitable for agricultural use and thereby increase the amount of productive farmland in the PEIR study area. As shown on Figure 3.3-1, "Land Cover in the Study Area," and summarized in Table 3.3-1, "Acreage of Land Cover Types by Location in the Study Area," up to 1,197 acres of natural land could be made available to agricultural use. However, it is too speculative to state that the acreage of productive farmland reclaimed would be less than, the same, or greater than the amount of farmland converted by construction of other Program facilities. Even if a net gain of agricultural land would occur in the future as a result of Program implementation, a temporary loss of farmland could occur when the facility is constructed and persist for some time afterwards. Conversion of Prime or Unique Farmland or Farmland of Statewide Importance would be a **potentially significant impact**.

Mitigation Measure 3.4-2: Minimize Important Farmland Conversion to the Extent Practicable and Feasible.

The project proponent shall ensure that the following measures are implemented with regard to Prime Farmland, Unique Farmland, and Farmland of Statewide Importance to minimize impacts on these lands.

a) Sites shall be configured to minimize the fragmentation of lands that are to remain in agricultural use. Contiguous parcels of agricultural land of sufficient size to support their efficient use for continued agricultural production shall be retained to the extent practicable and feasible.

b) To the extent feasible, when determining the footprint of a Program element (e.g., water treatment plant, wells, and evaporation ponds) on agricultural land, the most productive topsoil from the construction footprint shall be salvaged and redistributed to less productive agricultural lands in the vicinity of the construction area that could benefit from the introduction of good-quality soil. By agreement between the project proponent or landowners of affected properties and the recipient(s) of the topsoil, the recipient(s) would be required to use the topsoil for agricultural purposes.

c) During Program element construction, use of utilities that are needed for agricultural uses (including wells, pipelines, and power lines) and of agricultural drainage systems shall be minimized so that agricultural uses are not disrupted.

d) Minimizing disturbance of Important Farmland and continuing agricultural operations during construction shall be implemented by the following measures:

- locating construction laydown and staging areas on sites that are fallow, already developed or disturbed, or to be discontinued for use as agricultural land; and
- using existing roads to access construction areas, to the extent possible.

e) Easements shall be acquired at a 1-to-1 ratio of acreage acquired to acreage of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, and the lands on which the easements are acquired shall be maintained in agricultural use.

Implementing this mitigation measure would reduce the potential for impacts to Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, but would not reduce the impact to a less-than-significant level because conversion of Important Farmland could still occur. It is too speculative to determine if the amount of farmland productivity gained from operation of the North County Groundwater Bank would be equal to or exceed the acreage removed from agricultural production. This impact would be **potentially significant and unavoidable.**

3.4.4 Residual Significant Impacts

The conversion of some designated farmland would be a residual significant and unavoidable impact because implementation of Mitigation Measure 3.4-2 would not ensure that no Prime Farmland, Unique Farmland, and Farmland of Statewide Importance would be converted to nonfarming use.

3.5 CULTURAL AND HISTORIC RESOURCES

3.5.1 ENVIRONMENTAL SETTING

PREHISTORY

The earliest well-documented entry and spread of humans into California occurred at the beginning of the Paleo-Indian Period (12000–8000 B.P.). Social units are thought to have been small and highly mobile. Known sites have been identified in the contexts of ancient pluvial lake shores and coast lines, evidenced by such characteristic hunting implements as fluted projectile points and chipped stone crescent forms. Prehistoric adaptations over the ensuing centuries have been identified in the archaeological record by numerous researchers working in the area since the early 1900s, as summarized by Fredrickson (1974:1[1]:41-53) and Moratto (1984).

Few archaeological sites have been found in the Bay Area that date to the Paleo-Indian or the Lower Archaic (8000–5000 B.P.) time periods; however, archaeologists have recovered a great deal of data from sites occupied by the Middle Archaic period. During the Middle Archaic Period (5000–2500 B.P.), the broad regional patterns of foraging subsistence strategies gave way to more intensive procurement practices. Subsistence economies were more diversified, possibly including the introduction of acorn processing technology. Populations were growing and occupying more diverse settings. The onset of status distinctions and other indicators of growing sociopolitical complexity mark the Upper Archaic Period (2500 B.P.–1300B.P.). Exchange systems become more complex and formalized, and evidence of regular, sustained trade between groups was seen for the first time.

Several technological and social changes characterized the Emergent Period (700–1800). Territorial boundaries between groups became well established. It became increasingly common that distinctions in an individual's social status could be linked to acquired wealth. In the latter portion of this period (1500–1800), exchange relations became highly regularized and sophisticated. The clamshell disk bead became a monetary unit for exchange, and increasing quantities of goods moved greater distances and specialists arose to govern various aspects of production and exchange.

ETHNOGRAPHY

The study area and the surrounding region were most recently occupied by Costanoan Indians, members of the Penutian linguistic family. The word "Costanoan" was derived from a Spanish word meaning "coast people" or "coastal dwellers" who occupied the area roughly from Carquinez Strait and the northern tip of the San Francisco peninsula to the region south of Monterey Bay and east to the Diablo Range (Levy 1978, Basin Research Associates 2004). The Costanoans, also known as the Ohlone, entered this region approximately 1,500 years ago, coming from the Delta region and displacing earlier Hokan speakers.

Several sources describe the lifeways, subsistence patterns, material culture, and belief systems of the native peoples who once lived along the edges of the San Francisco Bay, including Powers (1877), Kroeber (1925), Harrington (1942), Levy (1978), Margolin (1978), and Milliken (1995, 1997).

Ohlone lifeways remained essentially unchanged for centuries until the Spanish expeditions in the 18th century encountered Ohlone tribes all along the coastline and in the interior regions. The principal goal of Spanish and ultimately Mexican exploratory expeditions was to establish missions, the primary religious and governmental institution in California at the time. After moving to a mission, Ohlone life changed dramatically to regimented days spent in agricultural fields or other labor, interacting with people from other tribes, isolation from family members, and disease to which they had little or no immunity. Those that attempted to flee were often brought back by force but, in spite of these factors, increasing numbers of Indians came to the missions, particularly in the 1790s. Toward the turn of the century, some of the more distant tribes tried to organize resistance to the missionization effort, but these efforts were defeated by the Spanish military. The defeat of warriors and/or spiritual leaders and the intimidation of the tribes led to ever-greater stress to succumb to the invaders. The

lingering effects of this included depression, disease, and social marginalization of those who still tried to rely on religious rituals or traditional ways of life that no longer worked (Milliken 1995). However, today the Ohlone are reinvesting in their culture and through new-found political, economic, and social influence have once again become a thriving native community.

HISTORIC-ERA SETTING

Although initial European contacts with Native American (see Beck and Haas 1974) groups probably had little impact upon their societies, they laid the foundation for future Spanish control of the region and the establishment of a lasting Euro-American influence. At a time when the Spanish civil authority and the Catholic Church were the primary governing institutions, the establishment of missions was an important step in the development of Spanish power throughout California. The most important of these in the Hollister region was the Mission San Juan Bautista (Saint John the Baptist), founded by Father Fermín Lasuén on June 24, 1797. Temporary buildings were replaced by a new structure, completed in 1812, which was expanded and modified several times during the early decades of the 19th century. The church itself has been in continual service since its construction and is the largest of all the historic mission churches in California (Hoover et al. 1990:299; OHP 1990:175).

Aside from the founding of Spanish missions during the late 18th century and the early 1800s, the granting of large tracts of land by the Mexican government, starting in the 1830s, was the most significant historic-era development to occur in many parts of California, including what would become San Benito County. In the Hollister area, a number of such grants were awarded to Mexican and American citizens including the *Rancho San Justo* (34,620 acres), *Rancho Bolsa de San Felipe* (6,795 acres), and *Rancho Cienega del Gabilan* (48,781 acres) (Beck and Haase 1974:31). In 1855, Flint, Bixby & Co bought the Rancho San Justo from Francisco Perez Pacheco, with the understanding that William Welles Hollister would buy a one-half interest in the ranch in 1857. In 1868, Colonel Hollister sold his portion (20,773 acres) of the Rancho San Justo to the San Justo Homestead Association.

The San Justo Homestead Association subdivided the land into homesteads and set aside 100 acres for a town site. The association voted to name the future city “Hollister,” after the prior owner, William Welles Hollister. The City incorporated in 1868 and became the seat of government for the newly formed San Benito County in 1874. Surrounded by fertile and alluvial soils, Hollister primarily derived its importance from its traffic in grains grown in the upper San Benito Valley. Some of the best wheat and hay in the state was raised here, and by 1890, Hollister had become known as "Hay City" for being the primary distribution point for the high volume of hay produced in the vicinity.

As the seat of San Benito County, Hollister continues to play a major role in the political and economic development of the region. Hollister’s population, like that of many smaller towns in central California, has increased dramatically in recent decades. In 1980, the City’s population was just over 11,000. With approximately 37,300 residents today, Hollister is home to many important local businesses, and it serves as a major regional transportation hub as well as a residential community for Bay Area workers.

Cultural and Historic Resources Documented in the Study Area

Although only a fairly small portion of the study area has been subject to cultural resources investigations, a number of archaeological sites have been documented in the region and several historic districts have been established within the City of Hollister. The City General Plan (2005) notes the presence of several early Native American archaeological sites (site designations CA-SBN-14, CA-SBN-15, and CA-SBN-181) within or immediately adjacent to present-day Hollister. Many comparable sites likely exist but have yet to be discovered and recorded, given that so little of the City and the study area have been subject to formal cultural and historic resource surveys. This probability is highlighted in the City General Plan, based on data provided to the City by the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS). Considering the proximity of critical natural resources such as potable water and the occurrence of natural

landforms conducive to prehistoric settlement and activities in particular (generally level topography, well-drained soils, and river terraces), large portions of the City of Hollister and the study area have been determined to be highly sensitive for prehistoric archaeological resources.

Within the City, numerous buildings and structures have been recorded as historical resources and many more likely meet the criteria for consideration as “historic” but remain to be documented. Two historic districts have been delineated within the City, both currently listed on the National Register of Historic Places (NRHP) and described below.

Downtown Hollister Historic District

The Downtown Hollister Historic District was listed on the NRHP in January 1993. It is concentrated along San Benito Street and intersecting streets between 4th and South Streets. The district is representative of the character of the City's downtown prior to World War II and has a period of significance that spans the years from 1880 to 1942. As of the 1993 NRHP nomination, the district included 54 buildings (65% of total) that contribute to the historic character of downtown and 29 noncontributing buildings. San Benito Street, on which about half of the district’s buildings front, forms the “spine” of the district, extending north and south for more than four blocks. Buildings within the district are primarily in retail use; others include civic and religious buildings, auxiliary structures such as garages and warehouses, a few residential units, and one office building. The design of buildings within the district is utilitarian; however, a range of architectural styles is represented including Italianate, Late Gothic Revival, Greek Revival, Neo-Classical Revival, and Mediterranean Revival. All of the contributing buildings within the district retain original materials and design elements above the first floor. These include original cornice treatments, ornamentation, and windows. Although only a few of the retail buildings have unaltered storefronts, many of the contributors not in retail use have first stories without substantial modification.

Monterey Street Historic District

The Monterey Street Historic District was listed on the NRHP in December 1992 and reflects the architectural development of Hollister more clearly than any other group of buildings in the City. Monterey Street, an element of Hollister's original street grid, forms the spine of the district and extends north and south for six blocks. The district is comprised primarily of single-family residences constructed between 1875 and 1941, and depicts changes and continuities in residential architecture from the founding of the City to the end of the Great Depression. The district contains 252 buildings, of which 188 (75%) contribute to its historic character. Major contributing structures mark each intersection.

Representative architectural styles include Queen Anne, Gothic Revival, Italianate, Craftsman, Prairie, and Gable-Front-and-Wing. Many of the buildings within the district display very sophisticated designs, rendered with care and craftsmanship. Generally, the buildings within the Monterey Street Historic District have suffered only minor alterations over the years, including additions, porch modifications, residing, and window replacement. However, many buildings appear virtually unaltered since the time of their construction, and many others have alterations that date from the period of significance. All of the district's contributing buildings retain important materials and design elements from the close of the period of significance. These include siding, roof shape and sizes, door and window openings and surrounds, porch location, and ornamentation. In almost all cases, the elements are original rather than pre-1942 alterations.

3.5.2 REGULATORY CONTEXT

No federal plans, policies, regulations, or laws apply to the proposed Program, relative to cultural resources. State, regional, and local plans, policies, and regulations that must be considered are described in the following subsections.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Environmental Quality Act

Before discretionary projects are approved and agency undertakings begin in California, the potential impacts of a proposed Program on archaeological and historical resources must be considered (Public Resources Code Sections 21083.2 and 21084.1 and the State CEQA Guidelines [California Code of Regulations (CCR) Title 14, Section 15064.5]).

CEQA uses a broad definition of what constitutes a cultural resource, outlined in CCR Title 14, Section 4852. Cultural resources can include traces of prehistoric habitation and activities, historic-era sites and materials, places used for traditional Native American observances, or places with special cultural significance. In general, any trace of human activity over 50 years in age must be treated as a potential cultural resource. Because projects can extend over a period of years from planning to implementation stages, however, 45 years is the minimum age generally accepted for resources to be considered historic for the purposes of CEQA. Only those cultural resources considered significant under CEQA require the mitigation of adverse Program impacts. A significant cultural resource under CEQA is referred to as a "historical resource" regardless of temporal or cultural association. In general, a historical resource is one that is presently listed or has been recommended for listing on the California Register of Historical Resources (CRHR):

A cultural resource is considered to be "historical" if it meets any of the following criteria for listing on the CRHR:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. is associated with the lives of persons important in our past;

3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value; or

4. has yielded, or may be likely to yield, information important in prehistory or history.

To be eligible for listing on the CRHR, a property must have both historic significance and integrity. Integrity is judged by considering the property's retention of location, design, setting, workmanship, materials, feeling, or association.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of Hollister General Plan

The 2005 City of Hollister General Plan presents a number of goals, policies, and implementation measures in the "Land Use and Community Design" section, designed to protect and preserve the historic character of the City:

- **Policy LU1.2** Historical Preservation Ordinance
  Supplement the existing Historical Preservation Ordinance with an inventory and designation of potential sites and structures of architectural, historic, archeological, and cultural significance.

- **Policy LU1.3** Design Review
  Require proposals for residential and nonresidential development projects adjacent to designated landmarks to undergo design review.

- **Policy LU1.4** Historical Building Code
  Adopt a Historical Building Code that exceeds state standards.

- **Policy LU.L** Inventory and Designate Historical Sites
  The City should initiate an inventory of structures or sites that may have architectural, historical, archeological, or cultural significance to the community. Hollister should then consider action to list the most significant structures or sites on the California Register of Historical Resources and the National Register of Historic Places.

Hollister Community Development Project Area Plan

The Hollister Community Development Project Area Plan (1983 and amended in 2002) is a redevelopment plan that includes downtown Hollister and the surrounding area, as well as a 300-acre area surrounding and including the Hollister Municipal Airport. Among the general goals of the redevelopment plan is the enhancement of the physical environment of the redevelopment area and the emphasis of its favorable characteristics. A copy of the redevelopment plan is on file at the City of Hollister Redevelopment Agency. On-going actions and projects in the redevelopment plan relevant to Hollister's historic resources include redevelopment and revitalization, rehabilitation and seismic retrofitting, and commercial strip revitalization. These actions and projects of the Redevelopment Agency reflect the implementation of the major components of the redevelopment plan's downtown strategy and plan.

3.5.3 Environmental Impacts and Mitigation Measures

Analysis Methodology

Methods employed for this cultural and historic resources assessment consisted of archival research conducted through the NWIC, the analysis of those data by an AECOM cultural resource specialist, and a review of materials curated in AECOM's in-house cultural resources library. All aspects of this study were conducted by an AECOM cultural resources expert meeting the Secretary of the U.S. Department of Interior's Professional Qualification Standards (36 CFR Part 61; 48 FR 44716).

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, as amended, an impact on cultural and historic resources would be significant if implementation of the proposed Program would:

- cause a substantial adverse change in the significance of a unique archaeological resource or a historical resource as defined in Section 21083.2 of CEQA and Section 15064.5 of the State CEQA Guidelines, respectively;

- directly or indirectly destroy a unique paleontological resource or site; or

- disturb any human remains, including those interred outside of formal cemeteries.

The State CEQA Guidelines (CCR Section 15064.5) define "substantial adverse change" as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings.

Impact Analysis

The following Program elements were evaluated for their potential to cause impacts to cultural and historic resources. No impacts were identified as earth-moving activities would be nonexistent or located at already disturbed sites:

- **Purchase of Additional Imported Supply:** This Program element would use existing facilities and would not involve earth-moving activities.

- **Non-Structural Solutions**: The Program Non-Structural Solutions include water conservation, salinity education, a water softener ordinance, and other measures; these Program elements would reduce water demands and improve water quality, and they would not involve earth-moving activities.

- **Lessalt WTP Upgrades**: These upgrades would occur at the Lessalt WTP within the footprint of an already disturbed area.

- **Ridgemark WWTP Upgrades**: These upgrades would occur at the Ridgemark WWTP within the footprint of an already disturbed area.

- **Demineralization of Existing Urban Wells**: These improvements would be extremely localized at already disturbed urban well sites.

- **Operational Elements of the Program** (after construction is completed, including the North County Groundwater Bank, Lessalt WTP, new WTP, Ridgemark WWTP, and demineralization at existing urban wells or centralized plant): The Program element operations would not involve earth-moving activities.

Because this evaluation is based on Program-level descriptions of Program elements, it is assumed that construction of some Program elements could result in disturbance of currently undeveloped land, which could that could impact previously unidentified cultural resources. These Program elements include:

- North County Groundwater Bank,
- New Surface Water Treatment Plant,
- Phase 1 Demineralization of Urban Wells,
- New Pipeline to Ridgemark,
- New Treated Water Storage,
- Ridgemark Recycled Water,
- Phase 2a Recycled Water Program,
- New Urban Wells,
- Cielo Vista WWTP Connection to City WRF, and
- Phase 2b Recycled Water Program.

IMPACT 3.5-1 Damage to or Destruction of Documented Significant Cultural and Historic Resources during Project Construction. *Field and archival research has identified numerous prehistoric and historic-era cultural and historic resources within and adjacent to the study area. These include several prehistoric sites, historic-era buildings and structures, and two historic districts that are presently listed on the National Register of Historic Places. The proposed Program has the potential to adversely impact the integrity and/or setting of these resources.* *Less than significant with mitigation.*

Archival research documented the presence of several early Native American archaeological sites (CA-SBN-14, CA-SBN-15, and CA-SBN-181) within the study area. Although none of these sites have been evaluated for CRHR eligibility, CA-SBN-14 is of particular concern as it was documented to contain Native American human interments. All of these sites should, for planning purposes, be considered CRHR-eligible ("historical" resources) pending further research. In addition to these documented Native American resources, other historic-era buildings and sites and the Downtown Hollister Historic District and the Monterey Street Historic District are listed on the NRHP and contain various buildings that are eligible under both the NRHP and the CRHR. The proposed Program facilities would not be constructed such that documented significant cultural and historic resources would be adversely affected. The known Native American archaeological sites, Downtown Hollister Historic District, Monterey Street Historic District, and other historic-era buildings and sites would likely be avoided

during design and siting of Program elements. Although it is highly unlikely that any documented sites would be disturbed, specific footprints of many proposed Program facilities are undefined. Consequently, a possibility would remain that a documented cultural and historic site could be adversely affected. Any Program-related impacts on documented prehistoric and historic-era resources would be considered a significant impact. Therefore, this impact is **potentially significant**.

Mitigation Measure 3.5-1: Develop and Implement a Mitigation Plan to Avoid and Minimize Impacts on Documented Significant Cultural and Historic Resources, if Necessary.

If a Program element would adversely affect a documented cultural or historic resource that is presently listed or potentially eligible for listing on the National Register of Historic Places or California Register of Historical Resources, the project proponent shall develop and implement a mitigation plan prior to construction activities to avoid and minimize impacts where feasible. The mitigation plan would develop measures designed to reduce impacts through, for example, project redesign and resource avoidance. The mitigation plan would contain the following elements as necessary:

- complete an evaluation of identified resources and determine the effect of the Program element on all eligible or listed resources;
- consult with the State Historic Preservation Officer (SHPO), and other consulting parties such as Native American individuals and organizations, to develop appropriate avoidance, treatment, or mitigation;
- document the site and avoid further effects by protecting the resource by appropriate avoidance measures where feasible;
- where physical impacts cannot be avoided and such physical impacts could damage the data these sites contain, develop further mitigation such as archival research, subsurface testing, and data recovery excavations to retrieve those values that contain significance for archaeology after consultation with and the agreement of the Native American most likely descendent (MLD), where possible; and
- monitor potentially destructive construction activities in the vicinity of documented resources.

Mitigation Measure 3.5-1 would reduce potentially significant impacts to documented significant cultural and historic resources to **less than significant**.

IMPACT 3.5-2 Damage to or Destruction of Significant Undocumented Cultural and Historic Resources during Construction. *Subsurface disturbances could potentially destroy or damage as-yet-undiscovered prehistoric or historic-era cultural and historic resources. If these resources were to represent "unique archaeological resources" or "historic resources" as defined by CEQA, a significant impact would occur. Less than significant with mitigation.*

The proposed Program is located in a region where significant prehistoric and historic-era cultural resources have been documented. A number of historical resources (per CEQA definitions) and NRHP-listed historic districts have been documented within the study area, suggesting that similar but presently undocumented resources could be uncovered and affected by the proposed Program during construction activities. If such resources were determined to be unique or historical, a significant impact could occur. Therefore, disturbances to these resources would be **potentially significant**.

Mitigation Measure 3.5-2a: Conduct a Record Search of the California Historical Resources Information System, Conduct Cultural Resources Preconstruction Inventories Prior to Project-Related Ground-Disturbing Activities, and Provide Construction Worker Training Prior to Construction Activities.

In accordance with CEQA guidance, prior to the commencement of ground-disturbing activities, the project proponent shall engage a qualified professional cultural resources specialist. The specialist shall request a record search from the NWIC of the CHRIS, conduct archaeological and historic architecture preconstruction surveys of the project construction footprint, and provide construction worker training. These surveys will identify the presence of prehistoric and/or historic-era sites, buildings, structures, features, artifacts, or other culturally significant properties. Identified cultural resources shall be assessed as to their CRHR-listing eligibility and further appropriate and feasible measures shall be conducted, as specified in Mitigation Measure 3.5-2b.

Before the start of any earth-moving activities for any Program element, the project proponent shall retain a qualified archaeologist to train all construction personnel involved with earth-moving activities, including the site superintendent, regarding the possibility of encountering cultural resources, the appearance and types of cultural resources likely to be seen during construction, and proper notification procedures should cultural resources be encountered.

Mitigation Measure 3.5-2b: If Unrecorded Cultural Resources Are Encountered during Project-Related Ground-Disturbing Activities, Stop Work, Contact a Qualified Cultural Resources Specialist to Assess the Potential Significance of the Find, and Avoid or Treat Resources Appropriately.

If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, and structure/building remains) is made during Program-related construction activities, the project proponent shall:

- immediately halt ground disturbances in the area of the find;
- retain a qualified professional archaeologist to evaluate the discovery and determine whether the resource is potentially significant, per the CRHR;
- develop appropriate mitigation to protect the integrity of the resource and protect additional resources from being affected; and
- implement Mitigation Measure 3.5-1, as appropriate.

Implementing Mitigation Measures 3.5-1 and 3.5-2b would reduce the potential to adversely affect cultural and historic resources to **less than significant** because all necessary and feasible measures would be taken to avoid, minimize impacts to, and archive as necessary any significant undocumented cultural or historic resource discoveries.

IMPACT 3.5-3 Damage to or Destruction of Inadvertently Discovered Human Remains. *Subsurface disturbances could potentially uncover unmarked historic-era or prehistoric burials.* ***Less than significant with mitigation.***

Although only one archaeological occurrence of human remains within the study area has been documented (CA-SBN-14), other unmarked and undocumented human interments and remains are likely present within the study area that could be affected by Program-related ground-disturbing activities. California law recognizes the need to protect historic-era and Native American human burials, skeletal remains, and items associated with Native American interments from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Section 7050.5 and Section 7052 and California Public Resources Code Section 5097. If any human remains were unearthed during ground-

disturbing activities that are associated with some Program elements, particularly any human remains that were determined to be Native American in origin, a **potentially significant** disturbance of human remains would occur.

Mitigation Measure 3.8-3: If Human Remains Are Uncovered during Ground-Disturbing Activities, Stop Potentially Damaging Excavation in the Area of the Burial, Contact the San Benito County Coroner and a Professional Archaeologist to Determine the Nature and Extent of the Remains, and Follow Established Processes for Treatment of Remains.

The project proponent shall require that if human remains are uncovered during ground-disturbing activities for any Program element, the contractor or construction staff shall immediately contact the San Benito County Coroner's Office and stop potentially damaging excavation activities in the area of the burial. The project proponent shall also contact a professional archaeologist to determine the nature and extent of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]).

Following the coroner's findings, the project proponent, an archaeologist, and the MLD (as designated by the NAHC) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in California Public Resources Code Section 5097.9.

The project proponent shall ensure that the immediate project vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further ground-disturbing activity until consultation with the MLD has taken place. The MLD shall have 48 hours to complete a project site inspection and make recommendations after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, avoidance and preservation in place, relinquishment of the remains and associated items to the descendents, or other culturally appropriate treatment may be discussed. Assembly Bill 2641 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the landowner shall comply with one or more of the following:

- record the site with the NAHC or the appropriate Information Center,
- use an open-space or conservation zoning designation or easement, and/or
- record a document with the county in which the property is located.

If the NAHC is unable to identify an MLD or if the MLD fails to make a recommendation within 48 hours after being granted access to the project site, the project proponent or its authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property, in a location not subject to further subsurface disturbance. The project proponent or its authorized representative may also reinter the remains in an appropriate location not subject to further disturbance if the project proponent rejects the recommendation of the MLD and if mediation by the NAHC fails to provide measures acceptable to the project proponent.

Implementing Mitigation Measure 3.8-3 would reduce the potential impacts to uncovered human remains to **less than significant**.

3.5.5 RESIDUAL SIGNIFICANT IMPACTS

With implementation of the mitigation measures described above, the proposed Program would not result in any significant residual impacts related to cultural and historic resources.

3.6 PALEONTOLOGICAL RESOURCES

3.6.1 ENVIRONMENTAL SETTING

Paleontological resources (fossils) are the remains or traces of prehistoric animals and plants. This section assesses the potential that earth-moving activities associated with the proposed Program could adversely affect scientifically important (unique) fossil remains in the PEIR study area. The analysis presented in this section conforms to Society of Vertebrate Paleontology (SVP) criteria.

REGIONAL GEOLOGIC SETTING

As discussed in Section 3.1, "Geology, Soils, and Mineral Resources," the study area is located in a nearly flat alluvial plain between the Diablo Range to the east and Gabilan Range to the west, within the Coast Range geomorphic province. The valley floor is underlain by Holocene-age (11,000 years B.P. and younger) and Pleistocene-age (11,000 to 1.8 million years B.P.) stream deposits. The valley floor gives way to low foothills and piedmont slopes to the east and west, where older geologic materials are exposed as a result of weathering and erosion.

LOCAL GEOLOGIC SETTING

Jennings and Strand (1958), who provided geologic mapping at a scale of 1:250,000, indicate that the PEIR study area is underlain by Holocene alluvium, Holocene alluvial fan deposits, Holocene nonmarine terrace deposits, and Plio-Pleistocene nonmarine deposits. Furthermore, two small areas of Pleistocene nonmarine deposits are located in the east central area, and three very small areas of Upper Cretaceous marine deposits are exposed in the north central portion of the study area (Figure 3.6-1).

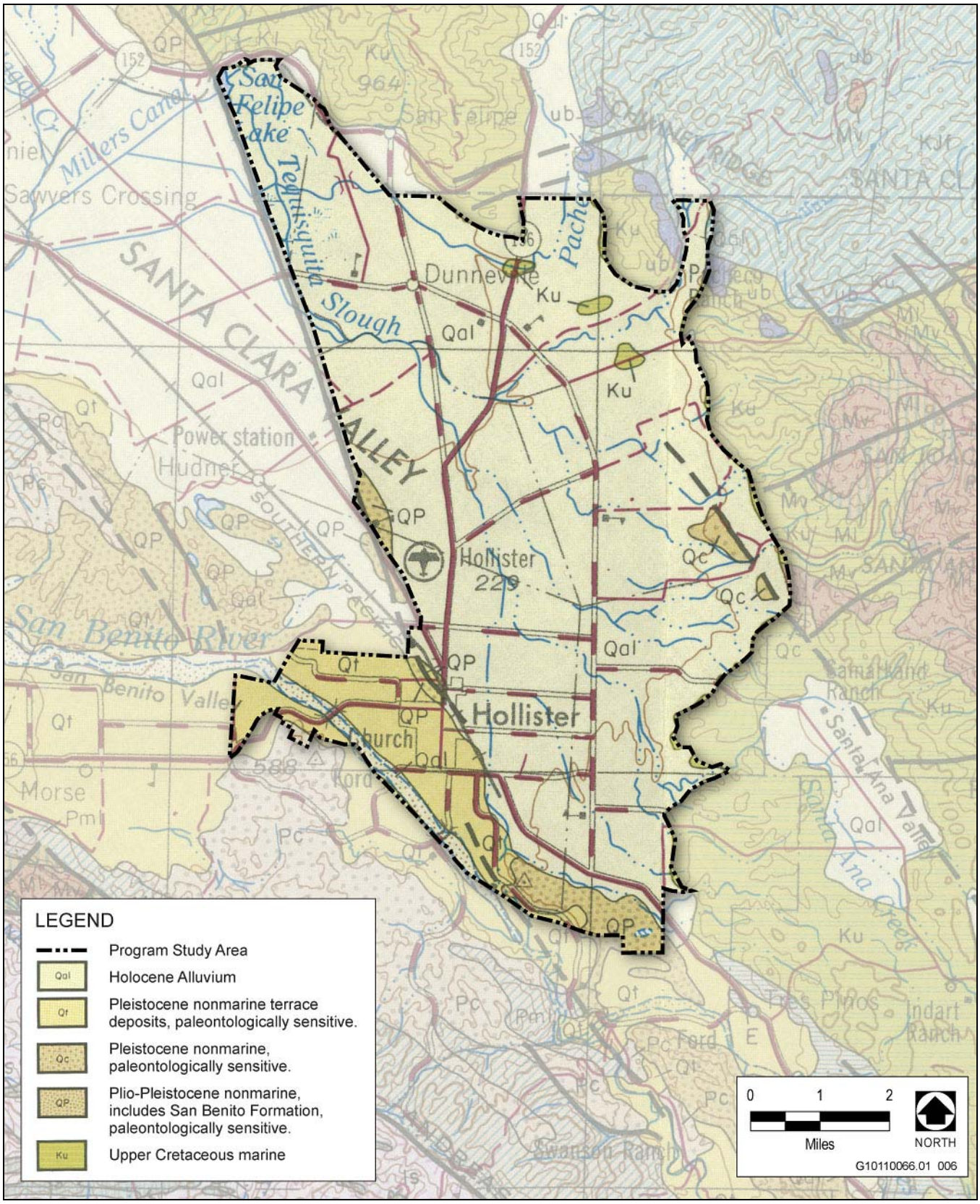
Rogers (1993), who provided geologic mapping at a scale of 1:24,000, indicates that most of the PEIR study area is underlain by Pleistocene fine-grained, undifferentiated lacustrine and alluvial deposits. Several areas immediately west of the airport, within downtown and southeast of Hollister, are underlain by the Plio-Pleistocene San Benito Formation (composed of unconsolidated gravel, sand, and silt). West and southwest of Hollister, the PEIR study area is underlain by Holocene river sand deposits. Holocene river terrace deposits are located south of Hollister and north of the San Benito River. Rogers also mapped the three very small areas of Upper Cretaceous marine deposits (sandstone and shale) in the north central portion of the PEIR study area. The two small areas of Pleistcoene nonmarine deposits in the east central area mapped by Jennings and Strand (1958) are not part of the topographic area that was included in the Rogers mapping study.

PALEONTOLOGICAL RESOURCE INVENTORY METHODS

A stratigraphic inventory and paleontological resource inventory were completed to develop a baseline paleontological resource inventory of the PEIR study area and surrounding area by rock unit, and to assess the potential paleontological productivity of each rock unit. Research methods included a review of published and unpublished literature. These tasks complied with SVP (1995) guidelines.

Stratigraphic Inventory

Geologic maps and reports covering the geology of the PEIR study area were reviewed to determine the exposed rock units and to delineate their respective aerial distributions in the PEIR study area. Regional and local surficial geologic mapping and correlation of the various geologic units in the vicinity of the study area have been provided at a scale of 1:250,000 by Jennings and Strand (1958) and at a scale of 1:24,000 by Rogers (1993).



Source: Jennings and Strand 1958

Geologic Formations in the Study Area **Figure 3.6-1**

Paleontological Resource Inventory

Published and unpublished geological and paleontological literature were reviewed to document the number, locations, and previously recorded fossil sites from rock units exposed in and near the study area, as well as the types of fossil remains each rock unit has produced. The literature review was supplemented by an archival search conducted at the University of California's Museum of Paleontology (UCMP) in Berkeley, California on June 21, 2010.

Field Survey

Proposed facilities developed as part of the proposed project include treatment plants, wells, percolation basins, pipelines, storage tanks, and ancillary facilities. These facilities could be located in a variety of urban and rural settings in the study area. The exact locations for these facilities, specific construction methods, and haul routes have not been identified. A field reconnaissance of the approximately 32,000-acre study area has not been conducted.

PALEONTOLOGICAL RESOURCE ASSESSMENT CRITERIA

The potential paleontological importance of the study area can be assessed by identifying the paleontological importance of exposed rock units within the study area. Because the aerial distribution of a rock unit can be easily delineated on a topographic map, this method is conducive to delineating parts of the study area that are of higher and lower sensitivity for paleontological resources and to identify Program elements in future project-specific CEQA documentation that may require monitoring during construction.

A paleontologically important rock unit is one that: 1) has a high potential paleontological productivity rating; and 2) is known to have produced unique, scientifically important fossils. The potential paleontological productivity rating of a rock unit exposed in the study area refers to the abundance/densities of fossil specimens and/or previously recorded fossil sites in exposures of the unit in and near the study area. Exposures of a specific rock unit in the study area are most likely to yield fossil remains representing particular species in quantities or densities similar to those previously recorded from the unit in and near the study area.

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

For example, identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare. The value or importance of different fossil groups varies, depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions such as part of a research project. Marine invertebrates are generally common, well developed, and well documented. They would generally not be considered a unique paleontological resource.

The following tasks were completed to establish the paleontological importance of each rock unit exposed at or near the study area:

- the potential paleontological productivity of each rock unit was assessed, based on the density of fossil remains previously documented within the rock unit; and
- the potential for a rock unit exposed within the study area to contain a unique paleontological resource was considered.

PALEONTOLOGICAL RESOURCE INVENTORY RESULTS

Stratigraphic Inventory

Holocene Alluvial Deposits

By definition, in order to be considered a fossil, an object must be more than 11,000 years old. Because the Holocene alluvial deposits in the study area are 11,000 years B.P. and younger, they would not contain unique paleontological resources.

San Benito Formation

Vertebrate mammalian fossils have proved helpful in determining the relative age of alluvial fan sedimentary deposits such as those in the PEIR study area. Mammalian inhabitants of the Pleistocene alluvial fan and floodplain included mammoths, horses, mastodons, camels, ground sloths, and pronghorns.

The Pleistocene epoch, known as the “great ice age,” began approximately 1.8 million years ago. Surveys of late Cenozoic land mammal fossils in northern California have been provided by Hay (1927), Lundelius et al. (1983), Jefferson (1991), Savage (1951), and Stirton (1939). On the basis of his survey of vertebrate fauna from the nonmarine late Cenozoic deposits of the San Francisco Bay region, Savage (1951) concluded that two major divisions of Pleistocene-age fossils could be recognized: the Irvingtonian (older Pleistocene fauna) and the Rancholabrean (younger Pleistocene and Holocene fauna). These two divisions of Quaternary Cenozoic vertebrate fossils are widely recognized today in the field of paleontology. The age of the later Pleistocene, Rancholabrean fauna was based on the presence of bison and on the presence of many mammalian species that are inhabitants of the same area today. In addition to bison, larger land mammals identified as part of the Rancholabrean fauna include mammoths, mastodons, camels, horses, and ground sloths.

As indicated by Rogers (1993), a number of fossils have been recovered from the Hollister-San Felipe area. Two vertebrate fossils consisting of Pleistocene (Rancholabrean) mammoth remains have been recovered from the San Benito Formation within the study area as recorded by Rogers. One of these is UCMP locality V6965, which yielded one elephant specimen from the “Hollister Gravel Pit” within the PEIR study area. A search of the UCMP database further indicates that eight other Pleistocene age fossils have been recorded from eight localities in San Benito County, within sediments of the San Benito Formation. For example, UCMP locality V4506 at Tres Pinos, approximately 2 miles southeast of the PEIR study area, yielded one horse specimen. UCMP locality V6968 at Bird Creek, approximately 2 miles south of the PEIR study area, yielded one specimen of a Columbian mammoth. Jefferson (1991) compiled a database of California late-Pleistocene vertebrate fossils from published records, technical reports, unpublished manuscripts, information from colleagues, and inspection of museum paleontological collections at more than 40 public and private institutions. He listed a number of sites in San Benito County that have yielded Rancholabrean vertebrate fossils from sediments referable to the San Benito Formation. The large numbers of vertebrate fossils recovered from the PEIR study area and within San Benito County suggest that the San Benito Formation is a paleontologically sensitive rock formation under SVP criteria.

Upper Cretaceous Marine Deposits

These undifferentiated sandstone and shale deposits locally contain fossils of foraminifera, marine protozoans with calcareous shells full of holes through which slender filaments project; they form the main component of chalk and many deep-sea oozes. Because these marine invertebrates are generally common, well developed, and well documented, they would generally not be considered a unique paleontological resource.

3.6.2 REGULATORY CONTEXT

No federal, state, regional, or local plans, policies, regulations, or laws related to paleontological resources apply to the proposed Program.

PROFESSIONAL PALEONTOLOGICAL STANDARDS

The SVP (1995, 1996), a national scientific organization of professional vertebrate paleontologists, has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, analysis, and curation. Most practicing professional paleontologists in the nation adhere to the SVP assessment, mitigation, and monitoring requirements, as specifically spelled out in its standard guidelines. The criteria for determining sensitivity of paleontological resources are described above "Paleontological Resource Assessment Criteria and below under "Analysis Methodology."

3.6.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Evaluation of potential impacts to unique paleontological resources was based on a review of published geologic maps and literature pertaining to the study area, including a search of the UCMP database.

In the SVP standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, the SVP (1995) establishes three categories of sensitivity for paleontological resources: high, low, and undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys and mapping are performed to determine their sensitivity. After reconnaissance surveys, observation of exposed cuts, and possibly subsurface testing, a qualified paleontologist can determine whether the area should be categorized as having high or low sensitivity. In keeping with the significance criteria of the SVP, all vertebrate fossils are generally categorized as being of potentially significant scientific value.

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on Appendix G of the State CEQA Guidelines, as amended, which states that a project would have a significant impact on paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site. For the purposes of this PEIR, a unique resource or site is one that is considered significant under the professional paleontological standards described in Section 3.6.1, "Paleontological Resource Assessment Criteria."

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates are generally common; the fossil record is well developed and well documented,

and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare.

IMPACT ANALYSIS

The following Program elements were evaluated for their potential to cause impacts to paleontological resources. No impacts were identified as earth-moving activities would be nonexistent or located at already disturbed sites:

- **Purchase of Additional Imported Supply:** This Program element would use existing facilities and would not involve earth-moving activities.
- **Non-Structural Solutions**: The Program non-structural solutions include water conservation, salinity education, a water softener ordinance, and other measures; these Program elements would reduce water demands and improve water quality, and they would not involve earth-moving activities.
- **Lessalt WTP Upgrades**: These upgrades would occur at the Lessalt WTP within the footprint of an already disturbed area.
- **Ridgemark WWTP Upgrades**: These upgrades would occur at the Ridgemark WWTP within the footprint of an already disturbed area.
- **Installation of Desalination Improvements at Existing Urban Wells**: These improvements would be extremely localized at already disturbed urban well sites.
- **Operational Elements of the Program** (after construction is completed, including the North County Groundwater Bank, Lessalt WTP, new WTP, Ridgemark WWTP, and demineralization at existing urban wells or centralized plant): The Program element operations would not involve earth-moving activities.

Because this evaluation is based on Program-level descriptions of Program elements, it is assumed that construction of some Program elements could result in disturbance of currently undeveloped land, which could that could impact previously unidentified cultural resources. These Program elements include:

- North County Groundwater Bank,
- New Surface Water Treatment Plant,
- Phase 1 Demineralization of Urban Wells,
- New Pipeline to Ridgemark,
- New Treated Water Storage,
- Ridgemark Recycled Water,
- Phase 2a Recycled Water Program,
- New Urban Wells,
- Cielo Vista WWTP Connection to City WRF, and
- Phase 2b Recycled Water Program.

IMPACT 3.6-1 Potential Damage to Unknown, Unique Paleontological Resources during Earth-Moving Activities. *Portions of the PEIR study area are underlain by Pleistocene alluvial deposits that are paleontologically-sensitive. Therefore, earth-moving activities could disturb previously unknown, unique paleontological resources in the study area.* ***Less than significant with mitigation.***

As shown in Figure 3.6-1, most of the PEIR study area is underlain by Holocene-age (less than 11,000 years old) alluvial deposits. By definition, to be considered a fossil, an object must be more than 11,000 years old. Therefore, construction activities that occur in the Holocene alluvium would have no impact on paleontological resources. Furthermore, although the small areas of Upper Cretaceous marine deposits locally contain fossils of

foraminifera, because these marine invertebrates are generally common, well developed, and well documented, they would not be considered a unique paleontological resource. Therefore, the Upper Cretaceous marine deposits would be considered of low paleontological sensitivity.

The Plio-Pleistocene-age alluvial deposits, including the San Benito Formation, however, are considered a paleontologically sensitive rock unit under SVP guidelines (1995). As discussed in detail above, numerous vertebrate fossil specimens have been recorded from the San Benito Formation within the PEIR study area and in other locations in San Benito County. This suggests that a potential exists for uncovering additional similar fossil remains during construction-related earth-moving activities within the PEIR study area. The specific locations and construction methods for earth-moving activities associated with the proposed Program have not been identified. Therefore, the potential for damage to unique paleontological resources during earth-moving activities in the study area is considered a **potentially significant** impact.

Mitigation Measure 3.6-1: Conduct Construction Personnel Education, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan as Required.

To minimize potential adverse impacts on previously unknown potentially unique, scientifically important paleontological resources, the project proponent for all Program elements in which earth-moving construction occur in the Plio-Pleistocene-age alluvial deposits (including the San Benito Formation) as shown on Figure 3.6-1 shall do the following:

- Before the start of any earth-moving activities for any Program element in the Plio-Pleistocene-age alluvial deposits (including the San Benito Formation) as shown on Figure 3.6-1, the project proponent shall retain a qualified paleontologist or archaeologist to train all construction personnel involved with earth-moving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered.

- If paleontological resources are discovered during earth-moving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the City or County (as appropriate, depending on the location of the find). The project proponent shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with the SVP guidelines (1996). The recovery plan may include, but shall not be limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the project proponent to be necessary and feasible shall be implemented before construction activities are resumed at the site where the paleontological resources were discovered.

Implementation of Mitigation Measure 3.6-1 would reduce potentially significant impacts related to potential damage to unique paleontological resources to a **less-than-significant** level because construction workers would be alerted to the possibility of encountering paleontological resources, and in the event that resources were encountered, fossil specimens would be recovered and recorded and would undergo appropriate curation.

3.6.4 RESIDUAL SIGNIFICANT IMPACTS

With implementation of Mitigation Measure 3.6-1, impacts related to unique paleontological resources would be reduced to a less-than-significant level because construction worker personnel education would be provided, earth-moving activities would stop if paleontological resources were encountered, and a paleontologist would evaluate the find and prepare a recovery plan, if appropriate.

This page intentionally left blank.

3.7 POPULATION, EMPLOYMENT, AND HOUSING

3.7.1 ENVIRONMENTAL SETTING

POPULATION

San Benito County

The California Department of Finance's (DOF's) 2010 city and county population projections provide the most recent population data for the County (DOF 2010). As of January 1, 2010, the County's population was estimated to be 58,388, of which 19,192 people resided in the unincorporated County. A portion of the current population in the County can be attributed to an influx of people moving from surrounding counties, particularly Santa Clara County, and the San Francisco Bay area (Bay area) where housing prices are substantially higher than those in the County (City of Hollister 2009:3.69).

Table 3.7-1 provides current and projected population data for the County that were obtained from the DOF, the San Benito County General Plan Housing Element (2010a), and the Association of Monterey Bay Area Governments' (AMBAG) 2008 population forecasts.

Table 3.7-1
San Benito County Current and Future Population Projections (2010-2035)

Location	2010[a]	2015	2020	2025	2030	2035
San Juan Bautista	1,895	2,121	2,356	2,570	2,734	2,907
Hollister	37,301	44,613	49,064	54,143	59,259	62,756
Unincorporated	19,192	21,737	24,720	26,671	27,429	29,069
County Total	**58,388**	**68,471**	**76,140**	**83,383**	**89,431**	**94,731**

Note: [a] The 2010 population reflects the most recent DOF data.
Source: AMBAG 2008; DOF 2010; San Benito County 2010a:7

As shown in Table 3.7-1, the County's population is anticipated to increase from 58,388 residents in 2010 to 94,731 residents in 2035, or 62%. The population in the unincorporated area of the County is anticipated to increase from 19,192 to 29,069, or 51% during the same time period (San Benito County 2010a).

City of Hollister

As shown in Table 3.7-1, approximately 56% of the population in the County resides in the City of Hollister, and the majority of population growth is projected to be in the City. As of January 1, 2010, the DOF estimated the population of the City to be 37,301 (DOF 2010). The population of the City is anticipated to increase to 62,756, or 68%, by 2035 (AMBAG 2008:43).

The proposed Program provides a long-term plan, through 2023, to meet the existing and future water supply needs of the City (HDR 2010:1-1). Based on AMBAG's 2004 population projections that were adjusted to reflect the City's regional housing needs, the population of the City is estimated by AMBAG to be 55,192 in 2023 (HDR 2008:4-7). The proposed Program was not developed solely on population projections. Rather, the population projections provide one component for determining the rate of regional growth. With the current economic downturn, specifically because of the substantial slowdown in construction of new homes, the population in the City is not expected to increase as rapidly as anticipated by AMBAG (HDR 2010:1-4).

EMPLOYMENT

Employment growth is one of the primary determinants of housing demand. Working-age individuals often choose a place to live based on employment prospects in the local area. Therefore, employment trends are an important indicator of housing demand. The rate of employment growth, and the types of jobs most likely to be created, would determine how much housing would be needed by type and cost. For example, an economy based on seasonal tourism will generate different housing needs for workers than an economy based on government, education, research, and technology.

The following discussions provide the historical, current, and future employment conditions for San Benito County and the City of Hollister. The anticipated trend in the jobs/housing index is provided in Chapter 5, "Cumulative Impacts."

San Benito County

Increasing housing prices in Santa Clara County over the last 20 years have increased the number of residents in San Benito County. Many San Benito County residents commute to jobs in areas outside of the County. The net number of residents who live in the County and commute to other areas increased from 5,700 to 12,600 between 1990 and 2000, or from approximately 35% to 50% of the total workforce (City of Hollister 2009:3.75.).

The County labor market has traditionally been dominated by the services, manufacturing, and government job sectors. Between 2000 and 2008, the employed population in the labor force increased from 23,663 to 26,125 (population of persons 16 years and older) (U.S. Census Bureau 2000a, 2008a). Of the total employment in 2008, 27% was in construction, manufacturing, transportation, and warehousing; 16% was in agricultural industries; 15% was in education and health care; 15% was in financial, insurance, real estate, and other professional and management services; 14% was in nonfinancial and government services; and 12% was in retail and wholesale trades (U.S. Census Bureau 2008a). The largest employers in the County include El Modeno Gardens, Jesus Quintero, Pacific Scientific Energetic, and Ridgemark Golf and Country Club (City of Hollister 2009:3.74).

AMBAG estimates approximately 3,600 jobs will be created in the County between 2010 and 2035 resulting in a total of approximately 21,700 jobs in the whole of the County by 2035 (Table 3.7-2). Of the projected 3,600 new jobs, approximately 29% or 1,037 jobs are projected to be in the County's unincorporated areas. Most of the projected job growth is expected to be in the service sector with 1,500 new jobs, which would account for over 40% of new employment in the County. Other growing industries include retail, construction, and public services, such as employment in education and government (San Benito County 2010b:2-19).

Table 3.7-2
San Benito County Employment Projections (2010-2035)

Location	2010	2015	2020	2025	2030	2035	2010-2035	
							Percent of Annual Growth Rate	Absolute Job Growth
San Juan Bautista	220	233	248	265	283	299	1.3	63
Hollister	10,898	11,393	12,056	12,698	13,398	13,893	1.0	2,500
Unincorporated	6,262	6,465	6,745	7,007	7,299	7,508	0.8	1,037
County Total	**17,380**	**18,090**	**19,050**	**19,970**	**20,980**	**21,700**	**0.9**	**3,600**

Source: AMBAG 2008; San Benito County 2010b:2-19

The rate of projected job growth in the unincorporated area of the County between 2010 and 2035 is estimated to be about 0.8%, which is slightly below the projected countywide level of 0.9%. AMBAG estimates employment in the unincorporated area of the County will increase from 6,262 jobs in 2010 to 7,508 jobs in 2035 (San Benito County 2010b:2-19).

City of Hollister

Historically, the City of Hollister labor market has been dominated by the management and professional job sectors. Between 2000 and 2008, the employed population in the labor force decreased from 15,122 to 14,712 (population of persons 16 years and older) (U.S. Census Bureau 2000b, 2008b). Of the total employment in 2008, 29% was in construction, manufacturing, transportation, and warehousing; 18% was in education and health care; 16% was in financial, insurance, real estate, and other professional and management services; 15% was in nonfinancial and government services; 14% was in retail and wholesale trades; and 8% was in agricultural industries (U.S. Census Bureau 2008b). The largest employers in the City include Albertsons, American Electrical Service, Hazel Hawkins Memorial Hospital, Hollister School District, and R&R Labor (City of Hollister 2009:3.74).

As shown in Table 3.7-2, approximately 70%, or 2,500 jobs, are projected to be in the City by 2035. The rate of projected job growth in the City between 2010 and 2035 is estimated to be about 1%, which is slightly greater than the projected countywide level of 0.9%. AMBAG estimates employment in Hollister, including the City's sphere of influence (SOI), will increase from 10,898 jobs in 2010 to 13,893 jobs in 2035 (San Benito County 2010b:2-19).

HOUSING

San Benito County

The total number of housing units in San Benito County as a whole increased from 16,499 in 2000 to 17,829 in 2010 (DOF 2010). San Benito County's housing growth rate was approximately 7.5%, with the supply and composition of housing changing little in this period. Approximately 84% of housing units are single-family homes and the average household size was 3.5 (considered to be a relatively large household) (DOF 2010).

Table 3.7-3 provides current and projected housing data for the County that were obtained from the DOF, the San Benito County General Plan Housing Element (2010a), and AMBAG's 2008 population forecasts. As shown in Table 3.7-3, the number of housing units in the County is anticipated to increase to 29,404 in 2035, or 65% (AMBAG 2008:41).

Table 3.7-3
San Benito County Current and Future Housing Projections (2010-2035)

Location	2010[a]	2015	2020	2025	2030	2035
San Juan Bautista	731	837	927	1015	1084	1148
Hollister	10,610	12,816	14,085	15,605	17,108	18,221
Unincorporated	6,488	7,457	8,471	9,181	9,482	10,035
County Total	**17,829**	**21,110**	**23,483**	**25,800**	**27,674**	**29,404**

Note: [a]The 2010 population reflects the most recent DOF data.
Source: AMBAG 2008; DOF 2010; San Benito County 2010a

The relative ability of a community to meet the demands for local housing is analyzed using a "vacancy rate," which establishes the relationship between housing supply and demand. If the demand for housing units is greater

than the available supply, then the vacancy rate is low and the price of housing will most likely increase at a higher rate than an area where supply and demand are more in balance. According to the California Department of Housing and Community Development (HCD 2000), a housing vacancy rate of 5% is considered normal. Vacancy rates below 5% indicate a housing shortage in a community. The County had a vacancy rate of 0.8% for owner-occupied units and 2.8% for rental units in 2008 (U.S. Census Bureau 2008c). These vacancy rates indicate that the County experienced a tight housing market and a housing shortage, which have primarily resulted from water and wastewater infrastructure constraints, implementation of growth management programs in the County and City of Hollister, and the influx of population from the Bay Area (San Benito County 2010a).

City of Hollister

The total number of housing units in the City increased from 9,928 in 2000 to 10,610 in 2010 (DOF 2010). The City's housing growth rate was approximately 6.4%, with the supply and composition of housing changing little in this period. Approximately 80% of housing units are single-family homes and the average household size was 3.6 (considered to be a relatively large household) (DOF 2010, City of Hollister 2009:3.76). Table 3.7-3 shows that the number of housing units in the City is anticipated to increase to 18,221, or 72%, by 2035 (AMBAG 2008:43).

Measure U, approved by voters in 2002, allocates up to 254 units/building permits per year. Before the passage of Measure U, 1,148 units were approved or had existing lots ready for construction (Paxton, pers. comm., 2010). The Hollister City Council approved an additional 721 units for the years 2008, 2009, and 2010 in July 2009 (Paxton, pers. comm., 2010; City of Hollister 2009:3.161). The City expects to approve 481 units for the years 2011 and 2012 in mid-2010. Measure Y, approved by voters in 2008, allocates 160 units to be constructed in downtown Hollister before 2012. Measure U expires in January 2012. Before expiration of Measure U, the City Council will determine if a growth management program is warranted (See 3.7, "Regulatory Context," for a detailed discussion of Measure U and Measure Y).

Since 2002, no new dwelling units have been developed in the City pursuant to a moratorium that was imposed by the RWQCB because of wastewater capacity issues. Per the RWQCB's request, the City could not issue building permits for any development that would increase use of wastewater capacity at the City's treatment facilities. The moratorium was lifted in early 2009. As a result, the number of housing units in the City is expected to substantially increase over the planning horizon of the proposed Program to 15,769 by 2023 (HDR 2008:4-7).

Regional Housing Needs Allocation

The 2007–2014 Regional Housing Needs Plan (RHNP) allocates the Council of San Benito County Governments (SBCOG) with its "fair share" of the region's projected housing needs. Each city and county in the RHNP receives a Regional Housing Needs Allocation (RHNA) of total number of housing units that it must plan for within a 7.5-year time period through their general plans' Housing Elements. Within the total number of needed units, allocations are also made for the number of very low-, low-, moderate-, and above-moderate-income units. The RHNP allocations take into consideration several factors: market demand for housing, type and tenure of housing supply, employment opportunities, commuting patterns, availability of suitable residential sites and public facilities, loss of assisted multifamily units, avoidance of further concentration of lower income households, and special housing needs.

San Benito County

The SBCOG anticipates that 4,754 housing units would be required in the whole of the County during the current planning period of the RHNP (2007-2014). As shown in Table 3.7-4, 1,655, or 35%, of these housing units would be required in the unincorporated area of the County, including the Hollister urban water area outside the City's SOI, to meet regional housing needs (San Benito County 2010:125).

Since adoption of the SBCOG RHNP in 2008, 47 above-moderate housing units were constructed. As shown on Table 3.7-5, an additional 1,608 dwelling units are required to meet San Benito County's regional housing needs within the unincorporated area of the County, including the Hollister urban water area outside the City's SOI, during the current planning period (2007-2014) (San Benito County 2010:125).

Table 3.7-4
San Benito County Regional Housing Needs Allocation for 2007–2014

Income Grouping	Projected Housing Units (2014)		Total Projected Housing Units (2014)	Percent of Housing Needs
	Unincorporated San Benito County	Hollister Urban Water Area		
Extremely low	69	113	182	11
Very low	70	112	182	11
Low	107	175	282	17
Moderate	126	205	331	20
Above-moderate	258	420	678	41
Total[(a)]	**630**	**1,025**	**1,655**	**100**

Note: [(a)]The total regional housing needs for the unincorporated area of San Benito County include the Hollister Urban Water Area outside of the City's sphere of influence.
Source: San Benito County 2010:125

Table 3.7-5
San Benito County Adjusted Housing Needs (2009–2014)

Income Grouping	Projected Housing Units (2014)	Constructed Housing Units (2008)	Remaining Housing Needs (2014)
Extremely Low	182	--	182
Very low	182	--	182
Low	282	--	282
Moderate	331	--	331
Above-moderate	678	47	631
Total[(a)]	**1,655**	**47**	**1,608**

Note: [(a)]The total regional housing needs for the unincorporated area of San Benito County include the Hollister Urban Water Area outside of the City's sphere of influence.
Source: San Benito County 2010:126

City of Hollister

The SBCOG anticipates that 3,050 housing units would be required in the City, including the City's SOI, during the current planning period of the RHNP (Table 3.7-6). As shown in Table 3.7-7, 1,184 housing units are pending approval or have been approved by the City: 226 housing units are in the lower income categories and 958 housing units are in the moderate and above-moderate income categories. The City intends to use a combination of these approved pending units, vacant land, and some downtown vacant parcels, and reuse of upper floors of existing buildings to demonstrate the City's ability to meet the 2007-2014 RHNA goals (City of Hollister 2009:3.128).

Table 3.7-6 City of Hollister Regional Housing Needs Allocation for 2007–2014				
Income Grouping	Projected Housing Units (2014)		Total Projected Housing Units (2014)	Percent of Housing Needs
	Hollister City Limits	Hollister Sphere of Influence		
Very low	446	225	336	22
Low	344	174	518	17
Moderate	405	205	610	20
Above-moderate	831	420	1.251	41
Total[(a)]	**2,026**	**1,024**	**3,050**	**100**

Note: [(a)] The total regional housing needs for the City of Hollister include the current City limits and the City's sphere of influence.
Source: San Benito County 2010:125

Table 3.7-7 City of Hollister Adjusted Housing Needs (2009-2014)			
Income Grouping	Projected Housing Units (2014)	Pending or Approved Housing Units (2008)	Remaining Housing Needs (2014)
Very low	336	113	223
Low	518	113	405
Moderate	610	368	242
Above-moderate	1.251	590	661
Total[(a)]	**3,050**	**1,184**	**1,866**

Note: [(a)]The total regional housing needs for the City of Hollister include the current City limits and the City's sphere of influence.
Source: City of Hollister 2009: 3128

3.7.2 REGULATORY CONTEXT

No federal plans, policies, regulations, or laws related to population, employment, and housing apply to the proposed Program. State, regional, and local plans, policies, and regulations that must be considered are described in the following subsections.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Regional Housing Needs Plan

A RHNP is mandated by the State of California (California Government Code Section 65584) for regions to address housing issues and needs based on future growth projections for the area. The RHNP is developed by the SBCOG and allocates to cities and counties their "fair share" of the region's projected housing needs based on household income groupings over the planning period for the housing elements of each specific jurisdiction. On July 2008, the SBCOG Board of Directors adopted the 2007–2014 RHNP. Cities and counties must develop and adopt their Housing Elements to address how they will meet their allocations.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

San Benito County General Plan

The following goals and policies of the San Benito County General Plan Housing Element (2010a) are applicable to the proposed Program.

GOAL: Development of Housing. To promote the provision of adequate housing for all persons in the County including those with special housing needs and to emphasize the basic human need for housing as shelter.

- **Policy 2O.** The County shall assist where possible with the removal of infrastructure constraints for the provision of wastewater and water service.

Growth Management System (San Benito County Ordinance Title 21, Chapter 21.07, Section 16.64.010)

San Benito County implements a growth management system that is intended to:

- encourage a rate of growth which will not exceed the County's ability to satisfy future demands for such essential services as police and fire protection, roads, schools, water, and sewers;
- preserve San Benito County's rural character, open space, historic and scenic areas, and low density of population, and to grow at an orderly and deliberate pace;
- preserve and protect viable agricultural lands;
- encourage the assignment of an appropriate share of the regional need for housing, provide housing for all segments of the community, and encourage a balance between the supply of local housing and the supply of local employment opportunities; and
- encourage a balance in the economy of the County, recognizing that the cost of residential development needs to be offset by the revenue from commercial and industrial development.

The annual allocation of residential building permits in the unincorporated County is based on dividing the allowable population increase by the County's average household size, using the most recent DOF statistics. The resulting quotient establishes the maximum number of building permits for dwelling units that can be authorized during the fiscal year, unless additional building permits are authorized by the County Planning Commission. The County Planning and Building Department biannually prepares and presents a report to the County Planning Commission and the Board of Supervisors on the status of the growth management system.

City of Hollister General Plan

The following goals and policies of the City of Hollister General Plan Housing Element (2009) are applicable to the proposed Program:

GOAL H1: Work together to build a sense of community and achieve housing goals.

- **Policy H1.4: Timing of Housing and Infrastructure.** Continue to support the timing of new housing with needed infrastructure improvements.

Measure U (City of Hollister Municipal Code Title 16, Chapter 16.64, Section 16.64.010)

In 2002, voters approved the Measure U Growth Management initiative. Measure U is intended to (City of Hollister 2009: 3158):

- encourage a rate of residential growth within the City that will not exceed the City's ability to provide adequate and efficient public services, including sewer, water, police, fire, streets, parks, general administration, and maintenance of public facilities, or the ability of the local economy, including the City's financial capacity, to support such growth, maintain and improve the quality of the environment considering the City's natural setting, including water courses, viable agricultural/open lands, and recreational, historic, and scenic areas;
- encourage and promote a balanced community with adequate housing to meet the needs of local employment and residents;
- encourage the construction of an appropriate share of the regional need for housing;
- encourage and promote housing programs and activities to enable the City to meet the needs of all economic segments of the community, including the provision of adequate levels of rental housing; and
- provide and maintain a sound economic base for the City.

Under Measure U, the City is able to award allocations of 254 building permits per year of which 40 units must be reserved for affordable housing. Measure U expires in January 2012 and the City Council will determine if a growth management program is warranted before expiration of Measure U.

Measure Y

Voters approved Measure Y in November 2008, which amends Measure U to exempt projects in the 148.5-acre downtown area of Hollister from the growth management program residential development. The approved residential exemption area encompasses all of the Downtown Commercial Mixed Use zoning district and lands in the Neighborhood Mixed Use zoning district located east and south of downtown.

3.7.3 Environmental Impacts and Mitigation Measures

Analysis Methodology

The examination of population, employment, and housing conditions in this section is based on information obtained from review of available population, employment, and housing data and projections, including those in the San Benito County General Plan Housing Element (2010a), the San Benito County General Plan Background Report (2010b), the City of Hollister General Plan (2005) and Housing Element (2009), AMBAG (2008), the Hollister Urban Area Water and Wastewater Master Plan (MOU Parties 2008), the HUA Coordinated Water Supply and Treatment Plan (MOU Parties 2010), the U.S. Census Bureau (2000a, 2000b, 2008a, 2008b, 2008c), the DOF (2010), and other sources.

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on Appendix G of the State CEQA Guidelines, as amended. The proposed Program was determined to result in a significant impact related to population, employment, and housing if it would:

- induce substantial population growth in an area, either directly (by proposed new homes and businesses) or indirectly (through the extension of roads or other infrastructure);
- generate a substantial demand for new housing, the construction of which could cause significant environmental impacts; or
- displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

IMPACT ANALYSIS

IMPACT 3.7-1 Temporary Increase in Population and Subsequent Housing Demand during Construction. *Implementation of the proposed Program would generate a temporary increase in employment and subsequent housing demand in the City of Hollister and San Benito County from construction jobs. The existing residents in local cities and counties who are employed in the construction industry would be sufficient to meet demand associated with the proposed Program; therefore, this temporary increase in employment is not expected to generate any substantial new population growth in the area or generate the need for substantial additional housing for construction workers.* ***Less than significant.***

Implementation of the proposed Program would generate a temporary increase in employment and subsequent housing demand in the City and County from construction jobs. Construction activities would occur at intervals throughout the planning horizon of the proposed Program, which would occur in two phases that together would be implemented through 2023. Each phase of the proposed Program includes construction of several Program elements. For example, water and wastewater treatment plant upgrades and expansions, pipelines, pump stations, and water storage facilities could all be constructed simultaneously.

Construction workers serving the proposed Program can be expected to come from the City, County, and nearby communities. For many of the Program elements, the duration of construction would be relatively minor and last from approximately 6 months up to 2 years. According to the latest labor data available from the U.S. Census Bureau (2008), it is estimated that 2,613 residents in San Benito County, which includes 1,222 residents in the City of Hollister, are employed in the construction industry (U.S. Census Bureau 2008a, 2008b). Construction jobs in the County are anticipated to increase to 2,820, which includes 1,674 residents in the City, through 2025 (AMBAG 2008: 41 and 43). These existing residents in the City and County who are employed in the construction industry would likely be sufficient to meet the demand for construction workers that would be generated by the proposed Program. Because construction workers serving the proposed Program could be expected to come from the City itself and from nearby communities in the County, neither substantial population growth nor an increase in housing demand in the region is anticipated as a result of these jobs. Furthermore, if some construction workers from outside the region were employed for the proposed Program, the temporary nature of the work supports the conclusion that these workers would not typically change residences when assigned to a new construction site. Therefore, substantial permanent relocations of construction workers to the City or County are not anticipated. The proposed Program would not be expected to generate the need for substantial additional housing stock in Hollister or San Benito County during construction of Program element infrastructure, which would be spread through 2023. Because of these conditions, the temporary increase in population growth and housing demand associated with construction of the proposed Program is considered a **less-than-significant** impact.

Mitigation Measure: No mitigation measures are required.

IMPACT 3.7-2 Permanent Direct Increase in Population Growth. *Implementation of the proposed Program would meet the needs of planned growth only, and it would not directly induce growth beyond levels already specified in the City and County General Plans. Program elements would be constructed on an incremental basis over the proposed Program's planning period, thus incrementally increasing the availability of water supplies and water and wastewater collection, conveyance, and treatment facilities to meet the needs of planned growth in the study area.* ***Less than significant.***

The study area includes the City of Hollister and adjacent unincorporated areas of San Benito County designated for urban development as defined by the County and City General Plans. The proposed Program was developed in response to projected growth in the study area, as determined by land use designations and zoning in the County and City General Plans. Program elements would be constructed on an incremental basis over the proposed Program's planning period, thus incrementally increasing the availability of water supplies and water and wastewater collection, conveyance, and treatment facilities to meet the needs of planned growth in the study area.

Population growth consistent with current County and City General Plans projections is not considered a significant environmental impact. However, development of housing, infrastructure, and facilities and services to serve this growth can have significant environmental impacts through land conversions, commitment of resources, and other mechanisms. The proposed Program would remove an impediment to development of residential, commercial, and industrial land uses within the study area. While lack of water supply and water and wastewater collection, conveyance, and treatment facilities is considered a major impediment to growth, other obstacles to new development still exist. New development cannot proceed without also undergoing project-specific environmental review and without the development of other required infrastructure.

Because implementation of the proposed Program would meet the needs of planned growth only, it would not directly induce growth beyond levels already considered in the County and City General Plans. This impact is considered **less than significant**. Therefore, no mitigation is required. Through implementation of this Program, the City could provide wastewater service to unincorporated properties in the HUA that would otherwise have constructed septic systems. This could potentially allow for higher density of development than anticipated by the Hollister General Plan. This potential indirect impact and indirect impacts related to the potential that the proposed Program could induce additional long-term population growth are addressed in Chapter 6, "Growth-Inducing Impacts."

Mitigation Measure: No mitigation measures are required.

IMPACT 3.7-3 Displacement of Existing Housing or People Resulting from Project Development. *Implementation of the proposed Program would not displace existing housing or people. Construction of the Program elements would occur within the footprints of existing facilities, on vacant land, or within existing roadways and associated rights-of-way.* ***Less than significant.***

Construction of Program elements would not displace existing housing. The WTP upgrades, Ridgemark WWTP upgrades, and the City of Hollister WRF expansion would occur within the existing footprints of these facilities. The new surface WTP, demineralization facilities, brine disposal facility, pump stations, water storage facilities, and urban wells would be constructed on vacant land. New water, wastewater, and recycled water collection and conveyance infrastructure would be within existing roadways and associated rights-of-way. Therefore, implementation of the proposed Program would not displace existing housing or people necessitating the construction of replacement housing elsewhere. This impact is considered **less than significant**. Therefore, no mitigation is required.

Mitigation Measure: No mitigation measures are required.

3.7.4 RESIDUAL SIGNIFICANT IMPACTS

Impacts associated with population growth and housing demand are considered less than significant. Therefore, there would be no residual significant impacts.

This page intentionally left blank.

3.8 UTILITIES AND PUBLIC SERVICES

3.8.1 ENVIRONMENTAL SETTING

The following section describes existing wastewater treatment and collection facilities and solid waste disposal facilities. Water quality, stormwater drainage systems, and water supply and demand are addressed in Section 3.2, "Water Resources."

WASTEWATER TREATMENT AND CONVEYANCE FACILITIES

Five wastewater treatment plants treat the domestic, commercial, and industrial wastewater flows generated within the HUA. The existing wastewater facilities are owned by three separate entities: the City of Hollister, SSCWD, and San Benito County.

Five wastewater treatment plants treat the domestic, commercial, and industrial wastewater flows generated within the HUA. The existing wastewater facilities are owned by three separate entities: the City of Hollister, SSCWD, and San Benito County.

City of Hollister

The City owns and operates a WRF to treat municipal wastewater. Currently the City treats approximately 2.7 mgd (City of Hollister et al. 2008:3-8). The WRF, completed in 2009, has a capacity of 4 mgd.

The City of Hollister also owns and operates an industrial wastewater treatment plant (IWTP), located three-quarters of a mile east of the WRF on the north side of the San Benito River. The IWTP treats seasonal industrial wastewater and storm water from the downtown area. San Benito Foods is the only remaining industrial discharger to the IWTP and discharges tomato cannery wastewater during summer and early fall. The IWTP was designed to treat a monthly average of 6.10 mgd during the canning season and 2.60 mgd the remainder of the year.

The City of Hollister's collection system consists of six lift stations and gravity pipelines and force mains ranging from 4- to 36-inches in diameter (City of Hollister et al. 2008:3-4).

Sunnyslope County Water District

SSCWD operates the Ridgemark I and Ridgemark II WWTP to serve residential and a few commercial businesses located near the Ridgemark Golf Course. These treatment plants use percolation and evaporation to dispose of treated wastewater. Ridgemark I consists of six ponds and Ridgemark II was consists of four ponds. Flows can be transferred between RM I and RM II through an interconnecting force main and transfer lift stations. (City of Hollister et al. 2008:3-10.)

The Ridgemark I and Ridgemark II are permitted for a combined 30-day running average, dry weather flow of 0.3 mgd (May through October) and a 30-day running average, wet weather flow of 0.31 mgd (November through April). Currently, the 30-day running average dry and wet weather flows conveyed to the two treatment plants are estimated at 0.26 and 0.28, respectively. (City of Hollister et al. 2008:3-10.)

San Benito County

The Cielo Vista WWTP is located northwest of the intersection of Fairview Road and Airline Highway. This treatment plant is owned by San Benito County, although it is operated by Bracewell Engineering. The treatment plant provides service to 70 acres of residential development with approximately 76 residences. No additional development is proposed in this area that would generate additional wastewater flows.

Approximately 1.2 miles of sewer collection pipe provide service to this area. The facility has capacity to treat up to 30,000 gallons of domestic wastewater per day. Average influent wastewater flow is estimated at 20,000 gallons per day. Treated effluent is disposed via leachfields adjacent to the facility. (City of Hollister et al. 2008:3-14.)

SOLID WASTE MANAGEMENT

The San Benito County Integrated Waste Management Department is responsible for oversight of landfill operations and the County refuse/recycling contract. In addition, this department serves as lead agency for the San Benito County Integrated Waste Management Regional Agency, which consists of unincorporated areas in the County and City.

Solid waste disposal in the City is currently provided under contract by the Hollister Disposal Company. Solid waste is disposed at the John Smith Road Landfill (a Class III nonhazardous solid waste disposal facility). The landfill is located on John Smith Road east of Fairview Road. Two additional landfills are located near the study area, including Buena Vista Drive Sanitary Landfill in Santa Cruz County and Johnson Canyon Sanitary Landfill in Monterey County. All three landfills are permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, green materials, agricultural debris, and other nonhazardous designated debris. Table 3.8-1 shows the pertinent characteristics for landfills located in or near the study area.

Table 3.8-1
Landfills in or near the Study Area

Landfill	County	Remaining Capacity (million cubic yards)	Remaining Capacity	Max. Permitted Waste (tpd)	Construction/Demolition Waste Accepted	Contaminated Soil Accepted
John Smith Road Class III Landfill	San Benito	3.6	77.7%	500	Yes	No
Buena Vista Drive Sanitary Landfill	Santa Cruz	3.9	53%	838	Yes	Yes
Johnson Canyon Sanitary Landfill	Monterey	6.9	50%	1,574	Yes	No

Notes: tpd = tons per day
Source: Data compiled by AECOM in 2010, based on California Integrated Waste Management Board's online landfill database from 2000 (CIWMB 2008)

3.8.2 REGULATORY CONTEXT

No federal plans, policies, regulations, or laws related to utilities and public services apply to the proposed Program. State, regional, and local plans, policies, and regulations that must be considered are described in the following subsections.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Integrated Waste Management Act of 1989

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the California Legislature passed the California Integrated Waste Management Act (CIWMA) of 1989 (Assembly Bill [AB] 939), effective January 1990 (California Integrated Waste Management Board [CIWMB] 2007). According to the CIWMA, all cities and counties were required to divert 25% of all solid waste from landfill

facilities by January 1, 1995, and 50% by January 1, 2000. Each city is required to develop solid waste plans demonstrating integration of the CIWMA plan with the county plan. The plans must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

City of Hollister General Plan

The following policies of the City of Hollister General Plan Community Services and Facilities Element are applicable to the proposed Program:

GOAL CSF1: Coordinate with other agencies and plan for the provision of adequate infrastructure, facilities, and services.

- **Policy CSF1.1** Adequate Capabilities and Capacity of Local Facilities—Ensure that future growth does not exceed the capabilities and capacity of local public services such as wastewater collection and treatment, local water supply systems, fire and police protection, maintenance of streets and roads, local school systems, parks and recreational facilities, and landfill capacity, and ensure that public services meet federal and state standards and are available in a timely fashion.

GOAL CSF2 - Plan for adequate sewer and water facilities.

- **Policy CSF2.1** Sewer and Water Facilities—Coordinate with responsible districts and agencies to assure that sewer and water facility expansion and/or improvements meet federal and state standards and occur in a timely manner.

- **Policy CSF2.2** Provision of Sanitary Sewerage Capacity for Commercial and Industrial Uses—Reserve sanitary sewerage capacity for future commercial and industrial uses.

3.8.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Evaluations of potential impacts on utilities and public services are based on a review of the Master Plan (MOU Parties 2008), the Hollister Urban Area Water and Wastewater Master Plan (City of Hollister et al.), and data from the CIWMB. Impacts to utilities and public services are primarily described with respect to the overall Program. Where possible, impacts were compared to existing service capacity against future demand.

THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State CEQA Guidelines, as amended, a significant impact on utilities and public services would occur if the proposed Program would:

- exceed wastewater treatment requirements of the applicable RWQCB;

- require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

- result in a determination by the wastewater treatment provider which serves or may serve the Program that it has inadequate capacity to serve the Program’s projected demand in addition to the provider’s existing commitments;

- be served by a landfill with insufficient permitted capacity to accommodate the Program's solid waste disposal needs; and
- fail to comply with federal, state, and local statutes and regulations related to solid waste.
- create a need for the development of new service facilities (e.g., fire, police, schools, and other public facilities, the construction of which could result in significant environmental impacts;
- create circumstances where existing services and facilities could not meet established performance standards.

IMPACT ANALYSIS

The proposed Program would not alter adopted land use plans of the City or County. The proposed Program would not involve construction of land uses (i.e., new housing or development of new businesses) that would result in an increased demand for fire protection, law enforcement, or public schools. Indirect impacts related to the potential that the proposed Program could indirectly increase demand for these services are addressed in Chapter 6, "Growth-Inducing Impacts."

IMPACT 3.8-1 Increased Demand for Wastewater Treatment and Distribution Facilities. *The proposed Program includes expansion of the City's WRF, potential connection of the Cielo Vista WWTP to the City's WRF, potential connection of existing development served by septic systems in the HUA as well as potential connection of new incorporated and unincorporated development in the Hollister Urban Area (HUA) to the City WRF, and upgrade of the existing Ridgemark WWTPs. In addition, the proposed Program would construct new collection and conveyance infrastructure, such as gravity flow pipelines, force mains, and pump stations, to serve new customers within the HUA. A time-phased implementation plan has been developed for the new wastewater treatment and conveyance facilities. These facilities would be constructed and expanded incrementally to ensure that adequate wastewater treatment capacity and conveyance facilities would be to accommodate future wastewater flows generated within the HUA. Less than significant.*

Over the planning horizon of the master plan, development of approximately 2,760 acres is envisioned throughout the HUA including residential, rural, commercial, and industrial properties. The proposed Program includes expansion of the City's WRF, potential connection of the Cielo Vista WWTP to the City's WRF, potential connection of existing development served by septic systems in the HUA as well as potential connection of new incorporated and unincorporated development in the Hollister Urban Area (HUA) to the City WRF, and upgrade of the existing Ridgemark WWTPs.

The City's WRF, recently completed in 2009, has a capacity of 4 mgd. The WRF would require a 1 mgd expansion between 2018 and 2023, depending on the growth rate in the HUA. The memorandum of understanding (MOU) identifies the City's WRF as the primary wastewater treatment plant for the HUA, including areas within the County that are designated to be served by that facility. Furthermore, the MOU states that within the HUA, all wastewater shall be treated at a central wastewater treatment plant. It is expected that new developments within the HUA would connect to the City's wastewater collection system, with the exception of parcels that would connect to the Ridgemark wastewater collection system (see Figure 2-6 in Chapter 2, "Program Description") and future satellite wastewater separation plants for the recovery of water for local recycling.

Under the proposed Program, the City would request approval from LAFCO for a service area boundary change to provide outside jurisdiction wastewater service to unincorporated lands within the HUA. Implementation of the proposed Program would include a requirement that new developments connect to municipal sewer rather than use septic systems. This is consistent with direction from the RWQCB to minimize construction of new septic systems

within the HUA to protect water quality and public health. The location and timing of other future unincorporated new development in the HUA would be subject to project-specific environmental review by San Benito County.

The Cielo Vista Estates collection, conveyance, and treatment system has adequate capacity to meet current wastewater flows and no improvements are currently proposed at the Cielo Vista Estates WWTP. In the future, the Cielo Vista Estates WWTP will likely have the option of connecting to the City's system to meet the Central Coast RWQCB WDR requirements. Given the volume of flow from the Cielo Vista Estates WWTP relative to the capacity of the City WRF, conveyance of raw wastewater from the WWTP could be accommodated by the WRF.

The proposed Program would include construction of a new WWTP at the existing Ridgemark I WWTP site and the decommissioning of Ridgemark II WWTP. The new Ridgemark WWTP would be designed to meet future wastewater treatment demands within its existing service area and additional lands identified in the Sunnyslope County Water District Ridgemark Wastewater Treatment and Recycled Water Improvements Project Final EIR (see Chapter 2, Figure 2-6).

The proposed Program would construct new collection and conveyance infrastructure, such as gravity flow pipelines, force mains, and pump stations, to new serve customers within the HUA. In addition, connection of the Cielo Vista Estates WWTP to the City's WRF would require new conveyance facilities. These facilities would ensure that adequate wastewater collection and conveyance capacity would accommodate future wastewater flows generated within the HUA.

A time-phased implementation plan has been developed for the new wastewater treatment and conveyance facilities (see Figure 2-1 in Chapter 2, "Program Description"). If actual demands do not meet projected demands, the schedule for implementation would be adjusted. These facilities would be constructed and expanded incrementally to ensure that adequate wastewater treatment capacity and conveyance facilities would be to accommodate future wastewater flows generated within the HUA. Therefore, this impact is considered **less than significant**.

IMPACT 3.8-2 Potential Temporary Damage to Existing Public Utilities Resulting in Disruption of Utilities Service. *New collection and conveyance infrastructure associated with the proposed Program would be constructed in existing road rights-of-way. Construction techniques could inadvertently damage existing utility infrastructure causing disruption of service. Less than significant with mitigation.*

New collection and conveyance infrastructure associated with the proposed Program would be constructed in existing road rights-of-way and it is common for road rights-of-way often include multiple utility lines. Construction techniques, such as open-cut or cut-and-cover, could inadvertently damage existing utility infrastructure causing disruption of service. Therefore, this impact is considered **potentially significant**.

Mitigation Measure 3.8-1a: Locate Utility Lines, Confirm Utility Line Information Prior to Excavation, and Reconnect Utilities Promptly.

The project proponent or its contractors shall identify underground utility lines, such as natural gas, electricity, sewer, telephone, fuel, and water lines, that may be encountered during excavation work during the design phase. The project proponent or its contractors shall find the exact location of underground utilities by safe and acceptable means. Information regarding the size, color, and location of existing utilities shall be confirmed by the utility service provider. The project proponent shall prepare a detailed engineering and construction plan that identifies construction methods and protective measures to minimize impacts on utilities. The engineering and construction plan shall be submitted to the City of Hollister Public Works Department for review and approval before issuance of grading permit. Construction shall be scheduled to minimize or avoid interruption of utility services to customers. The project proponent or its contractors shall promptly reconnect any disconnected utility lines.

Implementation of Mitigation Measures 3.8-2 would reduce potential temporary damage to existing to a **less-than-significant** level because ensuring existing utility lines are identified and avoided during construction.

IMPACT 3.8-3 Short-Term Generation of Solid Waste during Project Construction. *Project construction would generate short-term construction-related debris and waste. The city and county do not implement construction and demolition debris recycling ordinances and all solid waste generated during construction could potentially disposed in local landfills resulting in exceedance of daily permitted disposal limits. In addition, the quantity of waste materials could lower overall diversion rates as calculated for compliance with the CIWMA. Less than significant with mitigation.*

CIWMB calculates solid waste business generation rates based on Federal standard industrial classifications and averages of samples from individual businesses throughout California. CIWMB estimates that construction activities in the City typically generate an average of approximately 933 tons per year of solid waste. Of this total, construction-related rock, soil, and concrete debris comprised approximately 63 tons per year and other construction and demolition debris comprised approximately 105 tons per year (CIWMB 2008a, b). The proposed Program would contribute to the total construction-related solid waste generated in the City; however, the exact quantity of waste materials cannot be determined at this time. Solid waste generated by construction activities could be disposed of at the John Smith Road Class III Landfill, Buena Vista Drive Sanitary Landfill, and Johnson Canyon Sanitary Landfill, which are permitted to accept construction/demolition waste, including clean soil. Only Buena Vista Drive Sanitary Landfill is permitted to accept contaminated soil.

The CIWMA requires all California cities and counties to implement AB 939 to achieve the 50% solid waste diversion goal. The city and county do not implement construction and demolition debris recycling ordinances and all solid waste generated during construction could potentially be disposed of in local landfills resulting in exceedance of daily permitted disposal limits. In addition, the quantity of waste materials could lower overall diversion rates as calculated for compliance with the CIWMA. Therefore, impacts related to the short-term generation of solid waste during construction of the proposed Program would be **potentially significant**.

Mitigation Measure 3.8-3: Prepare and Implement a Construction Recycling Plan.

The project proponent shall prepare and implement a construction recycling plan for all Program elements involving construction activities. The recycling plan shall address the major recyclable materials, such as soil, metal scraps, and cardboard packaging, generated by project construction and identify the means to divert these materials away from landfills.

All recyclable materials shall be disposed of at the John Smith Road Class III Landfill, Buena Vista Drive Sanitary Landfill, and Johnson Canyon Sanitary Landfill, or other designated recycling facility permitted to accept construction debris and solid waste. Construction recycling plans shall be submitted to the San Benito County Integrated Waste Management Department for review and approval before issuance of grading permits for all Program elements. The construction recycling plans shall be implemented during construction of all project phases.

Implementing Mitigation Measure 3.8-3 would reduce potential significant impacts associated with the generation of construction-related debris and solid waste to **less-than-significant** level by ensuring that a recycling plan is prepared and implemented during construction of all Program elements.

IMPACT 3.8-4 Increased Generation of Solid Waste Resulting from Brine Disposal. *Demineralization of urban wells would result in the collection of brine. Salt classified as a nonhazardous waste could be disposed of at the John Smith Road Class III Landfill, Buena Vista Drive Sanitary Landfill, and Johnson Canyon Sanitary Landfill, which all have sufficient permitted capacity to accommodate brine disposal.* ***Less than significant.***

Demineralization of urban wells would result in the collection and disposal of brine, which is highly concentrated salt water. Salt classified as a nonhazardous waste could be disposed of at the John Smith Road Class III Landfill, Buena Vista Drive Sanitary Landfill, and Johnson Canyon Sanitary Landfill all of which are Class III landfills that are permitted to accept nonhazardous waste.

The brine stream that would be generated by the demineralization process is estimated to be 7-20% of the volume to be treated. The amount of water to be treated and the brine generated would vary from year to year, depending on demands, source water quality, and other factors. Based on the current understanding of potential demineralization operations, the annual volume of brine generated could be on the order of 80 to 225 af. This volume of brine would result in 109 tons per year (0.3 tons per day [tpd]) to 306 tons per year (0.8 tpd) of solid waste.

The estimated range of brine generated by demineralization of urban wells (0.3 to 0.8 tpd) during the planning horizon of the proposed Program (2023) would be less than 1% of the, maximum tpd that could be received at the John Smith Road Class III Landfill, Buena Vista Drive Sanitary Landfill, and Johnson Canyon Sanitary Landfill. Therefore, the John Smith Road Class III Landfill, Buena Vista Drive Sanitary Landfill, and Johnson Canyon Sanitary Landfill have sufficient permitted capacity to accommodate brine disposal, this impact is **less than significant**.

3.8.4 RESIDUAL SIGNIFICANT IMPACTS

With implementation of the mitigation measures described above, the proposed Program would not result in any residual significant impacts related to utilities and public services.

This page intentionally left blank.

3.9 HAZARDS AND HAZARDOUS MATERIALS

3.9.1 ENVIRONMENTAL SETTING

EXISTING HAZARDOUS SUBSTANCES SITES WITHIN THE STUDY AREA

The California Environmental Protection Agency (Cal/EPA) maintains a list of hazardous substances sites (i.e., Cortese List), which is used as a planning tool in permitting processes and for compliance with CEQA. The Cortese List is updated at least annually, pursuant to Government Code Section 65962.5, and includes information compiled by the California Department of Toxic Substances Control (DTSC), DPH, the SWRCB, and the California Integrated Waste Management Board.

The Cortese List is available in an online database (http://www.calepa.ca.gov/SiteCleanup/CorteseList/), and consists of:

- hazardous waste and substances sites from the DTSC EnviroStor database;
- leaking underground storage tank sites from the SWRCB GeoTracker database;
- solid waste disposal site identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit;
- cease and desist orders and cleanup and abatement orders (nonhazardous materials) from SWRCB; and
- sites determined by DTSC to need immediate corrective action to abate an imminent or substantial endangerment, or a site where DTSC has taken or contracted for corrective action because a facility owner or operator has failed to comply with a corrective action order.

The study area currently contains hazardous waste and substances sites subject to listing on the EnviroStor database, leaking underground storage tanks sites on the GeoTracker database, and cease and desist orders and cleanup and abatement orders for nonhazardous materials from SWRCB. Over the lifetime of the proposed Program, it is likely that more hazardous waste and substances sites will be identified within the study area. Table 3.9-1 includes SWRCB and DTSC sites listed on the online Cortese List database.

Table 3.9-1
DTSC- and SWRCB-Listed Hazardous Waste and Substances Sites within the Study Area

Site Name	Type of Site	Hazardous Substance	Status
266 Line Street	Leaking Underground Storage Tank	Gasoline	Site Assessment
BAE Systems	Former Munitions Test Site	Explosives, Perchlorate	Site Assessment
E's Ranch Milk SS	Leaking Underground Storage Tank	Gasoline	Remediation
Former Chevron	Leaking Underground Storage Tank	Gasoline	Site Assessment
GAF Leatherback Industries Warehouse Facility	Industrial Pollution	Diesel, Tetrachloroethylene	Open
Guerra Nut Shelling Company	Leaking Underground Storage Tank	Gasoline	Remediation
Hollister Airport	Pesticide-Contaminated Soils	DDD, DDE, DDT, Toxaphene	Open (Inactive)
M&M Exxon	Leaking Underground Storage Tank	Gasoline	Verification Monitoring
Mel's Chevron	Leaking Underground Storage Tank	Gasoline	Remediation

Table 3.9-1 DTSC- and SWRCB-Listed Hazardous Waste and Substances Sites within the Study Area			
Site Name	Type of Site	Hazardous Substance	Status
Mike's BP Station	Leaking Underground Storage Tank	Gasoline	Site Assessment
San Benito Tire	Leaking Underground Storage Tank	Gasoline	Site Assessment
Toro Petroleum Company	Leaking Underground Storage Tank	Gasoline	Verification Monitoring
WFS Hollister	Aquifer Contamination	Nitrates	Remediation
Bomb Target No. 5 Hollister	Formerly Used Defense Site	UXO, MEC	Active
PG & E Hollister MGP	Voluntary Cleanup	Benzene, Polynuclear Aromatic Hydrocarbons, Toluene	Active

Notes: DDD = dichlorodiphenyldichloroethane; DDE = dichlorodiphenyldichloroethylene; DDT = dichlorodiphenyltrichloroethane; DTSC= California Department of Toxic Substances Control; SWRCB = State Water Resources Control Board; UXO=unexploded ordnance; MEC=munitions and explosives of concern
Source: SWRCB 2010; DTSC 2010

SCHOOLS WITHIN ONE-QUARTER MILE OF THE PROPOSED PROGRAM

Appendix G of the CEQA Guidelines (PRC Sections 21151.2 and 21151.4) requires EIRs to assess whether a project would emit hazardous air emissions or involve the handling of extremely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. There are approximately 15 schools in the PEIR study area.

AIRPORT AND AIRSTRIP WITHIN 2 MILES OF THE PROPOSED PROJECT

Safety hazards associated with airports are generally related to construction of tall structures and the creation of wildlife attractants (e.g., wetlands, golf courses, and waste disposal operations) that could interfere with airplane flight paths. Appendix G of the State CEQA Guidelines (PRC Section 21096) requires analysis of airports within 2 nautical miles of a proposed project. Three airports are located within or near to (i.e., 2 miles) the study area, specifically:

- Hollister Municipal Airport, at 90 Skylane Drive, Hollister;
- Christiansen Ranch Airstrip, at the northern extent of Rodeo Drive, Hollister; and
- Frazier Lake Airpark, at 7901 Frazier Lake Road, Hollister.

WILDLAND FIRE RISK

The California Department of Forestry and Fire Protection (CAL FIRE) has developed a fire hazard severity scale that considers vegetation, climate, and slope to evaluate the level of wildfire hazard in all State Responsibility Area lands. A State Responsibility Area is defined as a part of the state where CAL FIRE is primarily responsible for providing basic wildland fire protection assistance. Areas under the jurisdiction of other fire protection services are considered to be Local Responsibility Areas. CAL FIRE designates three levels of Fire Hazard Severity Zones (Moderate, High, and Very High) to indicate the severity of fire hazard in a particular geographical area. The study area is located within both local and state responsibility areas. The majority of the study area falls under local jurisdiction and is not zoned as a fire hazard severity area. A small portion in the southeastern side of the study area falls under state jurisdiction and has a moderate fire hazard severity rating (CAL FIRE 2007).

3.9.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Hazardous Materials Handling

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is EPA, under the authority of the 1976 Resource Conservation and Recovery Act (RCRA). RCRA established an all-encompassing federal regulatory program for hazardous substances. RCRA was amended by the Hazardous and Solid Waste Amendments of 1984, which specifically prohibits the use of certain techniques for the disposal of various hazardous substances. The Federal Emergency Planning and Community Right to Know Act of 1986 imposes hazardous-materials planning requirements to help protect local communities in the event of accidental release of hazardous substances. EPA has delegated many of the RCRA requirements to DTSC. Use and safety considerations related to blasting activities are regulated by the Occupational Safety and Health Administration (OSHA) under the Construction Safety and Health Outreach Program.

Worker Safety Requirements

OSHA is responsible for ensuring worker safety, setting federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). OSHA also establishes criteria by which each state can implement its own health and safety program.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) was enacted in 1980. The goals of CERCLA are to:

- establish prohibitions and requirements concerning closed and abandoned hazardous waste sites;
- provide for liability of persons responsible for releases of hazardous waste at these sites; and
- establish a trust fund to provide for cleanup when no responsible party can be identified.

The law authorizes two kinds of response actions:

- short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response; and

- long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on EPA's National Priorities List (NPL).

Wildlife Hazards on or Near Airports

The Federal Aviation Administration (FAA) addresses control of hazardous wildlife in Advisory Circular (AC) 150/5200-33b, Hazardous Wildlife Attractants on or Near Airports. The FAA provides direction on where public-use airports should restrict land uses that have the potential to attract hazardous wildlife. FAA recommends a distance of 10,000 feet separating wildlife attractants and aircraft movement areas. The area within a 10,000-foot radius of the Airport Operations Area is designated as the Critical Zone. The FAA definition of wildlife attractants in AC 150/5200-33B includes human-made or natural areas, such as poorly drained areas, retention ponds, agricultural activities, and wetlands.

Airport and Airspace Safety

Part 77 of the Federal Aviation Regulations (FAR), "Objects Affecting Navigable Airspace," has been adopted as a means of monitoring and protecting the airspace required for safe operation of aircraft and airports. Objects that exceed certain specified height limits constitute airspace obstructions. FAR Section 77.13 requires that the FAA be notified of proposed construction or alteration of certain objects in a specified vicinity of an airport.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Hazardous Materials Handling

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires preparation of hazardous materials business plans and disclosure of hazardous-materials inventories. Such business plans must include an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, provisions for employee training in safety, and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state. Local agencies, including the County of San Benito Health and Human Services Agency, administer these laws and regulations.

Worker Safety Requirements

California OSHA (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA regulations pertaining to the use of hazardous materials in the workplace (Title 8 of the CCR) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans. Cal/OSHA enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous-waste sites. The hazard communication program requires that employers make Material Safety Data Sheets available to employees and document employee information and training programs.

Emergency Response to Hazardous Materials Incidents

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local governments and private agencies. Response to hazardous-material incidents is one part of this plan. The plan is managed by the Governor's Office of Emergency Services (OES), which coordinates the responses of other agencies, including the Cal/EPA, California Highway Patrol (CHP), DFG, Central Valley RWQCB, and the Hollister Fire Department.

Hazardous Materials Transport

State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are CHP and the California Department of Transportation (Caltrans). Together, these agencies determine container types used and license hazardous-waste haulers for transportation of hazardous waste on public roads, including explosives that may be used for blasting.

Government Code Section 65962.5 (Cortese List)

The provisions of Government Code Section 65962.5 are commonly referred to as the "Cortese List". The Cortese List is a planning document used by state and local agencies to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires

Cal/EPA to update the Cortese List annually. DTSC is responsible for a portion of the information contained in the Cortese List. Other California state and local government agencies are required to provide additional hazardous material release information for the Cortese List.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

San Benito County General Plan

The policy in the San Benito County General Plan that is applicable to the proposed Program is included in the Health and Safety Element, as follows:

- **General Plan Policy 28 Avoid Airport Hazards Policy:** Prohibit land use activities within unincorporated areas which interfere with the safe operation of aircraft or that would be subject to hazards from the operation of aircraft.

City of Hollister General Plan

Policies within the City of Hollister General Plan that are applicable to the proposed Program are included in the Health and Safety Element, as follows:

- **Policy HS1.3** Coordination with San Benito County and Other Agencies on Safety Matters: Cooperate with the County of San Benito and with other government agencies in all matters related to safety, hazardous waste management, and emergency planning.

- **Policy HS1.13** Hazardous Waste Management: Support measures to responsibly manage hazardous waste to protect public health, safety, and the environment, and support state and federal safety legislation to strengthen requirements for hazardous materials transport.

- **Policy HS1.14** Hazardous Materials Storage and Disposal: Require proper storage and disposal of hazardous materials to prevent leakage; potential explosions, fires, or the escape of harmful gases; and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal. Provide the public, industry, agriculture, and local government with the available information needed to enable them to take rational and cost-effective actions to minimize, recycle, treat, dispose of, or otherwise manage hazardous wastes within the Hollister Planning Area.

- **Policy HS2.4** Access for Emergency Vehicles: Provide adequate access for emergency vehicles and equipment, including providing a second means of ingress and egress to all development.

San Benito County Emergency Operations Plan

The San Benito County Emergency Operations Plan is currently under development and could be implemented at some time during the Program period.

3.9.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

This section addresses potential sources of hazards and risks related to hazardous materials that may be associated with implementation of the proposed Program. This analysis was based on a search of Cortese List Resources and a review of aerial photographs of the study area. In addition, wildfire hazards and risks associated with implementation of the proposed Program were considered, based on fire hazard severity zones established by CAL FIRE.

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on Appendix G of the State CEQA Guidelines, as amended. The proposed Program would result in a significant impact related to public health and hazards if it would:

- create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- for a project located within an airport land use plan or within 2 miles of a public airport, result in a safety hazard for people residing or working in the project area;
- for a project located in the vicinity of a private air strip, result in a safety hazard for people residing or working in the project area;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or residences are intermixed with wildlands.

IMPACT ANALYSIS

As described in Section 3.9.1, "Environmental Setting," the highest rating for wildfire risk in the study area is moderate. Construction in or near areas rated as moderate would not expose people or structures to a substantial risk of loss, injury, or death involving wildland fires.

IMPACT 3.9-1 Accidental Spills of Hazardous Materials. *Proposed Program-related construction and maintenance activities would involve the use of potentially hazardous materials, such as fuels, oils and lubricants, and cleaners. Compliance with applicable regulations would reduce the potential for accidental release of hazardous materials during their transport and during construction activities.* Less than significant.

Proposed Program-related construction and maintenance activities would involve the use of potentially hazardous materials, such as fuels (gasoline and diesel), oils and lubricants, and cleaners (which could include solvents and corrosives in addition to soaps and detergents) that are commonly used in construction projects. Construction contractors would be required to use, store, and transport hazardous materials in compliance with federal, state, and local regulations during project construction and operations. Risks to water quality associated with incidental releases of potentially hazardous materials in the study area are addressed in Section 3.2, "Water Resources." An appropriate SWPPP would be prepared prior to and implemented for each of the Program elements as part of the NPDES permit process. The SWPPP would include spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste, hazardous materials used for equipment operation, and emergency procedures for responding to spills. Compliance with the applicable regulations would reduce the

potential for accidental release of potentially hazardous materials during their transport and during project construction activities. Therefore, this impact is considered **less than significant**.

Mitigation Measure: No mitigation measures are required.

IMPACT 3.9-2 Potential Exposure of Construction Workers and the General Public to Unknown Hazardous Materials Encountered in the Study Area*. Hazardous materials may have been released into the study area near potential construction sites, which could expose construction workers to harmful substances. Less than significant with mitigation.*

Former land uses within the study area, such as dry cleaners, gasoline stations, and agricultural chemical distributors, might have resulted in a release of hazardous materials into the soil, groundwater, or air. The presence or likely presence of such materials is unknown because Phase 1 and II Environmental Site Assessments (ESAs) have not been conducted at Program element site locations. Hazardous materials generally associated with past agricultural use include asbestos in underground pipelines and soil contaminated with pesticides and herbicides. If hazardous materials exist, construction activities could cause construction workers and the general public to be exposed to harmful substances. Because the presence of hazardous materials in the study area is unknown, this impact is considered **potentially significant**.

Mitigation Measure 3.9-2: Conduct Phase I and II Environmental Site Assessments and Implement Required Measures.

Before the start of earth-moving activities, the project proponent shall retain a registered environmental assessor to conduct Phase 1 ESAs and, if necessary, Phase II ESAs and/or other appropriate testing for all areas subject to ground-breaking activities under the Program element. The assessor shall also conduct, as necessary, analyses of soil and/or groundwater samples for the potential contamination sites. Recommendations in the Phase I and II ESAs to address any contamination that is found shall be implemented before initiating ground-disturbing activities in these areas.

The project proponent shall be required to comply with the applicable federal, state, and local laws. The appropriate federal, state, and local agencies shall be notified if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities under the Program element. Any contaminated areas shall be remediated in accordance with recommendations made by RWQCB, DTSC, and/or other appropriate federal, state, or local regulatory agencies.

Implementing Mitigation Measure 3.9-2 would reduce the potentially significant impact from possible human exposure to unknown hazardous materials at the Program element sites to a **less-than-significant** level because potentially hazardous materials would be identified and appropriate testing and/or remediation would be implemented to ensure that construction workers and the general public were not exposed to unsafe levels of hazardous materials, in accordance with federal, state, and local laws and regulations.

IMPACT 3.9-3 Hazardous Emissions or Handling of Hazardous or Acutely Hazardous Materials, Substances, or Waste within One-Quarter Mile of an Existing or Proposed School*. Potentially hazardous materials, such as fuels (gasoline and diesel), oils and lubricants, and cleaners (which could include solvents and corrosives in addition to soaps and detergents) that are commonly used in construction projects would be used near schools located within the PEIR study area. The potential exists for exposure to both known and previously unknown hazardous materials within one-quarter mile of a school during construction activities. Less than significant with mitigation.*

Numerous schools are located within the PEIR study area. Construction and maintenance activities would involve the use of potentially hazardous materials, such as fuels (gasoline and diesel), oils and lubricants, and cleaners

(which could include solvents and corrosives in addition to soaps and detergents) that are commonly used in construction projects. Additionally, undocumented contaminated soil or water may be found during construction. Because spills of hazardous substances could occur, **t**he potential exists for exposure to both known and previously unknown hazardous materials within one-quarter mile of a school during construction activities. An appropriate SWPPP would be prepared prior to and implemented for each of the Program elements. The SWPPP would include spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste, hazardous materials used for equipment operation, and emergency procedures for responding to spills. Depending on the extent, substance, and location of a spill, health concerns related to exposure of hazardous materials on school-aged children could occur. Therefore, this impact would be **potentially significant**.

Mitigation Measure 3.9-3: Notify the School District and Applicable Schools with Jurisdiction within One-Quarter Mile of Project Construction Activities.

The project proponent shall provide written notification to each school within one-quarter mile of proposed Program construction activities within 30 days prior to certification of a project-specific CEQA document approving a Program element within one-quarter mile of affected schools. The project proponent shall disclose the type of potential hazards associated with Program element or project implementation with the applicable school district and provide guidance on the potential effects that the hazards could have on school children.

In combination with the spill prevention and contingency measures in the SWPPP, implementation of Mitigation Measure 3.9-3 would reduce impacts associated with hazardous materials emissions related to schools within one-quarter mile of proposed project construction activities to a **less-than-significant** level because under CEQA, the notification process is considered to satisfy the requirements of CEQA (PRC Section 21151.4). The SWPPP describes how the project proponent or its contractor would respond to a spill and the prior notification of the school district would allow individual schools prepare the appropriate contingency plans, ensure avoidance, or take other relevant actions to protect school-aged children from exposure to hazardous substances.

IMPACT 3.9-4 Potential Public Health Hazards from Exposure of Individuals in the Study Area to Known Hazardous Materials Sites Outside the Study Area Pursuant to Government Code Section 65962.5. *Cortese-listed sites located within the study area could conflict with implementation of the proposed Program and adversely affect public health or the environment. Less than significant with mitigation.*

Past activities within the study area have resulted in several Cortese-listed sites that could conflict with implementation of the proposed Program. These conflicts could include: exposure of hazardous materials to construction workers and the general public from soil or groundwater contamination, interference with remediation activities, and construction activities contrary to deed restrictions. The Cortese List is required to be updated on an annual basis and remediation efforts of existing sites are on-going. Because the location and remediation status of existing and future Cortese-listed sites cannot be predicted, this impacted is considered **potentially significant**.

Mitigation Measure 3.9-4a: Retain a Licensed Professional to Investigate the Status of Cortese-Listed Sites and Implement All Remedial Measures, as Necessary.

Proposed Program elements involving construction activities shall not occur in any areas subject to Cortese listing until the appropriate regulatory agencies, such as DTSC and RWQCB, have been consulted and all actions required by the regulatory agencies (e.g., dewatering, installation of groundwater monitoring wells, and soil testing) have been implemented.

Mitigation Measure 3.9-4b: Coordinate Program Construction Activities to Avoid Interference with Remediation Activities, as Necessary.

For all Program elements that occur in or adjacent to Cortese-listed sites, the project proponent shall provide notice to the hazardous waste site landowner or any successor in interest and DTSC, RWQCB, the City of Hollister, and San Benito County of the location, nature, and duration of construction activities at least 30 days before construction activities begin in areas on or near property with current or planned remediation activities. Remedial actions, as required by DTSC, RWQCB, and/or the EPA, may include, but shall not be limited to:

- deed restrictions on land and groundwater use;
- soil excavation;
- monitoring;
- biological, chemical, and/or physical treatment;
- extraction; and/or
- pump and treat activities.

Before the approval of grading plans that include areas within a Cortese-listed site boundary, the project proponent shall work with the hazardous waste site landowner, DTSC, and RWQCB or any successor to schedule the timing of construction activities to prevent potential conflicts with remediation activities.

Implementation of Mitigation Measures 3.9-4a–b would reduce the potentially significant impacts related to exposure to hazardous substances from known sites on the Cortese List to a **less-than-significant** level because a site plan identifying remediation activities and setting forth procedures to appropriately handle hazardous materials would be prepared; hazardous substances would be removed and properly disposed by a licensed contractor in accordance with federal, state, and local regulations; and coordination with applicable agencies would ensure that there would be no conflicts with Cortese-listed sites.

IMPACT 3.9-5 Potential Safety Hazards for People Residing or Working Near a Public or Private Airstrip. *Construction near airports can pose safety hazards to passengers, pilots, and people working in or residing near a public or private airstrip. Less than significant with mitigation.*

Construction near airports can pose safety hazards to passengers, pilots, and people working in or residing near a public or private airstrip. Safety hazards associated with airports are generally related to construction of tall structures and the creation of wildlife attractants (e.g., wetlands, golf courses, and waste disposal operations) that could interfere with airplane flight paths. Land uses such as these have been linked to increased incidence of aircraft accidents. As a result, FAA guidance has been circulated (see Section 3.9.2, “Regulatory Context”) and airport land use plans are prepared to avoid incompatible land uses near to airports. Construction of brine drying ponds within two miles of an airport would result in incompatible land uses because they would attract wildlife that could interfere with aviation. Because specific brine disposal methods or locations have not yet been developed, this impact is considered to be **potentially significant**.

Mitigation Measure 3.9-5: Coordinate with Airports and Airport Planning Agencies When Construction Activities Occur within 2 miles of an Airport or Airstrip.

Avoid locating brine drying ponds within two miles of an airport if feasible.

If brine drying ponds occur within 2 miles of an airport or airstrip, the project proponent shall submit plans and specifications for the affected Program element to the applicable airport planning agencies for review and implement any recommendations from the agencies to the extent feasible.

Implementing Mitigation Measure 3.9-5 would reduce this impact to **less than significant** because coordination with airports and airport planning agencies would occur to ensure that the potential airport-related hazards minimized to acceptable level as a result of implementation of a Program element within 2 miles of an airport or airstrip.

IMPACT 3.9-6 Potential Interference with Emergency Evacuation Routes during Project Construction. *Construction of the proposed Program could increase traffic on local roadways associated with construction trips, which could interfere with emergency evacuation routes. Less than significant with mitigation.*

The proposed project could increase traffic on local roadways associated with construction trips. Depending on issues such as the location of construction, the number of construction workers required, and the timing of construction, emergency evacuation routes could be impaired due to increased traffic congestion. This impact is considered **potentially significant**.

Mitigation Measure 3.9-6: Implement Mitigation Measure 3.10-1 "Prepare and Implement Traffic Control Plan."

Implementing Mitigation Measure 3.9-6 would reduce the impact from the potential interference with an adopted emergency evacuation plan to a **less-than-significant** level because the appropriate state and local agencies would be involved in implementation detours to ensure acceptable traffic flow and reduce the risk of impairment to emergency evacuation routes.

3.9.5 RESIDUAL SIGNIFICANT IMPACTS

Implementation of the mitigation measures described in this section for the proposed Program would reduce all potential impacts associated with spills of hazardous materials; exposure to hazardous materials to schools, construction workers, and the general public; risks of upset associated with proposed pipelines; interference with emergency evacuation; and hazards in the vicinity of an airport or airstrip to **less-than-significant** levels.

3.10 TRANSPORTATION AND TRAFFIC

3.10.1 ENVIRONMENTAL SETTING

The transportation network within the PEIR study area includes an extensive roadway network, pedestrian walkways, bicycle routes, public transportation, aviation services, and a Union Pacific Railroad right-of-way.

ROADWAY NETWORK

Major highways found within the study area include:

- **State Route (SR) 25** is an important regional road that connects SR 198 near King City in the south with US 101 near Gilroy in the north. SR 25 is designated as an "Eligible State Scenic Highway" from SR 198 in Monterey County north to its junction with SR 156 in Hollister (Caltrans 2010). In the study area, SR 25 generally runs southeast-northwest and includes a bypass that skirts downtown Hollister. In the southern portion of the study area, SR 25 is also known as Airline Highway; in the northern portion of the study area, it is referred to as Bolsa Road. The Caltrans classifies this route as a minor arterial, and it is primarily a rural two-lane road except for a bypass around downtown Hollister.

- **SR 156** traverses northern San Benito County from US 101 west of San Juan Bautista to the San Benito–Santa Clara County line, where it connects with SR 152. Within the study area, SR 156 generally runs southwest-northeast, and it is usually considered the outer boundary of the HUA. SR 156 skirts west and north of the Hollister city limits, while Business Route 156 passes through downtown Hollister. Caltrans classifies SR 156 as a rural minor arterial and includes it as part of the Interregional Route System. It is also designated as a Federal Aid Primary Route and is part of the Freeway and Expressway System.

- **San Juan Road/Fourth Street** is a vital road that connects SR 156 in the west to downtown Hollister in the east. San Juan Road is maintained by the County outside the Hollister city limits.

The local traffic network within Hollister consists of arterial streets, collector streets, and local streets. Typically, arterial streets accommodate through traffic and extend around, rather than through, residential neighborhoods, commercial centers, and industrial areas. Collector streets supplement and provide access to arterial streets and neighborhoods. On such streets, the needs of through-traffic, turning, and parking must be balanced. Local streets primarily provide access to abutting properties, ease of access, pedestrian safety, and parking, which have priority over traffic movement. Important east/west roads include Wright Road/McCloskey Road, Santa Ana Road, Hillcrest Road, and Tres Pinos Road/Sunnyslope Road. Main north/south roads include San Felipe Road and Fairview Road.

PEDESTRIAN WALKWAYS

The City is filled with tree-lined streets, wide sidewalks, and neighborhoods built on a pedestrian scale. In many cases, these streets are well preserved and function as they were originally designed to function. Downtown Hollister has wide sidewalks that support commercial uses in the downtown area.

BICYCLE ROUTES

Currently, Class I and II bikeways are limited within the study area. Class I bikeways provide for bicycle travel on a paved right-of-way, completely separated from any street or highway. Class I bikeways are centered on Prospect Avenue/Airline Highway, between Hawkins Street and Sunset Drive, and SR 25, between Tres Pinos School to Southside Road. Class II bikeways provide a striped lane for one-way travel. Class II bikeways can be found on Sunnyslope Road, San Benito Street, and Union Road, among others. Additional Class I and II bikeways are proposed by the City and County, as referred to in their respective general plans.

The City and County have proposed to build Class III bikeways, which provide for shared use with pedestrians or motor vehicle traffic. No Class III bikeways currently exist within the study area.

PUBLIC TRANSPORTATION

San Benito County Express (County Express) operates three fixed bus routes and two area reservation services within the Hollister Urban Area. County Express also provides inter-county bus service from Hollister to three Gilroy locations. Furthermore, County Express offers Dial-A-Ride service between Hollister, San Juan Bautista, and Tres Pinos.

AVIATION SERVICES

The City owns and operates the Hollister Municipal Airport. The airport, located on the west side of San Felipe Road at Airport Drive, is home to the California Department of Forestry Air Attack Base, which plays an important role in suppressing wildfire in six counties. Hazel Hawkins Hospital also maintains a heliport at its Hollister facility.

RAILROAD RIGHT-OF-WAY

Within the study area, Union Pacific Railroad has a right-of-way that parallels McCray Street in the southeast and Bolsa Road (SR 25) in the northwest. The railroad is known as the Hollister Branch Rail Line and connects Hollister with Gilroy. Industrial and commercial businesses are found on either side of the right-of-way. Numerous railroad crossings exist within downtown Hollister. SBCOG has investigated the feasibility and need for a commuter rail operation between Hollister and San Jose.

3.10.2 REGULATORY CONTEXT

No federal plans, policies, regulations, or laws related to transportation resources apply to the proposed Program. State, regional, and local plans, policies, and regulations that must be considered are described in the following subsections.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Department of Transportation

Any encroachment within the right-of-way of a state highway or route is subject to Caltrans regulations, including issuance of an encroachment permit and the provisions of temporary traffic control systems. An encroachment, as defined in Section 660 of the Streets and Highways Coded, can be any tower, pole, pole line, pipe, pipe line, fence, billboard, stand, or building, or any structure or object of any kind or character that is within the right-of-way but not a part of the Caltrans facility. Authority for Caltrans to control encroachment within the state highway is contained in the Streets and Highways Code, starting with Section 660. Encroachment permits are intended to safeguard the affected jurisdictions' properties, either by providing preventive measures to be implemented during Program construction or providing corrective measures if damage occurs. Traffic control systems can include traffic control warning signs, lights, and/or safety devices to ensure the safety of the traveling public.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

San Benito County General Plan

The Transportation Element of the San Benito County General Plan has numerous policies to improve the transportation network throughout the County, with emphasis on bicycle and pedestrian facilities and safety.

There are no specific goals related to temporary effects of construction traffic on existing circulation patterns. The County General Plan Noise Element has a goal for reducing ground transportation related noise impacts that is discussed in the Noise chapter of this PEIR.

City of Hollister General Plan

Chapter 4, Circulation Element, of the City of Hollister General Plan provides goals, policies, and implementation measures to facilitate the orderly, efficient, and context sensitive expansion and development of Hollister's circulation systems. There are no specific goals related to temporary effects of construction traffic on existing circulation patterns.

3.10.3 Environmental Impacts and Mitigation Measures

Analysis Methodology

This analysis considers the range and nature of foreseeable traffic conditions on roadways in relevant portions of the study area and identifies the primary ways that construction and operation of the proposed Program could affect existing traffic conditions. Potential effects on roadways are discussed, as are potential effects on bicycle and pedestrian pathways that occur within the study area.

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on Appendix G of the State CEQA Guidelines, as amended. The proposed Program was determined to result in a significant impact related to transportation and traffic if it would:

- conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and nonmotorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- conflict with an applicable congestion management plan (CMP), including but not limited to level of service (LOS) standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- substantially increase hazards as a result of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- result in inadequate emergency access.

Impact Analysis

New facilities to be developed as part of the proposed Program would include water treatment plants, wells, percolation basins, pipelines, water storage tanks, and ancillary facilities. These facilities would not change air traffic patterns, even if located in proximity to an airport. In addition, the proposed Program would not create any long-term conflicts with any policies, plans, or programs supporting alternative transportation. San Benito County does not have a Congestion Management Plan, so Program implementation would not cause conflicts with an existing Congestion Management Plan. Facilities located within public rights-of-way (such as pipelines) would be

buried and as such would not include any design features that would increase hazards. No further discussion of these issues is provided in this PEIR.

The following Program elements were evaluated for their potential to cause transportation impacts and no impacts were identified:

- **Purchases or Transfers of Imported Water Supplies:** This Program element would use existing facilities and would not involve construction or cause impacts to transportation or traffic through its implementation.

- **Non-Structural Solutions**: This Program element includes water conservation, salinity education, a water softener ordinance, and dual distribution systems in new developments. These measures would reduce water demands, improve water quality, and not result in impacts to transportation or traffic through their implementation.

The remaining Program elements involve at least some construction and thus have the potential to impact transportation and traffic by reducing traffic circulation, roadway capacity and possibly emergency access,. Because this evaluation is based on Program-level descriptions of Program elements, it is assumed that construction of the following Program elements could result in impacts:

- North County Groundwater Bank,
- New Surface Water Treatment Plant,
- Phase 1 Demineralization of Urban Wells,
- New Pipeline to Ridgemark,
- New Treated Water Storage,
- Ridgemark Recycled Water,
- Phase 2a Recycled Water Program,
- New Urban Wells,
- Cielo Vista WWTP Connection to City WRF, and
- Phase 2b Recycled Water Program.

IMPACT 3.10-1 Reduced Traffic Circulation and Roadway Capacity Resulting from Temporary and Short-Term Construction Activities and Project Operations. *Program operations are not expected to result in impacts to traffic or transportation. However, the construction of some Program elements could occur near public roads and could adversely affect nearby traffic patterns on a temporary short-term basis. Less than significant with mitigation.*

There would be minimal staffing requirements at new facilities associated with the Program. The increase in personnel and facility visits for operations and maintenance would not reduce traffic circulation and roadway capacity. Consequently, Program operations would result in a **less-than-significant** impact to traffic circulation and roadway capacity.

New facilities to be developed as part of the proposed Program would include treatment plants, wells, percolation basins, pipelines, water storage tanks, and ancillary facilities. These facilities could be located in a variety of urban and rural settings in the study area. The exact locations for these facilities, specific construction methods, and haul routes have not been identified. The construction of some Program elements could occur near public roads and could adversely affect nearby traffic patterns on a temporary short-term basis.

Proposed Program construction activities could also result in temporary and short-term closures of bicycle and pedestrian facilities. Such closures would require bicyclists and pedestrians to avoid the potentially impacted areas by taking a slightly longer route. Given the number of alternative bicycle and pedestrian routes available around potential construction sites, this impact would be minor.

Installation of pipelines would primarily occur within road rights-of-way, which could lead to short-term traffic delays for vehicles traveling past construction zones as well as temporarily limit access to adjacent land uses. Because pipeline construction would require space to accommodate open trenches/pits and staging areas for material and equipment, the travel width of an adjacent roadway would likely be reduced, thus resulting in potential temporary short-term traffic delays within construction zones.

Additionally, some Program elements involve construction at existing facilities (Ridgemark WWTP, City WRF, Lessalt WTP). Construction equipment and personnel entering and exiting these sites would potentially reduce traffic circulation and roadway capacity near the facilities. At such ingresses and egresses, temporarily lane closures or stoppage of traffic might be required during construction.

The construction period for most facilities would be 18 months or less. To the extent feasible, two-way traffic would be maintained on all roadways. However, on roadways with restricted travel widths, alternative one-way travel might be required for certain Program elements during some portions of construction. If sufficient road width was not available, complete closure of roads could be temporarily required.

Depending on the location and timing of construction, impacts associated with traffic delays and lane or road closures (although temporary and short-term) could be significant. In areas where traffic volumes are high, for instance along San Felipe Road or Airline Highway, such closures during peak-hour traffic would result in temporary or short-term **potentially significant** impacts. Further evaluation of transportation and traffic impacts on area roadways would be conducted at a project level of analysis in subsequent CEQA documents, once the aboveground structures and pipeline alignments are more fully defined and located.

Mitigation Measure 3.10-1: Prepare and Implement a Traffic Control Plan.

The project proponent shall prepare a traffic control plan for each Program element that would involve partial road closures for more than 1 week. The traffic control plan shall be prepared in accordance with professional traffic engineering standards and in compliance with the requirements of the affected jurisdiction's encroachment permit requirements. The traffic control plan may include, but not be limited to, the following measures:

- Identify specific construction methods to maintain traffic flows on affected streets.
- Maintain the maximum amount of travel land capacity during nonconstruction periods and provide flagger control at sensitive sites to manage traffic control and flows.
- Limit the construction work zones to widths that, at a minimum, shall maintain alternate one-way traffic flow past the construction zones.
- Coordinate construction activities (time of year and duration) to minimize traffic disturbances adjacent to schools and commercial areas.
- Post advanced warning of construction activities to allow motorists to select alternative routes in advance.
- Prepare appropriate warning signage and lighting for construction zones.
- Identify appropriate and safe detour routes if closure of a roadway is required, and install signage that warns of road closures and detour routes.
- Maintain steel trench plates at construction sites to restore access across open trenches to minimize disruption of access to driveway and adjacent land uses. Construction trenches in street shall not be left open after work hours.

- The traffic control plan shall be reviewed for appropriateness and approved by the governing public works department.

Implementing Mitigation Measure 3.10-1 would reduce traffic circulation and roadway capacity impacts associated with construction activities to a **less-than-significant** level because the project proponent would utilize construction methods and provide routes around Program element sites to ensure that the transportation network within the HUA was not significantly affected and remained effective.

IMPACT 3.10-2 Reduced Emergency Access from Temporary Short-Term Street Closures. *Construction associated with Program elements may require temporary lane or road closures, or otherwise affect traffic circulation. These impacts could delay or reduce emergency access within and around construction zones. Less than significant with mitigation.*

As discussed above, Program facilities could be located in a variety of urban and rural settings in the study area. The exact locations for these facilities, specific construction methods, and haul routes have not been identified. The construction of some Program elements could occur near public roads and could adversely affect nearby traffic patterns on a temporary short-term basis. Construction of some elements, particularly pipelines within existing road right of ways, could require temporary lane closures. This could delay or reduce emergency access within and around construction zones. This impact would be **potentially significant**.

Mitigation Measure 3.10-2: Minimize Impacts on Emergency Vehicle Access.

To minimize impacts on emergency vehicle access, the project proponent shall implement the following measures to the extent feasible:

- Provide a traffic control plan (prepared as part of Mitigation Measure 3.10-1) to the City of Hollister Police and Fire Departments, and the San Benito County Sheriff's Office and Fire Department prior to initiating construction; and

- Consider all recommended measures identified by the City and County emergency services departments and implement feasible recommendations.

Implementing Mitigation Measures 3.10-1 and 3.10-2 would reduce emergency access impacts to **less than significant** because these measures would provide notification to emergency service providers and adequate circulation around Program element construction sites for emergency vehicle access.

3.10.4 RESIDUAL SIGNIFICANT IMPACTS

With implementation of the mitigation measures described above, the proposed Program would not result in any residual significant impacts related to transportation and traffic.

3.11 AIR QUALITY AND GLOBAL CLIMATE CHANGE

3.11.1 ENVIRONMENTAL SETTING

The HUA lies within the eastern portion of the North Central Coast Air Basin (NCCAB), which is comprised of Santa Cruz, San Benito, and Monterey Counties. Air quality in the NCCAB is overseen and managed by the Monterey Bay Unified Air Pollution Control District (MBUAPCD).

Ambient concentrations of air pollutants (including odors and greenhouse gases [GHG]) are determined by the qualities and quantities of emissions released by sources and the atmosphere's ability to transport, dilute, and transform the emissions. Natural factors that affect transport, dilution, and transformation include terrain, wind, atmospheric stability, and sunlight. The combination of low wind speeds and restricted vertical mixing generally produces the highest concentrations of air pollutants. Therefore, existing air quality conditions in an area are determined by natural factors such as topography, meteorology, and climate, in addition to the sources and strengths of emissions, as discussed separately below.

TOPOGRAPHY, METEOROLOGY, AND CLIMATE

The NCCAB lies along the central coast of California and covers an area of approximately 5,159 square miles. The northwest sector of the NCCAB is dominated by the Santa Cruz Mountains. The Diablo Range marks the northeastern boundary, and together with the southern extent of the Santa Cruz Mountains forms the Santa Clara Valley which extends into the northeastern tip of the NCCAB. Farther south, the Santa Clara Valley evolves into the San Benito Valley which runs northwest-southeast and has the Gabilan Range as its western boundary. To the west of the Gabilan Range is the Salinas Valley, which extends from Salinas at its northwestern end to King City at its southeastern end. The western side of the Salinas Valley is formed by the Sierra de Salinas, which also forms the eastern side of the smaller Carmel Valley. The coastal Santa Lucia Range defines the western side of the Carmel Valley (MBUAPCD 2008).

Hollister, at the northern end of the San Benito Valley, experiences west winds nearly one-third of the time. The prevailing air flow during summer probably originates in the Monterey Bay area and enters the northern end of the San Benito Valley through the air gap through the Gabilan Range occupied by the Pajaro River. In addition, a northwesterly air flow frequently transports pollutants into the San Benito Valley from the Santa Clara Valley (MBUAPCD 2008). The local meteorology of the study area and vicinity is represented by measurements recorded at the Gilroy station. The normal annual precipitation, which occurs primarily from November through March, is approximately 14 inches (weather.com 2010). January temperatures range from an average minimum of 38 degrees Fahrenheit (°F) to an average maximum of 61 °F; August temperatures range from an average minimum of 53°F to an average maximum of 82°F (weather.com 2010). The predominant wind direction and speed is from the west at approximately 8 miles per hour (mph) (California Air Resources Board [ARB] 1994).

EXISTING AIR QUALITY—CRITERIA AIR POLLUTANTS

Concentrations of the following air pollutants are used as indicators of ambient air quality conditions: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less (PM_{10}), fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health, and because there is extensive documentation available on health-effects criteria for these pollutants, they are commonly referred to as "criteria air pollutants." Tables 3.11-1 and 3.11-2 summarize the California and National Ambient Air Quality Standards (CAAQS and NAAQS, respectively), and health effects of criteria pollutants, respectively.

Criteria air pollutant concentrations are measured at eight monitoring stations in the NCCAB, including one station in Hollister. The Hollister station monitors ambient ozone and PM_{10} only. A summary of air quality data measured in Hollister for the most recent 5 years is shown in Table 3.11-3.

Table 3.11-1
Summary of Ambient Air Quality Standards and Attainment Designations

Pollutant	Averaging Time	California		National Standards[a]		
		Standards[b],[c]	Attainment Status (NCCAB)[d]	Primary[c],[e]	Secondary[c],[f]	Attainment Status (NCCAB)[g]
Ozone	1-hour	0.09 ppm (180 μg/m^3)	N (Moderate)	–	–	–
	8-hour	0.070 ppm (137 μg/m^3)	N	0.075 ppm (147 μg/m^3)	Same as Primary Standard	A
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	U/A[h]	35 ppm (40 mg/m^3)	–	A
	8-hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)		
Nitrogen dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)	A	0.053 ppm (100 μg/m^3)	Same as Primary Standard	A
	1-hour	0.18 ppm (339 μg/m^3)	A	0.100 ppm	–	–
Respirable particulate matter (PM_{10})	Annual Arithmetic Mean	20 μg/m^3	N	–	Same as Primary Standard	A
	24-hour	50 μg/m^3		150 μg/m^3		
Fine particulate matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 μg/m^3	N	15 μg/m^3	Same as Primary Standard	A
	24-hour	No Separate State Standard		35 μg/m^3		

Notes: ppm = parts per million; μg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter

(a) National standards (other than ozone, particulate matter, and those standards based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than 1 day. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current federal policies.

(b) California standards for ozone, CO (except Lake Tahoe), NO_2, and particulate matter are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

(c) Concentrations are expressed first in units in which they were issued (i.e., ppm or μg/m^3). Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

(d) Unclassified (U): The data are incomplete and do not support a designation of attainment or nonattainment.
Attainment (A): The state standard for that pollutant was not violated at any site in the area during a 3-year period.
Nonattainment (N): There was at least one violation of a state standard for that pollutant in the area.

(e) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

(f) National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

(g) Nonattainment (N): Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.
Attainment (A): Any area that meets the national primary or secondary ambient air quality standard for the pollutant.
Unclassifiable (U): Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

()(h) San Benito and Santa Cruz Counties are unclassified, and Monterey County is in attainment for CO.

Source: ARB 2010a, 2010b; EPA 2010a

Table 3.11-2
Health Effects of Criteria Air Pollutants

Pollutant	Acute[a] Health Effects			Chronic[b] Health Effects		
	Concentration	Averaging Time	Symptoms	Concentration	Averaging Time	Symptoms
Ozone	0.10 ppm–0.40 ppm	1-2 hours	increased respiration and pulmonary resistance; cough, pain, shortness of breath	–	long/lifetime	permeability of respiratory epithelia, possibility of permanent lung impairment
	<= 0.12 ppm	hours	lung inflammation			
Carbon monoxide (CO)	70 ppm–400 ppm	< 3 hours	headache, dizziness, fatigue, nausea, vomiting	–	after acute exposure not resulting in death	permanent heart and brain damage
	> 800 ppm	2-3 hours	death			
Nitrogen dioxide (NO_2)	10-20 ppm	short	coughing, difficulty breathing, vomiting, headache, eye irritation	–	severe intoxication after acute exposure	chronic bronchitis, decreased lung function
	–	4–12 hours	chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat			
	> 150 ppm	hours	death			
Respirable particulate matter (PM_{10}), Fine particulate matter ($PM_{2.5}$)	dependent on particle size, composition, number	–	breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	dependent on particle size, composition, number	long/lifetime	alterations to the immune system, carcinogenesis

Notes: ppm = parts per million
[a] "Acute" refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations.
[b] "Chronic" refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.
Source: USOTA 1989, Godish 2004, NHDES 2007, EPA 2010a, 2010b

Table 3.11-3
Hollister Monitoring Station—Ambient Air Quality

Pollutant	Averaging Time	Federal Primary Standards	California Air Quality Standards	Maximum Concentrations[a]					Number of Days Exceeding Federal Standard[b]					Number of Days Exceeding State Standard[b]				
				2005	2006	2007	2008	2009	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
Ozone	1-hour	Revoked[c]	0.09 ppm	0.87	0.099	0.087	0.09	0.093	-	Revoked				0	1	0	0	0
	8-hour	0.075 ppm	0.07 ppm	0.07	0.087	0.074	0.072	0.073	0	1	0	0	0	1	5	2	2	2
PM_{10}	24-hours	150 µg/m^3	50 µg/m^3	37	46	40	40	38	0	0	0	0	0	0	0	0	0	0
	Annual	Revoked[d]	20 µg/m^3	15.8	16.0	17.2	19.7	*	-	-	Revoked - -			0	0	0	0	*
$PM_{2.5}$	24-hours	35 µg/m^3	none	*	*	20.9	22.7	17.3	0	0	0	0	0	-	-	-	-	-
	Annual	15 µg/m^3	12 µg/m^3	*	*	6.3	7.0	5.5	*	*	0	0	0	*	*	0	0	0

Notes: PM_{10} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter

"-" = data not available or applicable
"*" = insufficient data to determine the value
[a] Concentration units for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide are in parts per million (ppm). Concentration units for PM_{10} and $PM_{2.5}$ are in micrograms per cubic meter (µg/m^3). State max values reported.
[b] A value of 1 or greater indicates that the standard has been exceeded.
[c] The federal 1-hour ozone standard was revoked in June 2005.
[d] The federal annual PM_{10} standard was revoked in December 2006.
Source: ARB 2010e, 2010f

Both the California Air Resources Board (ARB) and EPA use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards.

The NCCAB is currently classified as a state nonattainment area for ozone and PM_{10}. The NCCAB is in federal attainment for ozone and PM_{10}, and meets both federal and state attainment (or unclassified) criteria for all other pollutants: $PM_{2.5}$, CO, NO_2, SO_2, and lead (ARB 2008a). Because the entire state is in attainment for SO_2 and most of the state is in attainment for lead, they are not discussed further in this PEIR.

Source types, health effects, and future trends associated with each air pollutant are described below, along with the most current attainment area designations and monitoring data for NCCAPCD, the County, and the HUA.

Ozone

Ozone is a photochemical oxidant, a highly reactive gas, and even at low concentrations is irritating and toxic. Ozone is the primary component of smog and is not emitted directly into the air, but formed through complex chemical reactions between precursor emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_X) in the presence of sunlight. ROG are volatile organic compounds that are emitted from natural sources (such as plants), incomplete fossil fuel combustion, and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels. ROG and NO_X are not themselves Criteria Air Pollutants (CAP) (with the exception of NO_2), but are controlled through federal, state, regional, and local regulations, programs, and rules to limit ozone formation.

The adverse health effects associated with exposure to ozone pertain primarily to the respiratory system. Scientific evidence indicates that ambient levels of ozone affect not only sensitive receptors, such as asthmatics, children, and the elderly, but also healthy adults. Exposure to ambient levels of ozone ranging from 0.10 to 0.40 part per million (ppm) for 1 or 2 hours has been found to significantly alter lung functions by increasing respiratory rates and pulmonary resistance, decreasing tidal volumes, and impairing respiratory mechanics. Ambient levels of ozone above 0.12 ppm are linked to symptomatic responses that include such symptoms as throat dryness, chest tightness, headache, and nausea. In addition to the above adverse health effects, evidence also exists relating ozone exposure to an increase in the permeability of respiratory epithelia, which can inhibit the immune system's ability to defend against infection (Godish 2004).

The NCCAB is in attainment for federal standards but is in nonattainment for state ozone standards. In the County, the peak 8-hour ozone indicator value has decreased by about 11% in the past decade (1997–2007). The maximum 8-hour ozone concentrations have been fairly stable for the past decade. The number of days above the state 8-hour ozone standard has not improved significantly; however, the numbers of days above the national 8-hour standard and the state 1-hr standard have improved in recent years (ARB 2009).

Carbon Monoxide

CO is a colorless, odorless, and poisonous gas produced by incomplete combustion of carbon in fuels, primarily from mobile (transportation) sources, which comprised 80% of the statewide CO emissions in 2008. The remaining 20% of CO is emitted primarily from wood-burning stoves, managed burning, and incineration (ARB 2009). The highest CO concentrations are generally associated with cold, stagnant weather conditions that occur during winter. In contrast to ozone, a regional pollutant, CO tends to cause localized problems. CO monitoring data are unavailable for the County (ARB 2009), but the NCCAB is in attainment for federal standards and attainment/unclassified for state standards.

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile, and stationary reciprocating internal-combustion engines. Combustion devices emit primarily nitric oxide (NO), which oxidizes in the atmosphere to form NO_2 (EPA 2010b). The combined emissions of NO and NO_2 are referred to as NO_X, which are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local NO_X emission sources. In California, NO_X is primarily emitted by mobile sources, which account for 86% of the total state NO_X emissions (ARB 2009). NO_2 monitoring data are unavailable for the County (ARB 2009). NO_X emissions are expected to drop in future years in the County due in large part to improvements in mobile source control technologies implemented at the national and state levels (ARB 2009). The NCCAB is in both federal- and state-attainment for NO_2.

Particulate Matter

The major fraction of PM_{10} by mass consists of coarse particulate matter emitted directly into the air, such as mechanically-generated dust, soot, and smoke from mobile sources, stationary sources, and fires. $PM_{2.5}$ is a subgroup of PM_{10}, composed of finer particles, generally formed by secondary processes, such as condensation of combustion gases or transformation of ambient SO_2, NO_X, and ROG (EPA 2010a).

The adverse health effects associated with PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with adsorption of metals, polycyclic aromatic hydrocarbons, and other toxic substances onto fine PM ("piggybacking"), or with fine dust particles of silica or asbestos. Generally, adverse health effects associated with PM_{10} may result from both short- and long-term exposure to elevated concentrations and may include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, alterations to the immune system, carcinogenesis, and premature death (EPA 2010a). $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health.

The NCCAB is currently designated as nonattainment for the state PM_{10} standards, attainment/unclassified for the national PM_{10} standard, and attainment for the state and national $PM_{2.5}$ standards.

Direct emissions of PM_{10} have been increasing in the County in the past decade, primarily from areawide sources: fugitive dust from unpaved roads and managed burning (ARB 2010c). MBUAPCD has a number of rules in place to control PM_{10} emissions from burning (ARB 2010d); however, as vehicle miles traveled (VMT) increases, both paved and unpaved road dust emissions will increase. Direct emissions of $PM_{2.5}$ have been fairly stable over the same time period. Statewide programs aimed at reducing ozone and diesel PM will also help to reduce public exposure to $PM_{2.5}$.

National and state maximum 24-hour concentrations of PM_{10} have decreased somewhat in the past decade and are leveling off in the County. National and state annual average concentrations of PM_{10} have been fairly stable over the same period of time, and there have been no violations of the national or state 24-hr standards since 2002 (ARB 2009)

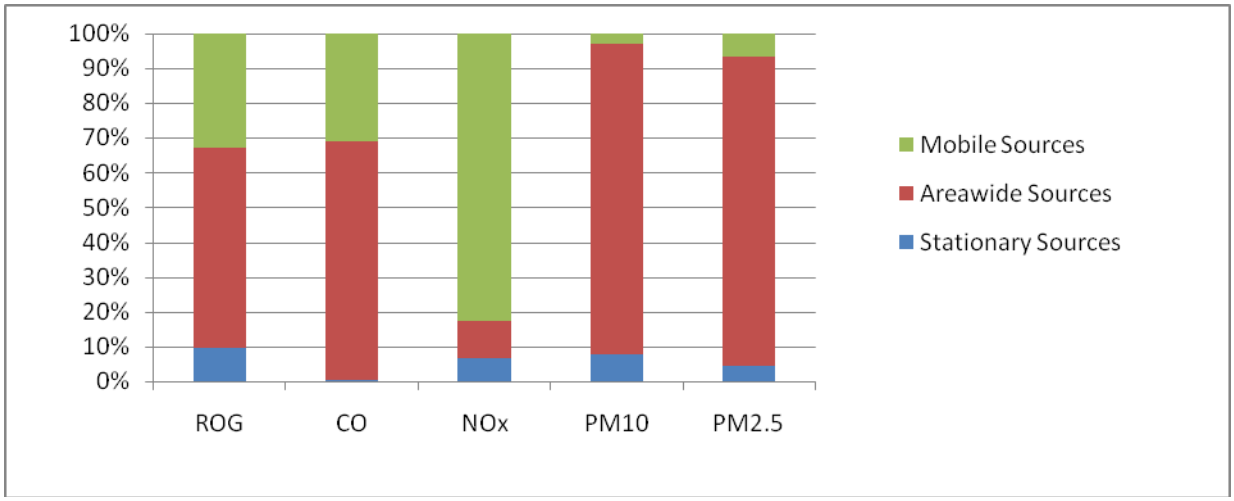
$PM_{2.5}$ trends are not discernable because monitoring data are only available for 2007 in the County (ARB 2009).

Emission Sources

Sources of CAPs in the County and the HUA include stationary, area, and mobile sources. According to the 2008 emissions inventory for the County, the majority of NO_X emissions are attributable to mobile sources; stationary and areawide sources are the greatest contributors of organic gases (ozone precursors and GHGs, from landfills,

farming, and managed burning), while areawide and mobile sources are the greatest contributors of CO (managed burning and vehicular traffic), and PM (road dust and managed burning) (ARB 2010c).

Figure 3.11-1 summarizes emissions of criteria air pollutants and precursors within San Benito County for various source categories.



Notes: ROG = reactive organic gases; CO = carbon monoxide; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: ARB 2010c

Summary of 2008 Estimated Emissions Inventory for Criteria Air Pollutants and Precursors (San Benito County, Tons/Day) **Figure 3.11-1**

EXISTING AIR QUALITY—TOXIC AIR CONTAMINANTS

Toxic air contaminants (TAC) are air pollutants that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at low concentrations. According to The California Almanac of Emissions and Air Quality (ARB 2009), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being PM from diesel-fueled engines (diesel PM, a subset of PM_{10} emissions).

Of the TACs for which data are available in California, diesel PM, benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene pose the greatest existing ambient risks (ARB 2009). Diesel PM poses the greatest health risk among these 10 TACs. Health risks associated with diesel PM are expected to drop by 2020 due to implementation of ARB's heavy duty vehicle regulations and the Diesel Risk Reduction Plan (ARB 2009).

Diesel PM emissions are estimated to be 145 tons/year, or approximately 3% of the total PM_{10} emissions for San Benito County (ARB 2009), which is a relatively high number given the estimated population of about 55,000 in 2009 (U.S. Census Bureau 2009a). By comparison, Diesel PM emissions are estimated to be 5,163 tons/year for Los Angeles County, which had a population of 9.8 million in 2009 (U.S. Census Bureau 2009b). Because Diesel PM is emitted primarily from diesel trucks, the reason for the higher emissions is presumably the heavy truck traffic and farm equipment use in the HUA relative to other areas of the state.

A few smaller sources of TACs exist in the HUA, including an asphalt felt (roofing felts and sheathing papers) and coating manufacturer, and a prefabricated metal buildings and components manufacturer. The asphalt felt and coating manufacturer had reported hazard indexes (HI) less than or equal to one, while the prefabricated metal

manufacturer (near the intersection of Fallon Road and San Felipe Road) had a reported acute HI = 1, above the MBUAPCD prioritization threshold that triggers a risk assessment (ARB 2010g).

Sensitive Receptors

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. These people include children, the elderly, and persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Structures that house these persons or places where they gather are defined as sensitive receptors.

The MBUAPCD defines sensitive receptors as residential uses, preschools, grades K–12 schools, daycare centers, health care facilities (including hospitals and nursing homes), and prisons (MBUAPCD 2008). There are numerous types of sensitive receptors throughout the HUA.

EXISTING AIR QUALITY—ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, reactions to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

The land uses in the HUA that could be significant sources of odors are WWTPs and landfills (ARB 2010g, 2010h). The John Smith Landfill is the only permitted landfill in the HUA and is about 2 miles east of Fairview Road, downwind of the population given the prevalent westerly wind direction. Five WWTPs are located in the HUA: the City of Hollister WRF, IWTP, Ridgemark Area WWTP (two plants), and Cielo Vista Estates WWTP. The treatment plants could potentially be major sources of odors depending on the types of processes (i.e., settling ponds/lagoons, percolation beds, and leachfields) and control measures (biofilters) used.

EXISTING AIR QUALITY—GREENHOUSE GASES

The Greenhouse Effect

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. The radiation absorbed by the earth is reradiated, not as high-frequency solar radiation, but lower frequency infrared radiation. Most solar radiation passes through GHGs; however, infrared radiation is selectively absorbed by GHGs. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth. Without the greenhouse effect, temperature fluctuations would be extreme.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and high global warming potential (high-GWP) GHGs. Emissions of these GHGs from human activities have caused atmospheric levels to exceed natural ambient concentrations and are responsible for intensifying the greenhouse effect leading to a trend of unnatural warming of the earth's atmosphere and oceans, with corresponding effects on global circulation patterns and climate (Intergovernmental Panel on Climate Change [IPCC] 2007:665). CO_2 emissions associated with fossil fuel combustion are the primary contributors to human-induced climate change (EPA 2010c). Following CO_2, CH_4 and N_2O emissions associated with human activities are the next largest contributors to climate change (IPCC 2007:135; EPA 2010d:ES-4 to ES-10).

Greenhouse Gases

Climate change is a global problem because GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for a long enough time to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, it is understood that more CO_2 is currently emitted into the atmosphere than is sequestered. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through photosynthesis and dissolution, respectively. These are two of the most common processes of CO_2 sequestration. Of the total annual human-caused CO_2 emissions, approximately 54% is sequestered through ocean uptake, northern hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46% of human-caused CO_2 emissions remain stored in the atmosphere (Seinfeld and Pandis 1998:1091).

Similarly, impacts of GHGs are borne globally, as opposed to localized air quality effects of criteria air pollutants and TACs. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known but is enormous, and no single project would be expected to measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro-climate.

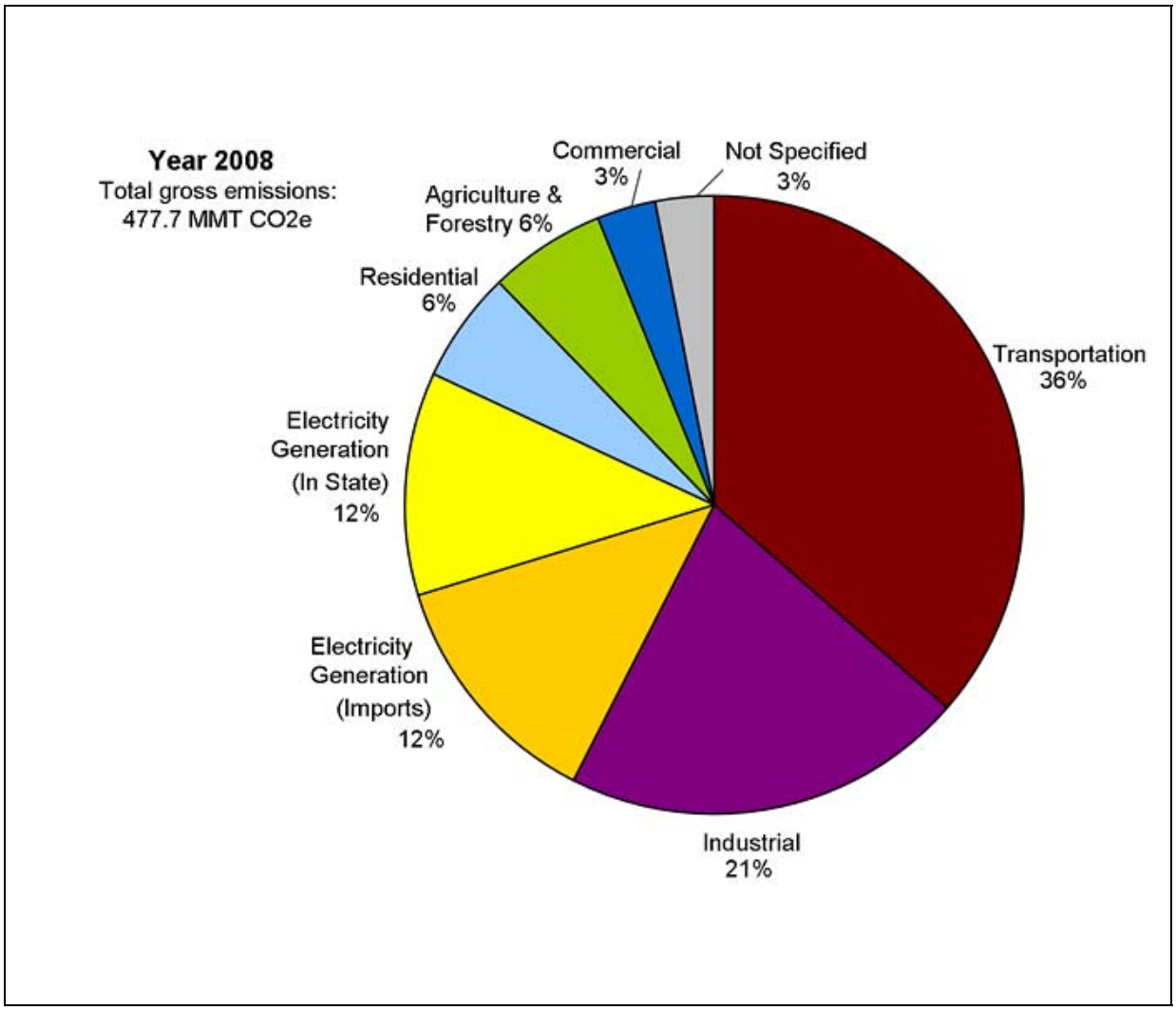
Effects of Climate Change

Climate change could affect environmental conditions in California through a variety of mechanisms. One effect of climate change is sea level rise. Sea levels along the California coast rose approximately 7 inches during the last century (CEC 2006a:12), and are predicted to rise an additional 7 to 22 inches by 2100, depending on the future levels of GHG emissions (IPCC 2007:11). However, the governor-appointed Delta Vision Blue Ribbon Task Force has recommended that the state plan for a scenario of 16 inches of sea level rise by 2050 and 55 inches by 2100 (California Natural Resources Agency 2008). Effects of sea level rise could include increased coastal flooding, saltwater intrusion (especially a concern in the low-lying Sacramento–San Joaquin Delta, where pumps delivering potable water could be threatened), and disruption of wetlands (CEC 2006a:12 to 13). Some low-lying populated areas throughout the Central Valley and the Delta inundated by sea level rise could experience population displacement and economic disruption.

As the existing climate throughout California changes over time, the ranges of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the state if suitable habitat conditions are no longer available. Additional concerns associated with climate change are a reduction in the snowpack, leading to less overall water storage in the mountains (the largest “reservoir” in the state), and increased risk of wildfire caused by changes in rainfall patterns and plant communities (CEC 2006a:6–10).

Sources of Greenhouse Gas Emissions

As the second largest emitter of GHG emissions in the United States and twelfth to sixteenth largest in the world, California contributes a significant quantity of GHGs to the atmosphere (CEC 2006b). Emissions of CO_2 are byproducts of fossil-fuel combustion and are attributable in large part to human activities associated with the transportation, industry/manufacturing, electricity and natural gas consumption, and agriculture (ARB 2010h). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2010h) (Figure 3.11-2).



Source: ARB 2010h

2008 California GHG Emissions by Sector (2000–2008 Emissions Inventory) **Figure 3.11-2**

GHGs with lower emissions rates than CO_2 may still contribute significantly to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2. The concept of CO_2-equivalency (CO_2e) is used to account for the fact that different GHGs have different potentials to absorb infrared radiation. This potential, known as the GWP of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

The MBUAPCD has developed 2010 GHG inventories for mobile sources for the NCCAB as well as for Monterey and Santa Cruz Counties. Although all sources are not accounted for in the NCCAB inventory, annual mobile source emissions in 2010 were estimated to be 4,157 MT CO_2e, a very small relative contribution to the state's mobile GHG emissions, equivalent to 0.0024% of California's mobile source emissions in 2008 (MBUAPCD 2010).

3.11.2 REGULATORY CONTEXT

Air quality in the HUA is regulated by EPA, ARB, and MBUAPCD. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent.

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Criteria Air Pollutants

At the federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA). The CAA required EPA to establish NAAQS. EPA established primary and secondary NAAQS for ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead, (Table 3.11-1). The primary standards protect the public health, while the secondary standards protect the public welfare. The CAA also required each state to prepare an air quality control plan, referred to as a SIP. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and to determine whether implementing the SIPs will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area.

Toxic Air Contaminants

Air quality regulations also focus on TACs, or in federal parlance, hazardous air pollutants (HAP). Examples of TACs are discussed in detail above in Section 5.3-1, "Existing Conditions," under "Existing Air Quality—Toxic Air Contaminants." For those TACs that may cause cancer, there is no concentration that has a safe level of exposure. This contrasts with CAPs, for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 3.11-2). Instead, EPA and ARB regulate HAPs and TACs through statutes and regulations that generally require the use of the maximum or best available control technology for toxics (MACT and BACT) to limit emissions. These statutes and regulations, in conjunction with additional rules set forth by the districts, establish the regulatory framework for TACs.

Greenhouse Gases

EPA is the federal agency responsible for implementing the CAA. The Supreme Court of the United States ruled on April 2, 2007 that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. However, there are no federal regulations or policies regarding GHG emissions applicable to the proposed Program. See AB 1493 for further information on the California Clean Air Act (CCAA) Waiver.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Criteria Air Pollutants

ARB is responsible for coordination and oversight of state and local air pollution control programs in California and for implementation of the CCAA. The CCAA required ARB to establish CAAQS (Table 3.11-1). ARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned CAPs. In most cases, CAAQS are more stringent than NAAQS. Differences in the standards are generally explained through interpretation of the health-effects studies considered during the standard-setting process. In addition, CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires all local air districts in the state to endeavor to achieve and maintain CAAQS by the earliest practical date. The act specifies that local air districts shall focus particular attention on reducing the emissions from transportation and areawide emission sources, and provides districts with the authority to regulate indirect sources.

Among ARB's other responsibilities are overseeing compliance by local air districts with California and federal laws; approving local air quality plans; submitting SIPs to EPA; monitoring air quality; determining and updating

area designations and maps; and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (AB 1807 [Chapter 1047, Statutes of 1983]) and the Air Toxics Hot Spots Information and Assessment Act (Hot Spots Act) (AB 2588 [Chapter 1252, Statutes of 1987]). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. To date, ARB has identified more than 21 TACs including diesel PM and adopted EPA's list of HAPs as TACs.

Once a TAC is identified, ARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions.

The Air Toxics Hot Spots Information and Assessment Act requires existing facilities emitting toxic substances above a specified level to prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

ARB has adopted diesel-exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). New milestones include the low-sulfur diesel fuel requirement and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide.

Greenhouse Gases

Assembly Bill 1493

In 2002, AB 1493 required that ARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state." To meet the requirements of AB 1493, ARB approved amendments to the CCR in 2004 adding GHG emissions standards to California's existing standards for motor vehicle emissions.

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, Executive Order S-3-05 established a series of target dates by which statewide emission of GHGs would be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80% below 1990 levels.

Assembly Bill 32

In 2006, California passed the California Global Warming Solutions Act of 2006 (California Health and Safety Code Division 25.5, Sections 38500 et seq. [AB 32]), which requires ARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25% reduction in emissions).

AB 32 establishes a timetable for ARB to adopt emission limits, rules, and regulations designed to achieve the intent of the Act. To meet these goals, California must reduce its GHGs by approximately 30% below projected 2020 business-as-usual emissions levels (ARB 2008b). Approximately one-third of the emission reductions would be in the transportation sector. Other reductions are expected from energy efficiency, industrial sources, agriculture, forestry, recycling and waste, water, and emissions reductions from cap-and-trade programs. State and

local government actions and regional GHG targets are also expected to yield GHG reductions. Measures that could become effective during implementation of the proposed Program pertain to building energy efficiency and local government operations (ARB 2008b:17).

Senate Bill 97

SB 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the California Office of Planning and Research (OPR) to prepare, develop, and transmit to the Resources Agency (now the California Natural Resources Agency) guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA. Effective March 18, 2010, OPR's CEQA Guidelines include guidelines for analysis and mitigation for GHG emissions that have been incorporated into this analysis accordingly.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Criteria Air Pollutants

Monterey Bay Unified Air Pollution Control District

The MBUAPCD is responsible for attaining and maintaining healthful air quality conditions in the NCCAB. This goal is achieved through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the MBUAPCD includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. Air quality plans applicable to the proposed Program are discussed below. The MBUAPCD also inspects stationary sources of air pollution and responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the CAA, and the CCAA. The MBUAPCD issues permits to various types of stationary sources, which must demonstrate implementation of BACT. Projects located within the MBUAPCD's jurisdiction are required to evaluate their air quality impacts in accordance with the MBUAPCD's CEQA Air Quality Guidelines (CEQA Guidelines), which is discussed in further detail below.

Monterey Bay Unified Air Pollution Control District CEQA Air Quality Guidelines

The MBUAPCD's CEQA Guidelines is an advisory document developed to provide public agencies, consultants, project proponents, and the general public with uniform procedures for addressing air quality impacts in environmental documents. The CEQA Guidelines describe the existing air quality conditions and pollutants within the MBUAPCD's jurisdiction, establish screening thresholds and thresholds of significance for construction and operational activities, and provide guidance for the evaluation of cumulative air quality impacts. In addition, for TACs, the CEQA Guidelines include a separate chapter that describes how projects should assess TAC emissions and establishes thresholds of significance for construction and operational TACs. This air quality analysis has been performed consistent with the guidance from the most recent CEQA Guidelines update (MBUAPCD 2008).

Air Quality Management Plan

The MBUAPCD is responsible for preparing and triennially updating the air quality management plan (AQMP), which addresses federal and state CAA requirements. The AQMP details goals, policies, and programs for improving air quality in the NCCAB. The most recent update to the original 1991 AQMP is the 2008 AQMP for the Monterey Bay Region (MBUAPCD 2008). The 2008 AQMP is a transitional plan that shifts the focus from the previous 1-hour ozone standard to the current 8-hour standard. In addition, the 2008 AQMP evaluates the co-pollutant benefits of reducing ozone precursors with respect to greenhouse gas emissions. The 2008 AQMP was adopted by the MBUAPCD Board in August 2008. It should be noted that the 2008 AQMP only addresses the state ozone standard. The 2007 Federal Maintenance Plan for Maintaining the National Ozone Standard in the

Monterey Bay Region (2007 Maintenance Plan) addresses the federal CAA planning requirements for the federal 8-hour ozone standard. The 2007 Maintenance Plan describes the control measures, air quality modeling, and on-going programs required to maintain attainment of the federal ozone standard.

The 2005 Report on Attainment of the California Particulate Matter standard in the Monterey Bay Region (2005 PM Plan) fulfills the requirements of SB 656. SB 656 was developed to reduce the public's exposure to PM_{10} and $PM_{2.5}$ emissions throughout California. The bill required ARB and California air districts to develop and adopt a list of the most readily available, feasible, and cost effective PM control measures to attain the state and federal PM_{10} and $PM_{2.5}$ standards. The main PM sources addressed in the plan include unpaved road dust, agricultural tilling/land planning, and mineral processing. The 2005 PM Plan was adopted by the MBUAPCD Board in December 2005.

Monterey Bay Unified Air Pollution Control District Rules and Regulations

All Program elements or projects would be subject to MBUAPCD rules and regulations in effect at the time of construction. Specific rules applicable to the construction and operation of the proposed Program may include, but are not limited to:

- **Rule 216**—Permit Requirements for Wastewater and Sewage Treatment Facilities.
- **Rule 400**—Visible Emissions.
- **Rule 402**—Nuisance.
- **Rule 403**—Particulate Matter.
- **Rule 426**—Architectural Coatings.
- **Rule 1008**—Air Toxic Control Measures.
- **Rule 1010**—Air Toxic Control Measure for Stationary Compression Ignition Engines.

Toxic Air Contaminants

At the local level, air pollution control or management districts may adopt and enforce ARB control measures. MBUAPCD limits emissions and public exposure to TACs through a number of programs and prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

MBUAPCD regulates TACs from new or modified sources under Rule 1000 and a Board-approved protocol. They apply to any source which requires a permit to construct or operate pursuant to District Regulation II (Permits) and has the potential to emit carcinogenic or noncarcinogenic TACs. Sources of carcinogenic TACs must install best control technology and reduce cancer risk to less than one incident per 100,000 population. Sources of noncarcinogenic TACS must apply reasonable control technology (MBUAPCD 2008:9-2–9-3).

Odors

MBUAPCD has identified some common types of facilities that have been known to produce odors, including agriculture (farming and livestock) and wastewater treatment plants (MBUAPCD 2008:3-5, 4-2). MBUAPCD does not have rules or standards related to odor emissions outside of their regular permitting practices. Any actions related to odors are based on citizen complaints to local governments and MBUAPCD. For projects locating near a source of odors, and for odor sources locating near existing sensitive receptors, the MBUAPCD recommends that a protocol for assessing odor impacts should be determined with the District (MBUAPCD 2008:3-5, 4-2).

3.11.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

Air quality impacts from the proposed Program can be divided into two types, short-term and long-term. Short-term impacts are associated with construction activities, and long-term impacts are associated with the continued operation of the completed Program elements. In general, the analysis presented in this section (e.g., CAPs, ozone precursors, TACs) is qualitative. Project-specific data (e.g., construction equipment types and numbers, and maximum daily acreage of land disturbed) were not available for this programmatic level of evaluation. Completion of the proposed Program is dependent on a number of uncertain factors, including future land use decisions within the HUA, and the future financing of various probable future development projects in the HUA.

In addition to short- and long-term impacts, this document also presents an analysis of cumulative impacts, emissions from the proposed Program, and emissions from reasonably foreseeable residential, commercial, and industrial projects (see Chapter 4). Although the effects of GHG emissions are inherently cumulative, this impact is treated both in this section and in Chapter 4.

THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State CEQA Guidelines, as amended, the proposed Program would have a significant impact on air quality, greenhouse gases, or odors if it would:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

As stated in Appendix G of the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The MBUAPCD has established significance thresholds, as shown in Table 3.11-4.

Table 3.11-4
MBUAPCD Air Quality Significance Thresholds

Pollutant	Construction	Operation
	Mass Daily Thresholds	
Oxides of nitrogen (NO_X)	–	137 lb/day[(a)]
Volitile organic compound (VOC)	–	137 lb/day[(a)]
Respirable particulate matter (PM_{10})	82 lb/day[(b)]	82 lb/day [(c)]
Fine particulate matter ($PM_{2.5}$)	–	–
Oxides of sulfur (SO_X)	–	150 lb/day
Carbon monoxide (CO)	–	550 lb/day [(d)]
Lead	–	–

Table 3.11-4 MBUAPCD Air Quality Significance Thresholds		
Construction Screening Thresholds for Potentially Significant Impacts		
PM_{10}	Construction site with minimal earthmoving	8.1 acres per day
PM_{10}	Construction site with earthmoving (grading, excavation)	2.2 acres per day
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and noncarcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Hazard Index ≥ 1.0 (project increment) (construction and operation)	
Odor[e]	Project creates an odor nuisance pursuant to MBUAPCD Rule 402	
Ambient Air Quality for Criteria Pollutants[c]		
PM_{10} 24-hour average	50 $\mu g/m^3$ (construction and operation)	
CO 1-hour average 8-hour average	MBUAPCD is in attainment; impact is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state 1-hour standard) 9.0 ppm (state 8-hour standard)	

Notes: lb/day = pounds per day; MBUAPCD = Monterey Bay Unified Air Pollution Control District; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; ≥ = greater than or equal to.

[a] Threshold applies to both indirect (e.g., motor vehicle) and direct (e.g., on-site) emissions during operation.

[b] In addition to the mass emissions threshold of significance, MBUAPCD-approved air quality dispersion modeling for construction-related PM_{10} concentrations could also be used refute or validate significance determination.

[c] Threshold only applies to on-site PM emissions. Projects which would indirectly generate PM_{10} from travel on unpaved roads could result in substantial off-site emissions and significantly impact local air quality. Dispersion modeling should be undertaken to determine if indirect emissions along one or more unpaved roads would cause the exceedance of the State PM_{10} AAQS at an existing or reasonably foreseeable receptor as averaged over 24 hours.

[d] Direct emissions. Additional LOS thresholds apply. Modeling should be undertaken to determine if the project would cause or substantially contribute (550 lb/day) to exceedance of CO ambient air quality standard (i.e., 9.0 ppm for California ambient air quality standards and 20.0 ppm for national ambient air quality standards).

[e] Protocol for determining odor impacts should be discussed with MBUAPCD.

Source: MBUAPCD 2008

The MBUAPCD has not yet set significant thresholds for GHGs, and it is unknown at this time whether such thresholds would exist in future years during proposed Program implementation.

IMPACT ANALYSIS

Several Program elements (Lessalt WTP Modifications, New Pipeline to Ridgemark, and the Ridgemark WWTP Upgrades) have already been subject to CEQA review, are being implemented, and are not included in the following discussion of impacts and mitigation measures. Additionally, the Phase 1 Recycled Water Facilities have been completed and will not be discussed further.

Inconsistency with the population forecasts used for the AQMP is considered a conflict with an established plan, but the proposed Program is not directly growth-inducing and would not modify any projected population forecasts. Because the proposed Program is based on and consistent with the projected growth contained in the 2005 City of Hollister General Plan, the proposed Program should be consistent with the projected growth

contained in the MBUAPCD AQMP. The proposed Program is based on accommodating growth contained in the City General Plan, and itself would not increase population or vehicle miles traveled (VMT) over the City General Plan projections. As a result, the proposed Program does not result in any inconsistencies with respect to population forecasts used for the AQMP.

Individual Program elements will require further air quality impact analysis at the project level under CEQA once final siting is determined. If potentially significant impacts arise, individual projects must provide assurance of conformance with the applicable rules of the MBUAPCD (Rule 1008 in particular) and specify any necessary mitigation measures.

IMPACT 3.11-1 Temporary and Short-Term Increases in Emissions of ROG, NO_X, PM_{10}, and GHG during Project Construction. *Project-related CAPs and GHG emissions would increase during project construction and would be significant.* ***Less than significant with mitigation*** *for dust control and CAPs/precursors.* ***Significant and unavoidable*** *for GHG emissions.*

Construction-related activities would result in emissions of CAPs and precursors, as well as GHGs from site preparation (e.g., excavation, grading, and clearing); exhaust from off-road equipment, material delivery trucks, and worker commute vehicles; vehicle travel on paved and unpaved roads; and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings, and trenching for water and wastewater transmission line installation).

GHGs such as CO_2 would be produced during the combustion of fossil fuels associated with the use of construction equipment (vehicular and nonvehicular). While individual Program elements would be required to comply with applicable MBUAPCD rules and employ construction approaches that minimize pollutant emissions (e.g., watering for dust control, requiring equipment specifications, and limiting truck traffic to nonpeak hours), the study area lies in a nonattainment air basin for state ozone and PM standards, and construction associated with the proposed Program, albeit relatively minor and spread out over more than 15 years, would contribute additional ozone precursor and PM emissions into the atmosphere. Construction would generate CAP emissions that are **significant.**

Mitigation Measure 3.11-1: Implement Feasible MBUAPCD-Recommended Control Measures to Minimize Short-Term Construction Emissions of PM_{10} (Fugitive Dust), ROG, and NO_X, and Incorporate Best Management Practices to Reduce GHG Emissions during Construction.

The project proponent shall ensure that for all construction activities associated with the proposed Program: 1) the measures presented in Table 3.11-5 shall be implemented, where feasible, to reduce the amount of fugitive dust that is reentrained into the atmosphere from unpaved areas, parking lots, and construction sites; and 2) the measures presented in Table 3.11-6 shall be implemented, where feasible, to reduce the amount of temporary construction emissions from heavy-duty equipment to minimize ozone precursors and PM_{10} (MBUAPCD 2008).

To address construction-related GHG emissions, the project proponent shall identify and incorporate best management practices to reduce GHG emissions during construction, where feasible, which may include, but is not limited to the use of alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment; use of local building materials; and recycling or reusing construction waste or demolition materials.

Table 3.11-5 Mitigation Measures for Construction Emissions of PM_{10} (Fugitive Dust)			
Mitigation Measure (3.11-1a[a-n])	Source Category	Effectiveness	Source
a. Water all active construction sites at least twice daily.	Fugitive emissions from active, unpaved construction areas	50%	EPA, "AP-42, Vol. I." Pg 11.2.4-1.
b. Prohibit all grading activities during periods of high wind (over 15 mph).	Grading emissions	Reduces potential for exceedance	SCAQMD, "SIP for PM_{10} in the Coachella Valley" 1990. Pgs. 5-15
c. Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least 4 consecutive days).	Wind erosion from inactive areas	Up to 80%	EPA, "AP-42, Vol. I." Pg. 11.2.4-1.
d. Apply nontoxic binders (e.g., latex acrylic copolymer) to exposed areas after cut-and-fill operations, and hydro seed area.	Wind erosion from inactive areas	Up to 80%	EPA, "AP-42, Vol. I." Pg. 11.2.4-1.
e. Haul trucks shall maintain at least 2 feet of freeboard.	Spills from haul trucks	90%	MBUAPCD
f. Cover all trucks hauling dirt, sand, or loose materials.	Spills from haul trucks	90%	MBUAPCD
g. Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.	Wind erosion from inactive areas	4% (15% for mature trees)	SCAQMD, "SIP for PM_{10} in the Coachella Valley" 1990. Pgs. 5-15
h. Plant vegetative ground cover in disturbed areas as soon as feasible after construction.	Wind erosion from inactive areas	5%-99% (based on planting plan)	SCAQMD, "SIP for PM_{10} in the Coachella Valley" 1990. Pgs. 5-15
i. Cover inactive storage piles.	Wind erosion from storage piles	Up to 90%	EPA "AP-42, Vol. I." Pg. 11.2.3-4)
j. Install wheel washers at the entrance to construction sites for all entering/exiting trucks.	On-road entrained PM_{10}	50%	SCAQMD, "SIP for PM_{10} in the Coachella Valley" 1990. Pgs. 4-11
k. Pave or gravel all roads at construction sites.	On-road entrained PM_{10}	50%	SCAQMD, "SIP for PM_{10} in the Coachella Valley" 1990. Pgs. 4-11
l. Sweep streets if visible soil material is tracked out from the construction site.	On-road entrained PM_{10}	34%	SCAQMD, "SIP for PM_{10} in the Coachella Valley" 1990. Pgs. 4-11
m. Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the MBUAPCD shall also be visible to ensure compliance with Rule 402 (Nuisance).	All emissions	Minimizes nuisance levels	MBUAPCD
n. Limit the area under construction at any one time.	Fugitive emissions from active, unpaved construction areas	71 pound/acre/day	MBUAPCD based on EPA "AP-42," Vol. I
Notes: EPA = U.S. Environmental Protection Agency; MBUAPCD = Monterey Bay Unified Air Pollution Control District; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; SCAQMD = Sacramento County Air Quality Management District; SIP = State Implementation Plan. Source: Data compiled by AECOM in 2010.			

Table 3.11-6 Mitigation Measures for Construction Emissions of NO_X and PM_{10} (Heavy-Duty Equipment)			
Mitigation Measure (3.11-1b[a-n])	Source Category	Effectiveness	Source
a. Limit use of equipment	See Tables 7-3 and 7-4 for hourly emission saving by type		
b. Replace diesel- powered equipment with gasoline-powered.	See EPA, "AP-42, Volume II." 1985.		
c. Use PuriNO_X emulsified diesel fuel in existing engines.	14% reduction	63% reduction	ARB interim verification of 1/31/01
d. Modify engine with ARB verified retrofit	Up to 25 % reduction	Up to 85 % reduction	See retrofits/repowers table below
e. Repower with current standard diesel technology.	Up to 91% reduction	Up to 69% reduction	See retrofits/repowers table below
f. Repower with compressed natural gas/liquefied natural gas technology.	Up to 73% reduction if new engine cert. is 0.5 g. NO_X, 23% if new engine cert. is 1.5 g. NO_X.	75-80% reduction	ARB, 2004 guidelines for motor vehicle fees, Table 5
(Retrofits and/or Repowers for Heavy-Duty Diesel Engines)			
Applicable Engine Model Years; Manufacturers, or Use	Mitigation Measure	NO_X Reductions	PM_{10} Reductions
1993-2002; specific 4-stroke diesel engines—contact manufacturer	g1. Retrofit with DPF from Lubrizol, Cleaire, Donaldson	0-25%	85%
1993-2003; specific 4-stroke diesel engines without exhaust gas recirculation—contact manufacturer	g2. Retrofit with an ARB Level 3 verified DPF from ECS-Lubrizol	0%	85%
1993-2002; Caterpillar with PSA bi-fuel system.	g3. Retrofit with an ARB Level3 verified DPF from Clean Air Power	0%	85%
1993-2002; specific 4-stroke diesel engines used as emergency generators—contact manufacturer	g4. Retrofit with an ARB Level3 verified DPF retrofit from Clean Air systems	0%	85%
1991-2002; many 4-stroke diesel engines over 150 boiler horsepower—contact manufacturer	g5. Retrofit with an ARB Level1 verified diesel oxidation catalyst muffler from Cleaire, Donaldson or Lubrizol	0-25%	25%
Any older baseline engines result in greater reductions.	g6. Repower with new current Tier 1 or 2 diesel engine	25-69%	25-86%
Notes: ARB = California Air Resources Board; DPF = diesel particulate filter; EPA = U.S. Environmental Protection Agency; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; Source: Data compiled by AECOM in 2010.			

Implementation of Mitigation Measure 3.11-1 would reduce the potential impacts with respect to ozone precursors and PM (including diesel PM) to levels that are considered to be **less than significant** after implementation of dust control and CAP/precursor mitigation measures. However, it cannot be demonstrated that Mitigation Measure 3.11-1 would reduce GHG emissions to a less-than-significant level. This impact is considered **significant and unavoidable.**

IMPACT 3.11-2 Long-Term Increases in Emissions of ROG, NO_X, and PM_{10} Associated with Project Operations. *The project could generate substantial and potentially significant long-term emissions if it includes diesel-engine or gas turbine generators for general or emergency power generation and pumping; central-heating boilers/chillers for larger buildings; equipment for demineralization; or other water and wastewater treatment processes. Less than significant with mitigation.*

Area- and Mobile-Source Emissions

The proposed Program would not generate new area sources with local combustion emissions and associated daily trips. The proposed Program is not anticipated to generate a substantial number of daily trips associated with the new facilities, and operations-related mobile-source emissions of CAPs would not increase. If natural gas is used for heating or cooling in any new "stationary source" facilities constructed as part of the proposed Program, such facilities would be subject to further CEQA review to evaluate potential impacts from ozone precursors. Long-term CAP emissions associated with area and mobile sources are considered **less than significant**.

Stationary-Source Emissions

The proposed Program contains numerous Program elements to improve water supply and reuse in the HUA, including stationary sources of pollutants that would require the project proponent to obtain permits to operate in compliance with MBUAPCD rules. These sources could include diesel-engine or gas turbine generators for general or emergency power generation and pumping; central-heating boilers/chillers for larger buildings; and, potentially, equipment for demineralization, and other water and wastewater treatment processes. The operation of new wells or improvements to treatment facilities could rely either on generators (fossil fuel combustion) or electricity for power. If electricity is the main source of power with back-up generators used as needed, it is unknown what percentage of time the back-up generators would operate in a given year. The types of fuels that may be utilized for generators are currently unknown and, consequently, types and quantities of CAP emissions resulting from pumping and treatment of water and wastewater are unknown.

There is insufficient project information available to reliably estimate emissions from future projects associated with this Program. Existing regulations and permit requirements are designed to ensure that stationary sources are equipped with the required emissions controls. Without the application of feasible mitigation, it is possible that long-term emissions associated with stationary sources would be **potentially significant**.

Mitigation Measure 3.11-2: Implement Reasonably Available Control Technology.

Future projects that involve new or expanded stationary sources of CAPs shall incorporate Reasonably Available Control Technology or Best Available Control Technology to reduce such emissions, as feasible. The application of such technologies will depend on the type of stationary source proposed, but will include those appropriate measures addressed in the California Air Pollution Control Officer's Association BACT Clearinghouse, the South Coast Air Quality Management District's BACT Clearinghouse, or EPA's AP-42 Compilation of Air Pollutant Emission Factors (Volume I).

Mitigation Measure 3.11-2 would reduce long-term emissions associated with project operations to a **less-than-significant** level.

IMPACT 3.11-3 Long-Term Increases in Greenhouse Gas Emissions Associated with Project Operations. *Project operations would require the potentially significant combustion of fossil fuels for pumping, demineralization, and other treatment processes, either directly (if diesel or natural gas are used) or indirectly (if electricity is used). Accommodation of growth in the HUA would increase GHG emissions of CH_4 and N_2O associated with increased wastewater treatment. Potentially significant and unavoidable.*

Project operations would require the combustion of fossil fuels for pumping, demineralization, and other treatment processes, either directly (if diesel or natural gas are used) or indirectly (if electricity is used). If chemical precipitation is relied on more heavily in the future due to cost considerations, the lifecycle GHG emissions associated with chemical production and transport, as well as disposal of chemical sludge, should be considered when comparing treatment alternatives (i.e., reverse osmosis vs. precipitation for demineralization).

Accommodation of growth in the HUA would increase GHG emissions of CH_4 and N_2O associated with increased wastewater treatment; additional wastes and associated GHG emissions would be produced during the course of wastewater treatment. Future emissions of GHG emissions cannot be estimated at this time because the influent and effluent qualities of the wastewater streams are unknown. For these reasons, this impact is considered to be **potentially significant**.

> Mitigation Measure 3.11-3: Use Equipment that Produces Less Greenhouse Gas Emissions.
>
> When feasible, the project proponent shall use electricity rather than stationary combustion for the purposes of pumping, treatment, and discharge/disposal of water and wastewater.

Project operations would require the combustion of fossil fuels for pumping, demineralization, and other treatment processes, either directly (if diesel or natural gas are used) or indirectly (if electricity is used). Increased wastewater treatment could increase GHG emissions of CH_4 and N_2O. Implementation of Mitigation Measure 3.11-3 would reduce GHG emissions, but it cannot be demonstrated at this time that impacts would be reduced to a less-than-significant level. This impact is considered **potentially significant and unavoidable**.

IMPACT 3.11-4 Exposure of Sensitive Receptors to Toxic Air Contaminants. *Construction-related activities would result in short-term emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment. The proposed Program also includes facilities which may potentially include stationary sources of TACs, such as pumps or generators (including backup generators), using diesel fuel.* ***Less than significant.***

With the proposed Program, new or modified sources of TACs could be placed near existing sensitive receptors, and new sensitive receptors could be developed near existing sources of TACs. Emissions of TACs during project construction (e.g., emissions from on-site heavy-duty diesel equipment) and from project operations (e.g., emissions from both on- and off-site areas and stationary and mobile sources) are discussed and the resulting levels of TAC exposure at sensitive receptors are analyzed separately below.

Construction-Related Emissions

Construction-related activities would result in short-term emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment for site preparation (e.g., excavation, grading, and clearing), paving, application of architectural coatings, and other miscellaneous activities. The proposed Program would not result in ground disturbance/excavation in areas containing naturally occurring asbestos (NOA); there would be no impacts related to asbestos.

Diesel PM was identified as a TAC by ARB in 1998. The potential cancer risk from the inhalation of diesel PM, as discussed below, outweighs the potential for all other health impacts (ARB 2003). Diesel PM emissions from the combustion of diesel fuel, used by vehicles and equipment associated with construction of various Program elements, would occur. PM emissions would be generally short-lived spatially and temporally.

It is important to note that emissions from construction equipment would be reduced over the period of buildout of the proposed Program. In January 2001, EPA promulgated a final rule to reduce emissions standards for heavy-duty diesel engines in 2007 and subsequent model years. These emissions standards represent a 90% reduction in NO_X emissions, 72% reduction of nonmethane hydrocarbon emissions, and 90% reduction of PM emissions in comparison to the emissions standards for the 2004 model year. In December 2004, ARB adopted a fourth phase

of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by EPA on May 11, 2004. As such, engine manufacturers are now required to meet after-treatment-based exhaust standards for NO_X and PM starting in 2011 that are more than 90% lower than current levels, putting emissions from off-road engines virtually on par with those from on-road heavy-duty diesel engines.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual (MEI). Thus, the risks estimated for a MEI are higher if a fixed exposure occurs over a longer period of time. According to the California Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period and duration of activities associated with a project (Salinas, pers. comm., 2004). Because the use of off-road heavy-duty diesel equipment would be temporary, diesel PM is expected to disperse quickly (Zhu et al. 2002), and future reductions in exhaust emissions would occur and construction-related activities would not be expected to expose sensitive receptors to substantial emissions of TACs. As a result, this impact would be **less than significant**. Therefore, no mitigation is required.

Operational Emissions

The proposed Program includes construction of numerous wells and pumping stations, as well as improvements to water and wastewater treatment and distribution facilities, which may potentially include stationary sources of TACs, such as pumps or generators (including backup generators) using diesel fuel. These types of stationary sources, in addition to any other stationary sources that may emit TACs, would be subject to MBUAPCD's rules and regulations. Thus, as discussed above, MBUAPCD would analyze such sources (e.g., health risk assessment) based on their potential to emit TACs. If it is determined that the sources would emit TACs in excess of MBUAPCD's applicable significance threshold, MACT or BACT would be implemented to reduce emissions. If the implementation of MACT or BACT would not reduce the risk below the applicable threshold, MBUAPCD would deny the required permit. As a result, given compliance with applicable rules and regulations, operation of stationary sources would not result in the exposure of sensitive receptors to substantial concentrations of TACs and this impact would be **less than significant**.

The proposed Program also includes brine concentration and disposal from water demineralization. Trucking concentrated brine to the ocean or other facility is one possible method of disposal. This would be an extremely minor source of TAC emissions given the higher-than-average proportion of heavy-duty truck traffic in San Benito County, discussed previously. Therefore, buildout of the proposed Program is expected to result in **less-than-significant** impacts related to on-road mobile source TAC emissions.

Mitigation Measure: No mitigation measures are required.

IMPACT 3.11-5 CO Concentrations. *The proposed Program is not expected to generate new traffic or worsen existing conditions, as new facilities are not expected to be large enough to generate substantial numbers of new trips or change traffic patterns. Less than significant.*

CO concentration is a direct function of motor vehicle activity (e.g., idling time and traffic flow conditions), particularly during peak commute hours, and meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land-uses such as residential areas, schools, and hospitals. A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. The proposed Program is not expected to generate new traffic or worsen existing conditions, as new facilities are not

expected to be large enough to generate substantial numbers of new trips or change traffic patterns. This impact is considered to be **less than significant**.

Mitigation Measure: No mitigation measures are required.

IMPACT 3.11-6 Increased Odor Sources from Project Construction and Operations. *Odors associated with diesel fumes during construction would be temporary and would disperse rapidly with distance from the source. Because expansion of wastewater and recycled water facilities would not affect odor control designs, devices, and practices, the Program would not subject sensitive receptors to additional odors from Program operations. Less than significant.*

Construction-Related Odors

Minor sources of odors associated with construction of the proposed Program include exhaust odors from diesel engines, as well as emissions associated with asphalt paving and the application of architectural coatings, considered offensive to some individuals. Similarly, diesel-fueled trucks traveling on local roadways would produce associated diesel exhaust fumes. Although some of the proposed construction would occur upwind of sensitive receptors, windy conditions in the HUA would tend to disperse combustion emissions and associated odors fairly rapidly with distance from the source. As a result, temporary short-term construction-related odors would be **less than significant**.

Operational Odors

The MBUAPCD has identified some common types of facilities that have been known to produce odors during operations, including agriculture (farming and livestock) and wastewater treatment plants. The proposed Program includes expansion of the City's WRF.

According to the facility's Permit to Operate, the permit is conditional upon the ability of the WRF to operate without the discharge of objectionable odors that would constitute a public nuisance. District Rule 402 regulates public nuisances by the standard that "no person shall discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public; or which cause, or have a natural tendency to cause injury or damage to business or property."

The WRF has designs, technological controls, and operational controls in place to minimize nuisance odors. They include an odor control biofilter. This is a pretreatment facility that encloses all open channels that trap odors in the grit chamber and fine screen areas. The biofilter's grit washer and screenings washer/compactor areas are enclosed in a building. The foul air is deodorized by a packaged synthetic media biofilter (Hollister 2006:4.8-23).

Expansion of facilities would not affect the operations of the existing odor control systems. Given the regulatory regime under which this facility operates, that there is not a substantial number of sensitive receptors in the vicinity of the facility that have not been subject to odors under current operations, and that current odor control measures would not change with expansion of the treatment facility, operations-related impacts of the Program would be **less than significant**.

Mitigation Measure: No mitigation measures are required.

3.11.4 RESIDUAL SIGNIFICANT IMPACTS

Mitigation measures are proposed for all potentially significant impacts where feasible. In certain cases, there are no feasible mitigation measures available to reduce potentially significant impacts to less-than-significant levels. These impacts are summarized below:

Impact 3.11-1: Temporary and Short-Term Increases in Emissions of GHG. GHGs from construction activities cannot be mitigated to less-than-significant levels; GHGs resulting from construction emissions cannot be effectively mitigated with current technologies. Consequently, project-related production of GHGs from construction activities remains as a **residual significant and unavoidable** impact.

Impact 3.11-3: Long-Term Increases in Greenhouse Gas Emissions Associated with Project Operations. Project operations would require the combustion of fossil fuels for pumping, demineralization, and other treatment processes, either directly (if diesel or natural gas are used) or indirectly (if electricity is used). Accommodation of growth in the HUA would increase GHG emissions of CH_4 and N_2O associated with increased waste treatment. GHGs resulting from construction emissions cannot be mitigated with current technologies. After mitigation, this impact remains as a **residual potentially significant and unavoidable** impact.

3.12 NOISE

3.12.1 ENVIRONMENTAL SETTING

ACOUSTIC FUNDAMENTALS

Acoustics is the scientific study that evaluates perception, propagation, absorption, and reflection of sound waves. Sound is a mechanical form of radiant energy, transmitted by a pressure wave through a solid, liquid, or gaseous medium. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise; consequently, the perception of sound is subjective in nature, and can vary substantially from person to person. Common sources of environmental noise and noise levels are presented in Figure 3.12-1.

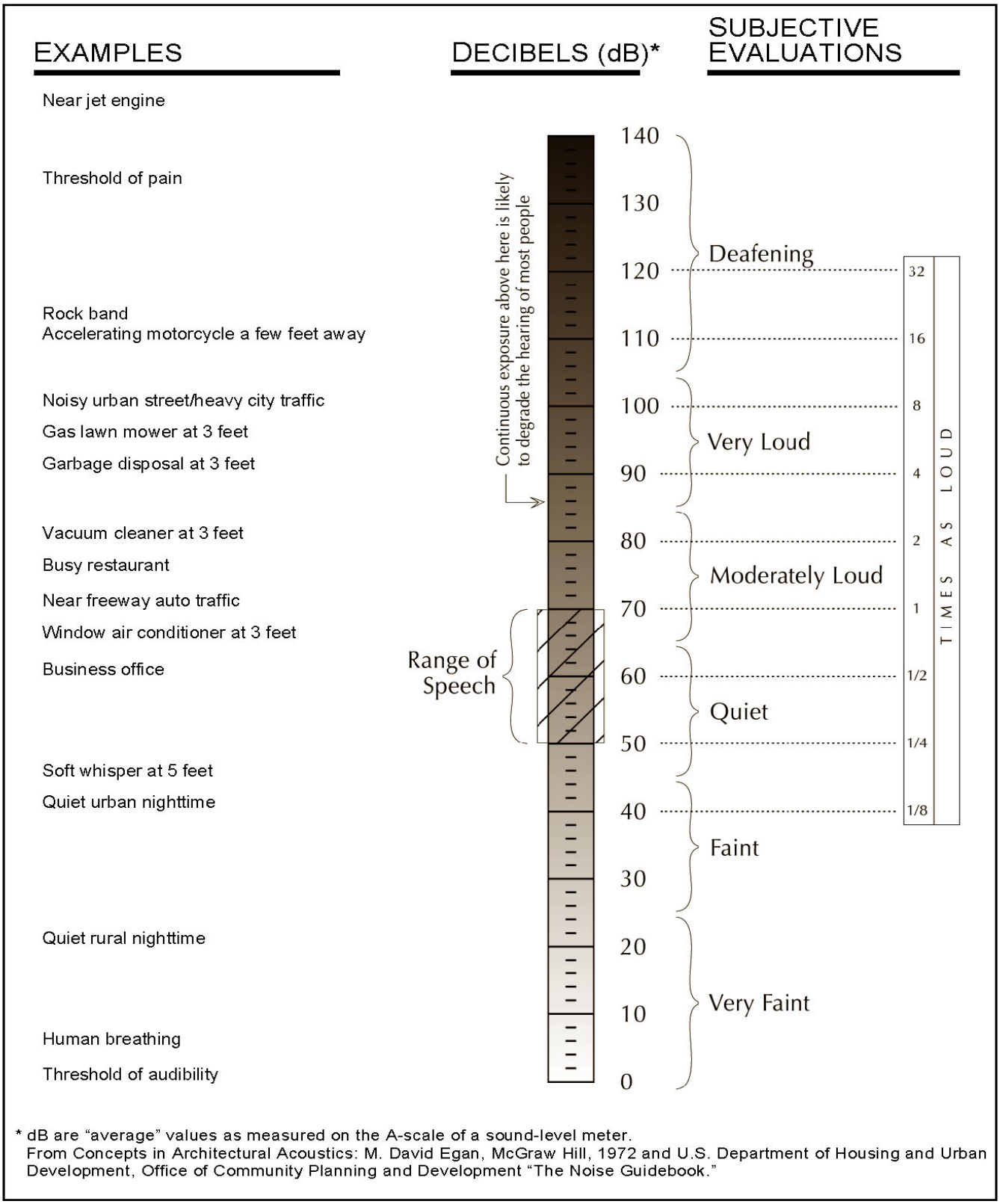
A sound wave is initiated in a medium by a vibrating object (e.g., vocal chords, the string of a guitar, the diaphragm of a radio speaker). The wave consists of minute variations in pressure, oscillating above and below the ambient atmospheric pressure. The number of pressure variation cycles occurring per second is referred to as the frequency of the sound wave and is expressed in hertz (Hz), which is equivalent to one complete cycle per second.

Directly measuring sound pressure fluctuations would require the use of a very large and cumbersome range of numbers. To avoid this and have a more useable numbering system, the decibel (dB) scale was introduced. A sound level expressed in decibels is the logarithmic ratio of two like pressure quantities, with one pressure quantity being a reference sound pressure. For sound pressure in air the standard reference quantity is generally considered to be 20 micropascals, which directly corresponds to the threshold of human hearing. The use of the decibel is a convenient way to handle the millionfold range of sound pressures to which the human ear is sensitive. A decibel is logarithmic; it does not follow normal algebraic methods and cannot be directly added. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a 100-fold increase in acoustical energy.

The loudness of sound perceived by the human ear depends primarily on the overall sound pressure level and frequency content of the sound source. The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. The standard weighting networks are identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels (dBA). For this reason the dBA can be used to predict community response to noise from the environment, including noise from transportation and stationary sources. Sound levels expressed as dB in this section are A-weighted sound levels, unless noted otherwise.

Noise can be generated by a number of sources, including mobile sources (transportation noise sources) such as automobiles, trucks, and airplanes, and stationary sources (nontransportation noise sources) such as construction sites, machinery, and commercial and industrial operations. As acoustic energy spreads through the atmosphere from the source to the receiver, noise levels attenuate (decrease) depending on ground absorption characteristics, atmospheric conditions, and the presence of physical barriers (e.g., walls, building façades, and berms). Noise generated from mobile sources generally attenuate at a rate of 3dB (typical for hard surfaces, such as asphalt) to 4.5 dB (typical for soft surfaces, such as grasslands) per doubling of distance, depending on the intervening ground type. Stationary noise sources spread with more spherical dispersion patterns that attenuate at a rate of 6 to 7.5 dB per doubling of distance.

The presence of a large object (e.g., barrier, topographic features, and intervening building façades) between the source and the receptor can also alter the propagation of noise and provide significant attenuation of noise levels at the receiver. The amount of noise level reduction or “shielding” provided by a barrier primarily depends on the



Source: Egan 1988:13

Common Noise Sources and Levels **Figure 3.12-1**

size of the barrier, the location of the barrier in relation to the source and receivers, and the frequency spectra of the noise. Natural barriers such as berms, hills, or dense woods and human-made features such as buildings and walls may be effective noise barriers.

NOISE DESCRIPTORS

The intensity of environmental noise fluctuates over time, and several different descriptors of time-averaged noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment. The noise descriptors most often used to describe environmental noise are defined below.

- **L_{max} (Maximum Noise Level):** The highest noise level occurring during a specific period of time.
- **L_{min} (Minimum Noise Level):** The lowest noise level during a specific period of time.
- **Peak:** The highest weighted or unweighted instantaneous peak-to-peak value occurring during a measurement period.
- **L_n (Statistical Descriptor):** The noise level exceeded n percent of a specific period of time, generally accepted as an hourly statistic. An L_{90} would be the noise level exceeded 90% of the measurement period.
- **L_{eq} (Equivalent Noise Level):** L_{eq} represents an average of the sound energy occurring over a specified period. Effectively, the varying sound level over a specified period contains the same acoustical energy as a steady-state sound level in that same period.
- **L_{dn} (Day-Night Noise Level):** The 24-hour L_{eq} with a 10-dB "penalty" applied during nighttime noise-sensitive hours, 10 p.m. through 7 a.m. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.
- **CNEL (Community Noise Equivalent Level):** Similar to the L_{dn} described above, but with an additional 5-dB "penalty" for the noise-sensitive hours between 7 p.m. to 10 p.m., which are typically reserved for relaxation, conversation, reading, and watching television. If the same 24-hour noise data are used, the CNEL is typically 0.5 dB higher than the L_{dn}.
- **SEL (Sound Exposure Level):** The cumulative exposure to sound energy over a stated period of time.

EFFECTS OF NOISE ON HUMANS

Excessive and chronic exposure to elevated noise levels can result in auditory and nonauditory effects on humans. Auditory effects of noise on people are those related to temporary or permanent hearing loss caused by loud noises. Nonauditory effects of exposure to elevated noise levels are those related to behavioral and physiological effects. The nonauditory behavioral effects of noise on humans are associated primarily with the subjective effects of annoyance, nuisance, and dissatisfaction which lead to interference with activities such as communications, sleep, and learning. The nonauditory physiological health effects of noise on humans have been the subject of considerable research attempting to discover correlations between exposure to elevated noise levels and health problems such as hypertension and cardiovascular disease. The mass of research infers that noise-related health issues are predominantly the result of behavioral stressors and not a direct noise-induced response. The extent to which noise contributes to nonauditory health effects remains a subject of considerable research with no definitive conclusions.

The degree to which noise results in annoyance and interference is highly subjective and may be influenced by several nonacoustic factors. The number and effect of these nonacoustic environmental and physical factors vary depending on individual characteristics of the noise environment such as sensitivity, level of activity, location,

time of day, and length of exposure. One key aspect in the prediction of human response to changes in noise environments is the individual level of adaptation to an existing noise environment. The greater the change in the noise levels that are attributed to a new noise source relative to the environment an individual has become accustomed to, the less tolerable the new noise source will be to the individual.

With respect to how humans perceive and react to changes in noise levels, a 1-dB increase is imperceptible, a 3-dB increase is barely perceptible, a 6-dB increase is clearly noticeable, and a 10-dB increase is subjectively perceived as approximately twice as loud (Egan 1988:21). These subjective reactions to changes in noise levels were developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broad-band noise, and to changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50 to 70 dB as this is the usual range of voice and interior noise levels. For these reasons, a permanent noise level increase of 3 dB or greater is typically considered substantial in terms of the degradation of the existing noise environment.

VIBRATION

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, and landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, and construction equipment). Vibration sources may be continuous (e.g., machinery) or transient (e.g., explosions) in nature. Vibration levels can be depicted in terms of amplitude and frequency relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (FTA 2006; Caltrans 2004). PPV and RMS vibration velocity are normally described in inches per second (in/sec).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. The response of the human body to vibration relates well to average vibration amplitude; therefore, vibration impacts on humans are evaluated in terms of RMS vibration velocity. Similar to airborne sound, vibration velocity can be expressed in decibel notation as vibration decibels (VdB). The logarithmic nature of the decibel serves to compress the broad range of numbers required to describe vibration.

Typical outdoor sources of perceptible groundborne vibration include construction equipment, steel-wheeled trains, and traffic on rough roads. Although the effects of vibration may be imperceptible at low levels, effects may result in detectable vibrations and slight damage to nearby structures at moderate and high levels, respectively. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in damage to structural components. The range of vibration that is relevant to this analysis occurs from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings (FTA 2006:8-1 –8-8).

EXISTING NOISE ENVIRONMENT

The existing noise and vibration environment in the PEIR study area is influenced by transportation noise emanating from vehicular traffic on area roadways, train passby operations along existing railroad lines, and aircraft overflights. Agricultural activities, mining operations, light industrial uses, commercial uses, and recreational uses are considered nontransportation noise sources that also contribute to the existing background noise levels in the study area.

Transportation Sources

Vehicular Traffic

Vehicular traffic noise levels along area roadways were calculated using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-108). Traffic volumes and medium and heavy truck mix percentages were obtained from Caltrans traffic count data (Caltrans 2008a and 2008b). Additional input data include assumed day/night percentages of automobiles, vehicle speeds, and ground attenuation factors. Existing noise levels at several representative roadway segments in the study area are provided in Table 3.12-1. Actual noise levels vary from day to day and are dependent on various factors including local traffic volumes, shielding from existing structures, variations in attenuation rates attributable to changes in surface parameters, and meteorological conditions.

Table 3.12-1
Summary of Modeled Existing Noise Levels from Vehicular Traffic in the Study Area

Roadway	Segment Location		L_{dn} (dB) 100 feet	Distance (feet) from Roadway Centerline to L_{dn} (dB) Contour		
	From	To		70	65	60
State Route 25	4th Street	Bolsa Road	75.5	353	1,118	3,535
State Route 25	4th Street	Nash Road	73.7	236	745	2,356
State Route 156	Highway 25	Mitchell Road	73.9	244	771	2,437
State Route 156	Highway 25	Fairview Road	73.1	205	648	2,049

Notes: dB = decibels; L_{dn} = day-night average noise level
Source: Modeling performed by AECOM in 2010

Railways

Another source of noise is train pass-bys along area railroads located within the study area. The Union Pacific Railroad (UPRR) Gilroy-Hollister Line operates in the study area carrying freight trains. The Gilroy-Hollister Line runs in a straight line from Gilroy along SR 25 to its terminus in Hollister. UPRR operational train data for this line were not available for this PEIR. However, the County projected the 50-dB noise exposure contour for the Gilroy-Hollister Line to extend 110 feet from the railroad tracks centerline (San Benito County 1984:17).

Aeronautical Sources

Airports that are either public or serve a scheduled airline are required to have a Comprehensive Land Use Plan (CLUP) prepared by the Airport Land Use Commission (ALUC). The purpose of ALUC is to:

- protect public health, safety, and welfare through the adoption of land use standards that minimize the public's exposure to safety hazards and excessive noise levels; and
- prevent the encroachment of incompatible land uses around public-use airports, thereby preserving the utility of these airports into the future.

The adoption and implementation of a CLUP embodies the land use compatibility guidelines for height, noise, and safety. SBCOG is the ALUC for the City and County. The Hollister Municipal Airport adopted a CLUP in October 2001. The Hollister Municipal Airport contributes to the background noise environment in the study area. Noise contours for the Hollister Municipal Airport are shown in Figure 3.12-2.

Non-Transportation Sources

Agriculture

Noise sources emanating from agricultural operations, including activities associated with the processing or transportation of crops, are conducted seasonally on existing agricultural lands in the study area. Noise sources associated with agricultural activities can include heavy equipment such as heavy duty trucks, tractors, harvesters, bailers, tillers, seeders, augers, front end loaders, and hay rakes. Intermittent noise levels of up to 85 dB L_{max} at a distance of 50 feet are associated with these types of heavy equipment. Aircraft over-flights associated with crop spraying is also a component of agricultural noise. Agricultural noise sources currently exist in the northern portions of the study area.

Industry

Industrial noise sources are associated with trucks idling, on-site truck circulation, continual use of refrigeration units on trucks, pallets dropping, use of railroad spurs, and forklifts operating on a site. Noise levels at industrial loading docks typically average hourly noise levels between 55 to 60 dB L_{eq} and between 80 to 84 dB L_{max} at a distance of 50 feet.

Among the other fixed or industrial-type noise sources that are typically of concern are cooling towers/evaporative condensers, pump stations, lift stations, steam valves, steam turbines, generators, fans, air compressors, heavy equipment, conveyor systems, transformers, pile drivers, grinders, drill rigs, gas or diesel motors, welders, cutting equipment, outdoor speakers, blowers, chippers, amplified music, and voices. Some of the uses that may typically operate these noise sources are wood processing facilities, pump stations, industrial manufacturing facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, and electric generating stations. Industrial noise sources are located primarily in the City of Hollister.

Parks and School Playgrounds

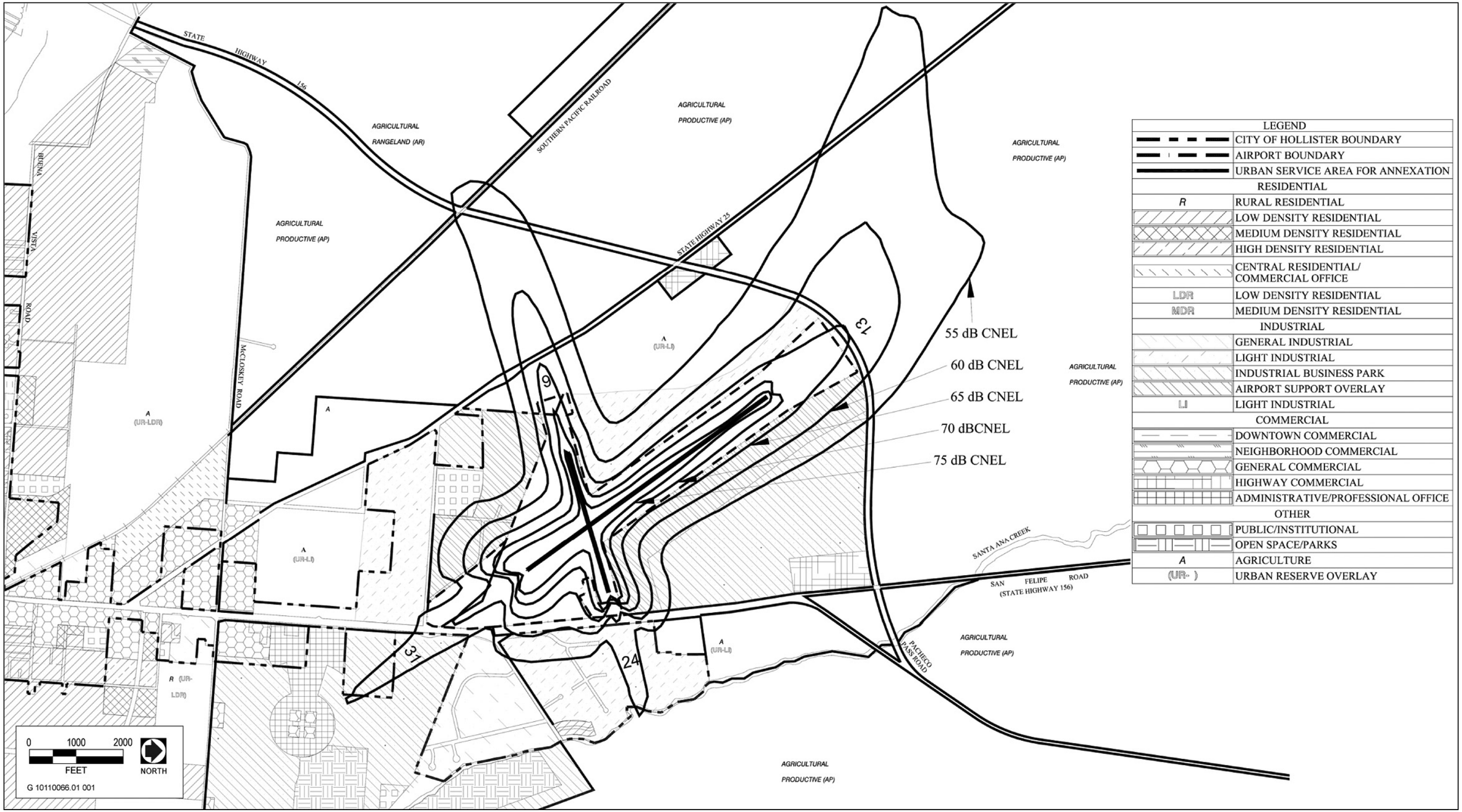
Children playing at neighborhood parks or elementary school playgrounds are considered a nontransportation noise source and contribute to the existing noise environment. Typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB L_{eq} and from 70 to 75 dBA L_{max}. Little league baseball games, with only players and no active fans, typically generate a noise level between 50 to 55 dB L_{eq} at 150 feet with an L_{max} of 65 dBA at 150 feet for a bat connecting with the ball. A girls' soccer game, with only players and no active fans, typically measures between 45 to 50 dB L_{eq} at 200 feet. A small group of parents cheering on an average play measured 65 dB L_{max} at 150 feet. School playgrounds and athletic fields are located in the study area.

3.12.2 REGULATORY CONTEXT

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

U.S. Environmental Protection Agency

The EPA's Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972 which established programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government, thereby allowing more individualized control for specific issues by designated federal, state, and local government agencies. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to designated federal agencies and state and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place.



Source: Aries Consultants LTD 2001

2020 Aircraft Noise Contours **Figure 3.12-2**

Federal Aviation Administration

The FAA is an agency of the United States Department of Transportation with authority to regulate and oversee all aspects of civil aviation in the United States. The FAR are rules prescribed by the FAA governing all aviation activities in the United States. The rules are designed to promote safe aviation, protecting pilots, passengers, and the general public from unnecessary risk and intended to protect the national security of the United States. The FAR is organized into sections, called parts due to their organization within the CFR. Each part deals with a specific type of activity. Part 150 deals with airport noise compatibility planning and is described further below.

Part 150

Part 150 of the FAR prescribes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs. Part 150 prescribes single systems for measuring noise at airports and surrounding areas that generally provides a highly reliable relationship between projected noise exposure and surveyed reaction of people to noise and for determining exposure of individuals to noise that result from the operations of an airport. Land uses which are normally compatible with various levels of exposure to noise by individuals are also identified. Lastly, Part 150 provides technical assistance to airport operators, in conjunction with other local, state, and federal authorities, to prepare and execute appropriate noise compatibility planning and implementation programs.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The State of California adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation.

Title 24

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, establishes building standards applicable to all occupancies throughout the state. The code provides acoustical regulations for both exterior-to-interior sound insulation as well as sound and impact isolation between adjacent spaces of various occupied units. Title 24, Part 2, Chapter 12, Section 1207.11.2, states that interior noise levels generated by exterior noise sources shall not exceed 45 dB L_{dn} in any habitable room.

California General Plan Guidelines

Though not adopted by law, the State of California General Plan Guidelines 2003, published by the California Governor's Office of Planning and Research (OPR), provides guidance for land use compatibility of projects within areas of specific noise exposure. Table 3.12-2 presents acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

San Benito County General Plan Noise Element

The San Benito County General Plan Noise Element contains goals, policies, and actions to protect citizens from exposure to excessive noise. The Noise Element identifies the following goals related to significant noise issues in the study area and applicable to the proposed Program.

Table 3.12-2 Land Use Noise Compatibility Guidelines				
Land Use Category	Community Noise Exposure (CNEL/L_{dn}, dB)			
	Normally Acceptable[a]	Conditionally Acceptable[b]	Normally Unacceptable[c]	Clearly Unacceptable[d]
Residential-Low Density Single Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential-Multiple Family	<65	60–70	70–75	75+
Transient Lodging, Motel, Hotel	<65	60–70	70–80	80+
School, Library, Church, Hospital, Nursing Home	<70	60–70	70–80	80+
Auditorium, Concert Hall, Amphitheater		<70	65+	
Sports Arenas, Outdoor Spectator Sports		<75	70+	
Playground, Neighborhood Park	<70		67.5–75	72.5+
Golf Courses, Stable, Water Recreation, Cemetery	<75		70–80	80+
Office Building, Business Commercial and Professional	<70	67.5–77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level.

[a] Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

[b] New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

[c] New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

[d] New construction or development should generally not be undertaken.

Source: OPR 2003:244-254

GOAL #2: To Reduce Ground Transportation-Related Noise Impacts
GOAL #3: To Reduce Industrial-Related Noise Impacts
GOAL #4: To Reduce Construction-Related Noise Impacts

San Benito County Noise Ordinance

The San Benito County Municipal Code contains noise level standards (Title 25 Zoning, Chapter 25.37 Development and Operational Standards, Article III Noise Level Standards) for the purpose of regulating the acceptable noise standard for noise emanating from any source, as it affects surrounding properties. The following sections of the County's municipal code are applicable to the proposed Program.

Section 25.37.035

(B) The L_{eq} one hour average (the sound level corresponding to a steady state sound level containing the same total energy as a time varying signal over a given sample period) shall not be exceeded in any 1-hour period.

Location	Sound Level in dBA	L_{eq} One Hour Average
	Day	Night
Rural residential	45	35
Residential	50	40
Commercial	65	55
Industrial	70	60
Notes: dB = A-weighted decibels; L_{dn} = day-night average noise level.		

(E) The following activities shall be exempt from the noise level standards:

(2) Temporary construction, demolition, or maintenance of structures between the hours of 7:00 a.m. and 7:00 p.m., except Sundays and federal holidays.

City of Hollister General Plan Noise Element

The City of Hollister General Plan Noise Element contains goals and policies to protect citizens from exposure to excessive noise. The Noise Element identifies the following policies related to significant noise issues in the study area and applicable to the proposed Program.

- **Policy HS3.1** Protection of Residential Areas from Unacceptable Noise Levels
  Protect the noise environment in existing residential areas, requiring the evaluation of mitigation measures for projects under the following circumstances: (a) the project would cause the L_{dn} to increase 3 dB(A) or more; (b) any increase would result in an L_{dn} greater than 60 dB(A); (c) the L_{dn} already exceeds 60 dB(A); and (d) the project has the potential to generate significant adverse community response.

- **Policy HS3.2** Noise Source Control
  Work with property owners to control noise at its source, maintaining existing noise levels and ensuring that noise levels do not exceed acceptable noise standards as established in the Noise and Land Use Compatibility Guidelines.

- **Policy HS3.3** Construction Noise
  Regulate construction activity to reduce noise between 7:00 p.m. and 7:00 a.m.

- **Policy HS3.4** Vehicle Noise
  Strive to reduce traffic noise levels, especially as they impact residential areas, and continue enforcement of vehicle noise standards through noise readings and enforcement actions. In particular, strive to minimize truck traffic in residential areas and ensure enforcement of Vehicle Code provisions which prohibit alteration of vehicular exhaust systems in a way that increases noise emissions.

- **Policy HS3.7** Airport Noise
  Review all proposed development north of Wright Road/McCloskey Road to ensure that it will be compatible with operations at the Hollister Municipal Airport and applicable noise standards and regulations.

City of Hollister Noise Ordinance

The Hollister Noise Control Ordinance (Title 8 Health and Safety, Chapter 8.28 Noise of the Hollister Municipal Code) contains performance standards for the purpose of protecting citizens from excessive, unnecessary, or unusually loud noises and vibrations from any and all sources in the community. The following sections of the City's Noise Ordinance are applicable to the proposed Program.

Section 8.28.020 Prohibited generally.

A. It is unlawful at any time, for any person to knowingly make, continue, or cause to be made or continued, any excessive, unnecessary, or unusually loud noise.

B. The term "excessive, unnecessary, or unusually loud noise" means a noise disturbance which occurs at any time of the day, and, because of its volume level, duration, or character, annoys, disturbs, injures or endangers the comfort, repose, health, peace, or safety of any reasonable person of normal sensitivity residing in the area.

C. For any kind of noise regardless of the time of day in which it occurs, the standards which shall be considered in determining whether a violation exists, may include, but shall not be limited to, the following:

    1. The volume or intensity of the noise;

    2. Citizen complaints;

    3. The proximity of the noise to residential properties;

    4. The nature and zoning of the area within which the noise emanates;

    5. The time and/or day of the week the noise occurs;

    6. The duration of the noise;

    7. Whether the noise is recurrent, intermittent, or constant;

    8. Whether the noise is produced by a commercial or noncommercial activity; and

    9. A noise level in residential districts exceeding fifty-five (55) dBA during daylight hours, and fifty (50) dBA after sunset, measured at the property line of the complaining party or inside an affected multiple-dwelling unit.

Although actions associated with the proposed Program would occur in the City, including areas currently unincorporated which would potentially be annexed to the City as implementation required, regulations, and policies of the County and the City are included in this analysis. Noise regulations and standards of both the County and the City are considered applicable for analyzing noise impacts because noise created by a component of the proposed Program could affect both sensitive receptors in the City as well as adjacent areas in the County.

3.12.3 Environmental Impacts and Mitigation Measures

Analysis Methodology

Program-specific information contained in Chapter 2, "Program Description," and review of existing documentation (e.g., aerial maps) were used to identify the location of sensitive receptors, as well as existing sources of noise and vibration in the study area.

Proposed facilities developed as part of the proposed Program would include treatment plants, wells, percolation basins, pipelines, storage tanks, and ancillary facilities. These facilities could be located in a variety of urban and rural settings in the study area. The exact locations for these facilities, specific construction methods, and haul routes have not been identified. For the purpose of this analysis, if an area is designated as noise-sensitive and is in close proximity of potential proposed construction areas, then the potential exists for the construction of the

proposed Program facilities to expose sensitive receptors to noise levels in excess of the applicable daytime and nighttime noise standards and/or result in a noticeable increase in ambient noise levels.

To assess potential temporary and short-term construction-related noise impacts, sensitive receptors and their potential relative exposure (considering distance) to potential Program-generated noise levels were identified. These noise levels were predicted using the Federal Transit Administration (FTA) Noise and Vibration Impact Assessment methodology (FTA 2006:5-1 through 5-29 and 10-1 through 10-12). Reference noise emission levels and the equipment usage factors were based on the Federal Highway Administration Roadway Construction Noise Model (FHWA 2006:3).

Potential noise impacts from long-term nontransportation (i.e., stationary) sources and groundborne vibration impacts were qualitatively assessed based on existing documentation (e.g., equipment noise and vibration levels). This analysis also includes an evaluation of the proposed Program's noise-generating uses that could affect sensitive receptors in the study area.

Predicted noise levels were compared with applicable standards for determination of significance. Mitigation measures were developed for potentially significant noise impacts.

THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State CEQA Guidelines, as amended, and the City of Hollister General Plan Noise Element and Noise Ordinance, the proposed Program would have a significant impact on nearby receptors that are sensitive to noise and vibration if it would:

- expose persons to or generate noise levels in excess of applicable standards (e.g., City of Hollister General Plan and Noise Ordinance exterior noise levels);
- result in a substantial permanent increase in ambient noise levels in the study area affecting noise-sensitive receptors above levels existing without the Program (where existing ambient noise levels are less than 60 dB, a significant increase would be considered a +5-dB change in ambient noise levels attributable to the Program; and where existing ambient noise levels exceed 60 dB, a significant increase would be considered +3-dB change in ambient noise levels attributable to the Program (FICON 1992:3-15 through 3-17; Caltrans 2009:7-5]);
- result in a substantial temporary, short-term, or periodic increase in ambient noise levels in the study area affecting noise-sensitive receptors above levels existing without the Program (where existing ambient noise levels are less than 60 dB, a significant increase would be considered +5-dB change in ambient noise levels attributable to the Program; and where existing ambient noise levels exceed 60 dB, a significant increase would be considered a +3-dB change in ambient noise levels attributable to the Program [FICON 1992:3-15 through 3-17, Caltrans 2009:7-5]);
- expose people residing or working in the study area to excessive noise levels from a Program element located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport;
- expose people residing or working in the study area to excessive noise levels caused by a Program element within the vicinity of a private airstrip; or
- expose persons to or generate excessive groundborne vibration or groundborne noise levels. Temporary, short-term, and long-term vibration impacts would be significant if implementation of the proposed Program would generate vibration levels that exceed Caltrans' recommended standard of 0.2 in/sec PPV with respect to the prevention of structural damage for normal buildings (Caltrans 2004:17) or FTA's maximum

acceptable vibration standard of 80 VdB with respect to human response for residential uses (i.e., annoyance) (FTA 2006:8-1–8-8) at any nearby existing sensitive land uses.

Generally for the proposed Program, the significance determination of noise- and vibration-related impacts is based on a comparison between predicted noise levels and noise criteria defined by applicable standards. Impacts are considered significant if implementation of the proposed Program would increase ambient noise levels affecting noise-sensitive land uses in excess of the decibel increase or generate vibration levels in excess of recommended standards outlined in the above thresholds of significance.

IMPACT ANALYSIS

This section provides an evaluation of the direct and indirect effects of the proposed comprehensive Program of water and wastewater management actions and infrastructure improvements on the noise environment. These actions would occur in the study area and could affect the noise environment during the improvement to existing or construction of new facilities, or from implementation of water management actions.

The following proposed Program elements were evaluated for their potential to cause noise and vibration impacts affecting sensitive receptors:

- **Purchase or Transfers of Imported Water Supplies:** This proposed Program component would use existing facilities and would not introduce new noise or vibration sources in the study area (e.g., construction, truck traffic, operational sources) through its implementation. There would be no impact; therefore, no mitigation measures would be required.

- **Non-Structural Solutions**: Program non-structural solutions would include water conservation, salinity education, a softener ordinance, and dual distribution systems in new developments. These measures would reduce water demands and improve water quality, and would not introduce new noise or vibration sources (e.g., construction, truck traffic, and operational sources) in the study area through their implementation. There would be no impact; therefore, no mitigation measures would be required.

The impact analysis below addresses the remaining proposed Program elements:

- Development of North County Groundwater Bank
- Lessalt WTP Modifications
- New Surface WTP
- New Pipeline to Ridgemark
- New Urban Wells
- Phase 1 and Phase 2 Demineralization of Urban Wells
- New Treated Water Storage Facilities
- Ridgemark WWTP upgrades
- Expansion of City of Hollister WRF
- Cielo Vista WWTP Connection to City of Hollister WRF
- Phase 2a and Phase 2b Recycled Water Facilities
- New Ridgemark Recycled Water Facilities

IMPACT 3.12-1 Expose Noise Sensitive Receptors to Temporary Short-Term Construction Noise Levels. *Short-term construction source noise levels could exceed applicable standards at nearby noise-sensitive receptors. In addition, if construction activities were to occur during more noise-sensitive hours, construction source noise levels could also result in annoyance and/or sleep disruption to occupants of noise-sensitive land uses and create a substantial temporary increase in ambient noise levels. ~~Less than significant with mitigation~~ Potentially Significant and Unavoidable.*

Implementation of the proposed Program's comprehensive water and wastewater management actions and infrastructure improvements would result in intermittent construction activities (e.g., construction of wells, surface WTPs, storage tanks, buried pipelines, and related facilities). These construction activities could potentially expose sensitive receptors to noise levels in excess of the applicable noise standards or result in a noticeable increase in ambient noise levels, or both.

Construction methods and requirements have not yet been developed for many of the Program elements. Such effects would be temporary and last only for the duration of construction activities. Construction noise levels in the study area would fluctuate depending on the particular type, number, and duration of usage for the varying equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Construction generally occurs in several discrete stages, each phase requiring a specific complement of equipment with varying equipment type, quantity, and intensity. These variations in the operational characteristics of the equipment change the effect they have on the noise environment of the study area and the surrounding community for the duration of the construction process.

The site preparation phase typically generates the highest noise levels which can be caused from use of on-site equipment associated with grading, compacting, and excavation. Site preparation equipment could include backhoes, bulldozers, loaders, excavation equipment such as graders and scrapers, and compaction equipment. Erection of large structural elements and mechanical systems could require the use of a crane for placement and assembly tasks that may also generate high noise levels. Pile-drivers may be required for construction of some features. Table 3.12-3 depicts the noise levels generated by various types of typically used construction equipment.

Table 3.12-3
Noise Emission Levels from Construction Equipment

Equipment Type	Typical Noise Level at 50 feet (dB)
Air compressor	78
Asphalt paver	77
Auger drill rig	85
Backhoe	78
Clam shovel	93
Compactor	83
Concrete breaker	82
Concrete pump	81
Concrete saw	90
Crane, mobile	81
Dozer	82
Drill rig truck	84
Front-end loader	79
Generator	81
Grader	85
Hoe ram extension	90
Jackhammer	89
Pneumatic tools	85
Pile driver	101
Rock drill	81
Scraper	84
Trucks	74–81
Water pump	81

Notes: dB = A-weighted decibels
All equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacturer-specified noise levels for each piece of heavy construction equipment.
Source: Bolt, Beranek and Newman Inc. 1981:8-4–8-5; FTA 2006:12-6

To assess noise levels associated with the various equipment types and operations, construction equipment can be considered to operate in two modes, mobile and stationary. Mobile equipment sources move around a construction site performing tasks in a recurring manner (e.g., loaders, graders, dozers). Stationary equipment operates in a given location for an extended period to perform continuous or periodic operations. Thus, determining the location of stationary sources during specific phases, or the effective acoustical center of operations for mobile equipment during various phases of the construction process, is necessary. Operational characteristics of heavy construction equipment are additionally typified by short periods of full-power operation followed by extended periods of operation at lower power, idling, or powered-off conditions.

As indicated in Table 3.12-3, operational noise levels for typical construction activities would range from 74 to 101 dB at a distance of 50 feet. Continuous combined noise levels generated by the simultaneous operation of the loudest pieces of equipment would result in noise levels of 101 dB at 50 feet. Accounting for the usage factor (percentage of an hour a piece of equipment is in use) of individual pieces of equipment and absorption effects, activities at a construction site would be expected to result in hourly average noise levels of 92 dB L_{eq}, at a distance of 50 feet. Maximum noise levels generated by construction activities are not predicted to exceed 101 dB L_{max} (maximum sound level) at 50 feet.

Program-generated construction noise levels could exceed daytime and nighttime nontransportation exterior noise standards in portions of the study area where new facilities (e.g., transmission pipeline, urban wells) would be located. Those noise levels also could result in a temporary short-term substantial increase in ambient noise levels, especially if construction were to require activities to occur during the nighttime hours (between 7 p.m. and 7 a.m. when construction noise is not exempt from regulations). As a result, construction-generated, temporary short-term noise that affects noise-sensitive receptors would be a **potentially significant** impact.

Mitigation Measure 3.12-1a: Avoid Construction Activities within 2,000 Feet of Noise-Sensitive Receptors to the Extent Practicable.

The project proponent will not conduct construction-related activities within 2,000 feet of noise-sensitive receptors. If this distance is infeasible, construction-related activities shall be sited as far from noise-sensitive receptors as possible.

Mitigation Measure 3.12-1b: Implement Measures to Reduce Temporary Short-Term Noise Levels from Construction Activities to the Extent Practicable.

The project proponent will implement the following measures during project construction activities to reduce temporary and short-term noise levels:

- use construction equipment as far away as practical from noise-sensitive uses;
- comply with the operational hours outlined in local general plans and ordinances where construction activities occur;
- locate fixed/stationary equipment as far as possible from noise-sensitive receptors;
- properly maintain construction equipment per manufacturers' specifications and fit such equipment with the best available noise suppression devices (e.g., mufflers, silencers, and wraps). All impact tools will be shrouded or shielded, and all intake and exhaust ports on power equipment will be muffled or shielded;
- use construction equipment that is quieter than standard equipment, including electrically powered equipment instead of internal combustion equipment where use of such equipment is a readily available substitute that accomplishes project construction in the same manner as internal combustion equipment; and

- prohibit idling of construction equipment for extended periods of time when it is not being used for construction activities.

Additional mitigation measures may be needed to reduce Program-level, construction-related noise to acceptable levels (e.g., installation of temporary sound barriers, pre-drilling of pile holes, and posting a phone number for the public to call so the construction contractor can quickly respond to noise complaints). The need for additional mitigation measures will be determined as part of project-level environmental review for each proposed Program element and implemented by the project proponent.

Implementation of these mitigation measures would reduce temporary short-term noise levels from construction-related activities. However, it cannot be ensured that all construction activities (e.g., drilling for urban wells) would occur during hours exempt from noise regulations. The potential for construction noise to exceed applicable standards would continue to exist and could result in a potentially substantial temporary, short-term, or periodic increase in ambient noise levels in the study area. Additionally, because Program-specific details are not yet available, it is not possible to determine if construction activities could be sited a minimum of 2,000 feet from sensitive receptors, or whether sensitive receptors would be affected. Thus, it is not known if temporary and short-term construction-related noise impacts could be fully reduced to a less-than-significant level. Therefore, Impact 3.12-1 would remain **potentially significant and unavoidable**.

IMPACT 3.12-2 Possible Exposure of Noise-Sensitive Receptors to Temporary Short-Term Off-Site Traffic Noise Levels. *Short-term construction-generated traffic source noise levels could exceed the applicable standards or create a substantial temporary increase in ambient noise levels at noise-sensitive receptors. Less than significant with mitigation.*

Program-generated, temporary short-term construction-related noise from roadway traffic (e.g., heavy-duty truck travel) on off-site roadways in the study area would occur during implementation of Program elements at various times during the phased implementation of the proposed Program. Traffic noise-level increases would depend on the increase of average daily traffic volumes attributable to construction worker trips and the number of heavy-duty truck travel on haul routes for individual Program elements.

Existing traffic noise levels on major roadways (state routes) in the study area range from approximately 73.1 dB to 75.5 dB L_{dn} at a distance of 100 feet from roadway centerlines (see Table 3.12-1). It is assumed that most study area roadways, other than state routes or roadways in and around the City, would have relatively low average daily traffic volumes. Typically, traffic volumes must double before an associated increase in noise levels is noticeable (3 dB [CNEL/L_{dn}]) along roadways (Caltrans 2009:7-5).

To identify a screening threshold for construction traffic noise impacts, roadways in the City were selected to represent typical roadway traffic. Segments of Santa Ana, San Benito, and San Felipe Roads were selected based on their relative location to potential, future project sites identified in the proposed Program and their existing daily traffic volumes (Table 3.12-4). More specifically, the four roadway segments were selected because they represent the lowest, middle range, or highest levels of traffic volumes in the City. As shown in Table 3.13-4, construction activities would need to increase traffic volumes on roadways by at least 350 truck trips a day before a noticeable noise level increase (3 dB [CNEL/L_{dn}]) occurs in the ambient noise environment on roadways with lower existing average daily traffic volumes.

Although haul routes, haul material amounts, and Program-specific construction traffic volumes have yet to be defined, the potential for traffic noise-level increases would exist. The magnitude of infrastructure construction associated with the Program elements, however, is not large and would be spread over the study area both spatially and temporally. Nonetheless, temporary and short-term off-site construction traffic source noise could result in the exposure of sensitive receptors to noise levels in excess of applicable standards or create a potentially substantial temporary and short-term increase in ambient noise levels. As a result, this impact would be **potentially significant**.

Table 3.12-4 Construction Traffic Noise Emission Threshold						
Representative Roadway	Existing Traffic Volumes	dB L_{dn}	Existing + Construction Traffic Volumes	Highway Truck %	dB L_{dn}	Change in dB L_{dn}
Potential Construction Daily Truck Trips: 100						
Santa Ana Road (McCray Street to East)	4,820	64.1	4,920	2.0	65.3	1.2
San Benito Street (Nash Road to Union Road)	7,600	63.5	7,700	1.3	64.6	1.1
San Benito Street (South Street to Nash Road)	9,800	64.6	9,900	1.0	65.5	0.9
San Felipe Road	16,870	73.8	16,970	0.6	74.0	0.2
Potential Construction Daily Truck Trips: 250						
Santa Ana Road (McCray Street to East)	4,820	64.1	5,070	4.9	66.7	2.5
San Benito Street (Nash Road to Union Road)	7,600	63.5	7,850	3.2	65.9	2.4
San Benito Street (South Street to Nash Road)	9,800	64.6	10,050	2.5	66.5	1.9
San Felipe Road	16,870	73.8	17,120	1.5	74.2	0.4
Potential Construction Daily Truck Trips: 350						
Santa Ana Road (McCray Street to East)	4,820	64.1	5,170	6.8	67.4	3.2
San Benito Street (Nash Road to Union Road)	7,600	63.5	7,950	4.4	66.5	3.0
San Benito Street (South Street to Nash Road)	9,800	64.6	10,150	3.4	67.1	2.5
San Felipe Road	16,870	73.8	17,220	2.0	74.4	0.6

Notes: dB = decibel, L_{dn} = day-night noise equivalent
Source: City of Hollister General Plan–Final Program EIR, Table 4.4.A, October 2003; modeled by AECOM in 2010

Mitigation Measure 3.12-2a: Avoid and Minimize Temporary Short-Term Noise Levels from Construction-Related Traffic Increases.

The project proponent's construction contractor shall avoid designating truck haul routes on local roadways with adjacent noise-sensitive receptors if practicable. If avoidance is not possible, the construction contractor shall designate truck haul routes with the fewest possible adjacent noise-sensitive receptors.

Mitigation Measure 3.12-2b: Implement Feasible Measures to Reduce Temporary Short-Term Noise Levels from Construction-Related Traffic Increases.

If proposed Program element construction results in greater than 350 daily truck trips (175 round trips), the project proponent shall implement the following measures during construction activities:

- develop and implement project-specific mitigation measures to reduce construction-related traffic noise level increases on haul routes to include, but are not limited to:

  - reducing haul truck operation speeds,
  - limiting the amount of material to be hauled daily,
  - limiting the hours of operation for haul trucks, and
  - installing temporary noise barriers adjacent to sensitive receptor locations;

- equip all heavy trucks with noise control devices (e.g., mufflers) in accordance with manufacturers' specifications; and

- periodically inspect all heavy trucks to ensure proper maintenance and presence of noise control devices (e.g., lubrication, nonleaking mufflers, shrouding).

Implementation of these mitigation measures would reduce potential temporary and short-term noise impacts on sensitive receptors from construction activities to a **less-than-significant** level.

IMPACT 3.12-3 Possible Exposure of Noise-Sensitive Receptors to Long-Term Off-Site Traffic Noise Levels. *Program facilities would have minimal staffing requirements and not be expected to generate traffic source noise levels that could exceed the applicable standards or create a substantial temporary increase in ambient noise levels at noise-sensitive receptors. However, off-site hauling could be associated with the demineralization Program element. Less than significant with mitigation.*

There would be minimal staffing requirements at new facilities associated with the Program. The increase in facility visits for operations and maintenance would be minor. As discussed above, traffic volumes must double before the associated increase in noise levels is noticeable (3 dB [CNEL/L_{dn}]) along roadways (Caltrans 2009:7-5). A doubling of traffic volumes would not be expected from increased staffing or site visits to Program facilities.

One possible exception is operational traffic associated with some of the options being considered for the demineralization Program element. The demineralization Program element is still in its early planning phases and several brine disposal options are under consideration. Some of the brine disposal options, such as trucking brine to an ocean outfall for disposal, could involve a substantial increase in truck haul trips. At this time, the volume of brine generated, the type of brine disposal method that be used, and haul routes and timing if a brine disposal option requiring trucking is chosen, are all unknown. Therefore, there is potential for long-term off-site operational traffic source noise to result in the exposure of sensitive receptors to noise levels in excess of applicable standards or create a substantial permanent increase in ambient noise levels. As a result, this impact would be **potentially significant.**

Mitigation Measure 3.12-3: Implement Feasible Measures to Reduce Long-Term Noise Levels from Operations-Related Traffic Increases.

If operation of a Program element would generate greater than 350 daily truck trips, the project proponent shall implement the following measures during operational activities:

- select haul routes that would not affect sensitive receptors to the extent feasible

- develop and implement project-specific mitigation measures to reduce operations-related traffic noise level increases on Program element haul routes to include, but not be limited to:

  - reducing haul truck operation speeds,
  - limiting the amount of material to be hauled daily,
  - limiting the hours of operation for haul trucks, and

- installing temporary noise barriers adjacent to sensitive receptor locations;

- equip all heavy trucks with noise control devices (e.g., mufflers) in accordance with manufacturers' specifications.

- periodically inspect all heavy trucks to ensure proper maintenance and presence of noise control devices (e.g., lubrication, nonleaking mufflers, and shrouding).

Implementation of these mitigation measures would reduce potential long-term traffic noise levels from project operations to a less-than-significant level because they would ensure that the demineralization Program element is developed in a way that would prevent long-term traffic noise due to its operations. Therefore, Impact 3.12-3 is **less than significant** with mitigation.

IMPACT 3.12-4 Expose Noise-Sensitive Receptors to Long-Term On-Site Operational Noise Levels. *Long-term operational source noise levels from stationary sources could exceed the applicable standards at nearby noise-sensitive receptors.* ***Less than significant with mitigation.***

Some of the proposed Program facilities could generate operational-related noise impacts. Noise-level increases would depend on the type of facility and improvement being implemented. For example, one Program element is the drilling of new urban wells. Although the wells and ancillary facilities would be almost entirely underground, the specific locations of wells and well installation designs are not known at this time. Therefore, operation of the new wells has the potential to introduce a new noise source near sensitive receptors.

Because specific sites for Program elements have yet to be identified and designed, the potential would exist for operations of an individual Program element (e.g., well, pump station, water treatment plant) to result in a noticeable noise level increase (5 dB [L_{eq}] in areas with an ambient noise level of less than 60 dB or 3 dB [L_{eq}] in areas with an ambient noise level of 60 dB or greater). Noticeable noise level increases would depend on the distance to sensitive receptors, well installation design, and the noise level generated by specific well mechanisms (e.g., pump or compressor). Thus, long-term operations-related noise could result in the exposure of sensitive receptors to noise levels in excess of applicable standards or create a substantial permanent increase in ambient noise levels. As a result, this impact would be **potentially significant**.

Mitigation Measure 3.12-4: Implement Feasible Measures to Reduce Long-Term Operations-Related Noise Levels.

The project proponent shall implement the following measures to reduce long-term noise levels from operations-related increases:

- locate Program elements as far from sensitive receptors as feasible;

- conduct a noise analysis if an individual Program element generates or exposes noise-sensitive receptors to noise levels exceeding local exterior noise standards or result in a noticeable and long-term noise level increase (5 dB [L_{eq}] in areas with an ambient noise level of less than 60 dB or 3 dB [L_{eq}] in areas with an ambient noise level of 60 dB or greater) in ambient noise levels. The noise analysis shall establish existing ambient noise environment and noise levels created by individual Program elements;

- implement reasonable actions to minimize noise impacts identified in the noise analysis; and

- develop and implement project-specific mitigation measures to reduce operations-related noise level increases of Program elements to ensure a noticeable noise level increase (5 dB [L_{eq}] in areas with an ambient noise level of less than 60 dB or 3 dB [L_{eq}] in areas with an ambient noise level of 60 dB or greater) does not result.

Implementation of this mitigation measure would reduce Impact 3.14-4 to a **less-than-significant** level.

IMPACT 3.12-5 Possible Generation of Temporary Short-Term Excessive Groundborne Vibration or Groundborne Noise Levels. *Temporary short-term Program-generated construction source vibration levels could exceed Caltrans' recommended standard of 0.2 in/sec PPV with respect to the prevention of structural damage for normal buildings, and the FTA recommended maximum acceptable vibration standard of 80 VdB with respect to human response for residential uses (i.e., annoyance) at vibration-sensitive land uses. Less than significant with mitigation.*

Construction of Program elements would result in vibration from heavy-duty truck travel on haul routes for material transport and heavy-duty equipment at Program element construction sites. Construction activities may temporarily generate intermittent groundborne noise and vibration, potentially affecting nearby sensitive receptors. Groundborne vibration levels would depend on specific construction equipment used and operations involved. Groundborne vibration levels caused by various types of construction equipment are summarized in Table 3.12-5.

Table 3.12-5
Representative Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 feet (in/sec)[1]	Approximate Level (VdB) at 25 feet[2]
Pile driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Notes: PPV = peak particle velocity, in/sec = inches per second, VdB = vibration decibels
1. Where PPV is the peak particle velocity
2. Where Lv is the RMS velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.
Source: Caltrans 2004:17; FTA 2006

The amount and duration of vibration-induced construction activities associated with the proposed Program have not been determined, thus the vibration-generating equipment that might be used is not known at this time. Depending on the specific construction equipment used and operations involved during construction of Program elements, sensitive receptors could be exposed to groundborne vibration levels that exceed Caltrans' recommended standard of 0.2 in/sec peak PPV with respect to the prevention of structural damage for normal buildings (Caltrans 2004:17) or to groundborne vibration levels that exceed FTA's maximum acceptable vibration standard of 80 VdB with respect to human response for residential uses (i.e., annoyance) (FTA 2006). As a result, this impact would be **potentially significant.**

Mitigation Measure 3.12-5a: Avoid and Minimize Groundborne Noise and Vibration Levels.

The project proponent shall not conduct construction activities within close proximity to vibration-sensitive receptors if practicable. If avoidance is not possible, construction activities shall be sited as far from vibration-sensitive receptors as possible.

Mitigation Measure 3.12-5b: Implement Feasible Measures to Reduce Groundborne Noise and Vibration Levels.

The project proponent shall implement the following measures during construction activities:

- the construction contractor's contact information shall be posted in a location near Program element construction sites, clearly visible to the nearby receptors most likely to be disturbed. The construction contractor will manage complaints and concerns resulting from activities that cause vibrations. The severity of the vibration concern will be assessed by the contractor and, if necessary, evaluated by a qualified noise and vibration control consultant;
- conduct vibration monitoring before and during pile-driving operations if such operations occur within 100 feet of any historic structures. Every attempt will be made to limit construction-generated vibration levels in accordance with Caltrans' recommendations during pile driving and other groundborne noise and vibration-generating activities in the vicinity of the historic structures;
- cover or temporarily shore adjacent historic features, as necessary, for protection from vibration, in consultation with a qualified architectural historian;
- use alternative installation methods (e.g., pile cushioning, jetting, pre-drilling, cast-in-place systems, or resonance-free vibratory pile drivers) where possible for pile driving required within a 50-foot radius of residences. These types of alternative installation methods would reduce the number and amplitude of blows required to seat the pile; and
- conduct pile-driving activities within 285 feet of sensitive receptors during daytime hours, to avoid sleep disturbance during evening and nighttime hours.

Implementation of these mitigation measures would substantially minimize the impacts of groundborne noise and vibration on sensitive receptors, including potential historic structures and would reduce Impact 3.12-5 to a **less-than-significant** level.

3.12.4 Residual Significant Impacts

Implementation of Program elements would result in possible exposure of noise-sensitive receptors to temporary and short-term construction-related noise. Because the Program elements have not been designed, construction methods have not been determined, construction traffic haul routes have not been identified, and specific noise receptors along construction-related traffic routes have not been identified, it is unknown whether sensitive receptors would be affected, exceedances would occur, or implementation of the recommended mitigation measures would reduce potentially significant impacts to less-than-significant levels. Therefore, residual impacts remain potentially significant.

3.13 RECREATIONAL RESOURCES

3.13.1 ENVIRONMENTAL SETTING

The PEIR study area is home to numerous parks and recreational facilities that are owned and operated by several entities, including the City of Hollister Division of Parks, San Benito County Public Works Department, California State Parks, and private organizations. The Parks and Recreation Master Plan for the City indicates that the City's parkland goal is 4 acres of parks and recreational facilities per 1,000 residents (City of Hollister 2001). Table 3.13-1 lists existing recreational facilities. Although San Justo Reservoir and Recreational Area is operated by the San Benito County Public Works Department and listed as a recreational opportunity, the facility has been closed to the public since 2008 because of a zebra mussel infestation.

Table 3.13-1
Existing Parks and Recreation Facilities Within or Near the Study Area

City of Hollister		
Calaveras School Park	Dunne Park	Cerra Vista School Park
Frank Klauer Memorial Park	Hollister Community Center	John Z. Hernandez Memorial Park
Las Brisas Park	Marguerite Maze Sports Complex	Rancho San Justo Sports Complex
Tony Aguirre Memorial Park	Vista Park Hill	Andy Hardin Stadium
Riverside Park		
San Benito County		
San Justo Reservoir	Quail Hollow Park	Oak Creek Park
Veterans' Memorial Park	County Historical Park	San Benito County Fairgrounds at Bolado Park
State of California		
Hollister Hills State Vehicular Recreation Area	Fremont Peak State Park	
Private Golf Courses		
San Benito County Golf Club	San Juan Oaks Golf Club	Ridgemark Golf and Country Club

Sources: Data compiled by AECOM in 2010 based on data from County of San Benito 2008 and City of Hollister 2010

In addition to parks, the City has two off-street bike paths (Class I); a 6-foot-wide asphalt path adjacent to Prospect Avenue and Airline Highway between Hawkins Street and Sunnyslope Road; and a 6-foot-wide concrete bicycle and pedestrian path, which front a shopping center adjacent to Airline Highway between Sunnyslope Road and Sunset Drive. The County has adopted a Bikeway Plan that is designed to provide connections between parks, special use facilities, major shopping centers, and employment centers.

3.13.2 REGULATORY CONTEXT

No federal or state plans, policies, regulations, or laws related to recreational resources apply to the proposed Program. State, regional, and local plans, policies, and regulations that must be considered are described in the following subsections.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

San Benito County General Plan

The Open Space and Conservation Element of the San Benito County General Plan has a policy to "acquire, develop, operate, and maintain a comprehensive space system of open space land uses and recreational facilities to provide for the low intensity trails, picnicking, informal sports, park benches, and active recreational needs (sports fields for youth and adult league play) of the County population." The County has a ratio of parks to population policy of 5 acres of park land per 1,000 persons in the unincorporated areas of the County.

City of Hollister General Plan

Chapter 5, "Community Services and Facilities Element," of the City of Hollister General Plan provides goals, policies, and implementation measures to facilitate orderly, efficient, and context for sensitive expansion and development of Hollister's circulation systems. The pertinent policies include the following, among others:

- **Policy CSF4.4** Parks and Recreation Standards – Provide for high-quality neighborhood and community parks to meet the recreational, open space, leisure, and play needs and desire of existing and future residents. Coordinate efforts with the County of San Benito to provide an average of 4 acres of developed parks and recreational facilities for every 1,000 residents within the Hollister Planning Area.

- **Policy CSF4.5** Park and Recreation Master Plan – Ensure an equitable distribution of parks and recreational facilities throughout the City. The City will strive to improve, operate, maintain, and rehabilitate existing parks, facilities, and other public amenities, and will design all new parks to meet the quality standards established in the Parks and Recreation Master Plan.

- **Policy CSF4.6** Recreation Programs – Provide high-quality facilities and recreation programs to meet the recreational and cultural needs and desires of existing and future residents of all groups, ethnicities, and income levels.

3.13.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

This analysis considered the range and nature of parks and recreational facilities in the PEIR study area and identified the primary ways that construction and operation of the proposed Program could affect existing facilities. These impacts were analyzed by comparing the Program Description in Chapter 2 and Figure 9-1 of the Master Plan (MOU Agencies 2008) to the location of the existing parks and recreational facilities listed in Table 3.13-1.

THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State CEQA Guidelines, as amended, a significant impact on recreational resources would occur if the proposed Program would:

- increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or

- include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

Additionally, a significant impact on recreational resources would occur if the proposed Program would:

- substantially restrict or reduce the availability or quality of existing recreational opportunities in the study area, or
- implement construction- or operational-related activities related to the placement of Program facilities that would cause a substantial long-term disruption of any institutionally recognized recreational activities.

IMPACT ANALYSIS

The proposed Program would not increase the use of existing parks or other recreational facilities to the extent that substantial physical deterioration of these facilities would occur or be accelerated because the proposed Program would not increase the general population that would use existing park and recreational facilities. Additionally, the proposed Program would not involve the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. No further discussion of these issues is required.

The Phase 1 Recycled Water Facilities Program element involves disposal of recycled water at the Riverside Park. This Program element was completed in 2009 including the necessary CEQA documentation. No further discussion of this Program element is required.

IMPACT 3.13-1 Potential Reduction of Availability or Quality of Existing Recreational Activities and Opportunities in the Study Area. *Most Program elements would occur at existing water facility sites or rural areas away from recreational activities and opportunities. No operations-related impacts would occur, and the only possible impacts would be temporary short-term construction-related impacts of any Program elements that might be located near existing recreational facilities.* Less than significant.

The siting of some Program facilities has not been determined yet. Many Program elements, however, would be implemented at existing locations, such as the Lessalt WTP or the Ridgemark WWTP, where recreational opportunities would not be adversely affected. Proposed pipelines would be located within existing roadways and easements to the extent possible, particularly in urban areas. Wells and other facilities would be sited in rural agricultural areas, away from any recreational facilities and activities. Bicycle pathways located along Airline Highway could be impacted during construction if proposed Program facilities are constructed nearby. Although the exact locations of many proposed Program elements have not yet been identified, available Program information indicates impacts to recreational resources would be unlikely. Impacts from long-term Program operations are not anticipated. Potential impacts to recreation would be limited to temporary and short-term disruptions during construction if construction activities occurred directly adjacent to existing recreational facilities or activities. These disruptions would not substantially reduce the quality and quantity of recreational opportunities in the study area. Such impacts on recreational resources would be considered **less-than-significant**.

Mitigation Measure: No mitigation measures are required.

IMPACT 3.13-2 Potential Impact on Ridgemark Golf Course from Recycled Water. *Recycled water with a relatively high salt content would be provided to the Ridgemark Golf Course. The proposed Program includes blending recycled water with higher quality water prior to delivering the water to Ridgemark Golf Course.* No impact.

The SSCWD would provide recycled water to the Ridgemark Golf Course for irrigation through the proposed Ridgemark Recycled Water Facilities Program element. Recycled water could have relatively high salt content that could adversely impact the golf course greens, fairways, and other vegetation. SSCWD would blend the recycled water with either groundwater or CVP supply prior to delivering the water to the Ridgemark Golf Course, as part of this Program element. In addition, Program elements such as the Pipeline to Ridgemark and the enforcement of a water softener ordinance would improve the quality of recycled water produced by the Ridgemark WWTP. Through a combination of blending recycled water with higher quality water and

implementing Program elements to improve recycled water quality, the salt content of delivered water to Ridgemark Golf Course would be reduced to acceptable levels and use of the Course would be unaffected. There would be **no impact**.

Mitigation Measure: No mitigation measures are required.

3.13.5 RESIDUAL SIGNIFICANT IMPACTS

Implementation of the proposed Program would not result in any residual significant impacts related to recreational resources.

3.14 VISUAL RESOURCES

3.14.1 ENVIRONMENTAL SETTING

The PEIR study area includes a mosaic of rural and suburban areas, bordered by the foothills of the Gabilan and Diablo Ranges. These mountain ranges provide a rugged, natural backdrop to the highly modified landscape along a plain that is a patchwork of agricultural and urban areas. Rural areas range from rolling grasslands to cultivated properties. Drainage ravines are located throughout the area. Some of these drainages support mature woody vegetation, and others are more open in character. The land within the HUA generally slopes upward from north to south, with elevations of approximately 210 feet near the Hollister Municipal Airport, 290 feet near City Hall, and 500 feet near the intersection of Fairview Road and SR 25 (SR 25, Airline Highway). Although the topography is relatively flat in most areas, the terrain is hilly near the San Benito River, west of the Southern Pacific Railroad line northwest of Hollister and in the eastern portion of the area (City of Hollister 2005a:6-1).

SR 25 is designated as an "Eligible State Scenic Highway" from SR 198 in Monterey County north to its junction with SR 156 in Hollister (Caltrans 2010). No existing highways in San Benito County are "Officially Designated State Scenic Highways." Views from SR 25 generally consist of rolling wooded hillsides and broad agricultural valleys. The visual landscape pattern varies from symmetrical patterns associated with row crops and orchards to less visually structured areas such as pastureland. The visual character of the PEIR study area ranges from historic buildings in the downtown area to modern single story commercial establishments and newer residential developments beyond downtown (San Benito County 2003). Areas beyond downtown are largely commercial and residential, with varying architectural styles and densities, interspersed with vacant lots and "islands" of agricultural land (City of Hollister 2005b:4.7-1).

Representative examples of the PEIR study area's visual character in rural areas are presented in Figures 3.14-1a through 3.14-1f.

Example of Existing Visual Character in PEIR Study Area **Figure 3.14-1a**

Example of Existing Visual Character in PEIR Study Area **Figure 3.14-1b**

Example of Existing Visual Character in PEIR Study Area **Figure 3.14-1c**

Example of Existing Visual Character in PEIR Study Area **Figure 3.14-1d**

Example of Existing Visual Character in PEIR Study Area **Figure 3.14-1e**

City Water Reclamation Facility **Figure 3.14-1f**

3.14.2 REGULATORY CONTEXT

No federal or state plans, policies, regulations, or laws pertain to visual resources that would apply to the proposed Program. Regional and local plans, policies, and regulations that must be considered are described in the following subsections.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

San Benito County General Plan

The intent of the San Benito County General Plan Scenic Roads Element is to protect and enhance the natural scenic beauty of San Benito County through the conservation of designated scenic highways and their corresponding scenic corridors (San Benito County 1992). San Benito County is endowed with extraordinary scenic qualities of its mountains and agricultural environment. These scenic qualities differ in degree on various roads but, as a whole, make up an important County resource. This element represents an effort to define those scenic qualities and to present a program for their utilization, preservation, and enhancement. No existing roads in San Benito County are officially designated as scenic roads. However, because SR 25 is an "Eligible State Scenic Highway," it is prudent to consider effects on this highway that could result from the proposed Program.

The following policies of the San Benito County General Plan Scenic Roads and Highways Element are relevant to the proposed Program:

- **Policy 1:** It is the policy of San Benito County to provide for the protection of certain transportation corridors which are recognized as having unusual or outstanding scenic qualities.

- **Policy 2:** Because the County recognizes the valuable resources of soil and the need for the preservation of natural environments and because the County recognizes that grading can have significant adverse impacts within scenic areas, it is the County's policy to carefully review all projects involving grading within Scenic Corridors.

- **Policy 3:** Recognizing that most architectural designs are compatible with scenic areas, but that some can have significant adverse impact on the scenic resource, which the County seeks to preserve, it will be the County's policy to review proposals to insure that the obstruction of views in minimized.

- **Policy 5:** It will be the County's policy to review each application and to provide mitigation measures which will minimize the visual impact of utility lines on the Scenic Corridor.

San Benito County Dark Sky Ordinance

The County‘s Dark Sky Ordinance (748) establishes general requirements and guidelines for lighting. The ordinance encourages lighting practices that minimize light pollution and glare, conserve energy while maintaining security and productivity, and curtail the degradation of the nighttime visual environment (San Benito County 2010).

San Benito County Hillside Development Ordinance

The Hillside Development Ordinance creates sensitive viewshed areas and establishes design review guidelines for development on hillsides. While the ordinance only applies to residential development, through this ordinance, the County recognizes that the hillsides and ridgelines within the County are a unique resource. (San Benito County 2009.)

City of Hollister General Plan

The City of Hollister General Plan is a statement of fundamental values and shared vision for future development of the City (City of Hollister General Plan 2005a). Its purpose is to direct and coordinate future planning decisions. It also describes the desired character and quality of development, and the process for how development should proceed.

The following policies of the City of Hollister General Plan Open Space and Agriculture Element are relevant to the proposed Program:

- **Policy OS1.1:** Open Space Preservation. Retain and protect open space areas whenever practical through the protection of prime farmlands, the prevention of new development in areas subject to natural hazards that serve as wildlife habitat or as visual assets for the community, and where the development of additional parks and trails is possible. Open space areas can also function as connections between neighborhoods, for example with the creation of pathways in environmentally appropriate areas.

- **Policy OS1.6:** Utilities in Open Space. Discourage utilities in open space areas. Necessary utilities in open space should be located and designed to minimize harm to the area's environmental and visual quality.

The following policy of the City of Hollister General Plan Land Use and Community Design Element is relevant to the proposed Program:

- **Policy LU8.4:** Neighborhood Scale. Preserve and enhance the character of existing residential neighborhoods by limiting encroachment of new buildings and activities that are out of scale and character with surrounding uses.

3.14.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

ANALYSIS METHODOLOGY

The visual resources analysis was based on a review of relevant local planning documents, field observations of the study area, and an assessment of the magnitude of changes to the existing visual baseline posed by the proposed Program. Consideration was given to the following factors in determining the extent and implications of the visual changes:

- specific changes in the landscape's visual composition, character, and any specially valued qualities;
- the visual context (what surrounds the study area); and
- the extent to which the affected environment contains places or features that have been designated in government plans for visual protection or special consideration.

Proposed facilities developed as part of the proposed Program include treatment plants, wells, percolation basins, pipelines, drinking water storage tanks, and ancillary facilities. These facilities could be located in a variety of urban and rural settings in the study area. The specific locations and design for many of these facilities have not been identified. Therefore, the impact analysis takes a broad perspective regarding potential project-related impacts to visual resources without any site-specific analysis.

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on Appendix G of the State CEQA Guidelines, as amended. The proposed Program is determined to result in a significant impact related to visual resources if it would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

IMPACT ANALYSIS

The following Program elements were evaluated for their potential to cause impacts to visual resources and no impacts were identified:

- **Purchases or Transfers of Imported Water Supplies**: This Program element would use existing facilities and would not involve construction of new facilities.
- **Non-Structural Solutions**: This Program element includes water conservation, salinity education, a water softener ordinance, and other measures. These measures would reduce water demands and improve water quality and would not involve construction of new facilities.

Because this evaluation is based on Program-level descriptions of Program elements, it is assumed that construction of some Program elements could result in short term and long term changes to the visual character of the PEIR study area. These Program elements include:

- North County Groundwater Bank,
- New Surface Water Treatment Plant,
- Phase 1 Demineralization of Urban Wells,
- New Pipeline to Ridgemark,
- New Treated Water Storage,
- Ridgemark Recycled Water,
- Phase 2a Recycled Water Program,
- New Urban Wells,
- Cielo Vista WWTP Connection to City WRF, and
- Phase 2b Recycled Water Program.

IMPACT 3.14-1 Adverse Effects on Existing Visual Character and Scenic Vistas or Resources. *The proposed project would result in the construction of new facilities and upgrades/expansions to existing facilities in the HUA. SR 25 is an "Eligible State Scenic Highway" that passes through Hollister and would be sensitive to landscape changes from Program elements. The extent of potential effects on scenic views and existing visual character from permanent structures and temporary construction activities cannot be determined without specific information concerning each facility's location and design.* ***Less than significant with mitigation.***

The proposed project would result in the construction of new facilities and upgrades/expansions to existing facilities in the HUA. Because SR 25 is an "Eligible State Scenic Highway" that passes through the City, scenic resources along SR 25 would be sensitive to landscape changes from Program elements if the changes substantially damage the visual integrity of these resources. For example, placement of a water storage tank on a hillside that was clearly visible from SR 25 could result in a degradation of existing scenic views from that highway. Program elements constructed in the study area in locations not visible from SR 25 could also alter the area's existing visual character, if those elements produced a sufficiently high level of visual contrast with existing landscape features.

The precise location, design, and layout of each of the proposed Program elements have not been determined. Once specific sites are selected and individual facilities are designed, additional project-level CEQA environmental review would be conducted to identify the potential effects on the existing visual character of the project sites and surrounding areas, as well as to identify any specific scenic vistas or resources that would potentially be affected. Because construction of Program elements would occur for a relatively short period of time in any given area, potential impacts on visual character or scenic views because of Program-related construction would be limited in duration. The existing study area is occupied by facilities that are similar in character and scale to those associated with the proposed project. Therefore, Program elements would be introduced into a visual landscape that is currently occupied by similar types of structures.

The long-term presence of Program elements in the landscape during proposed project operations, however, would potentially contrast with adjacent uses, thereby negatively altering scenic resources and the existing visual character of the study area. The extent of potential effects on scenic views and existing visual character from permanent structures and temporary construction activities cannot be determined without specific information concerning each facility's location and design. Therefore, impacts on scenic views and existing visual character would be **potentially significant**.

Mitigation Measure 3.14-1: Avoid Substantial Alteration of Scenic Views and Substantial Changes to Existing Visual Character, When Feasible.

To mitigate the visual impact of new structures introduced into the landscape, the project proponent shall locate and design Program elements in a manner that enhances their visual integration into existing environs, when feasible. Design elements may include but shall not be limited to the painting of structural

facades to blend with surrounding land uses, partial burial of above ground facilities such as drinking water storage tanks if feasible, or implementing appropriate landscaping and design to minimize visual impacts. During construction periods for the various Program elements, the project proponent shall ensure that construction equipment, construction staging areas, and construction sites are sufficiently shielded, when feasible, to the extent that they do not substantially alter scenic views.

Implementing Mitigation Measure 3.14-1 would reduce this potential impact to **less than significant** because it would preserve scenic resources along a visually sensitive highway corridor.

IMPACT 3.14-2 New Sources of Substantial Light and Glare. *Implementation of the proposed Program would involve the establishment of new water and wastewater infrastructure facilities requiring the installation of new lighting systems and equipment that would be a source of glare.* ***Less than significant with mitigation.***

Implementation of the proposed Program would involve the establishment of new water and wastewater infrastructure facilities requiring the installation of new lighting systems and equipment that would be a source of glare. New lighting equipment and new sources of glare could negatively affect day or nighttime views, especially if existing views were not exposed to substantial sources of light or glare. This impact is potentially significant.

Mitigation Measure 3.14-2: Avoid Substantial New Light and Glare on Surrounding Views, When Feasible.

The project proponent shall ensure that lighting and building materials at new and upgraded/expanded facilities shall be designed to the extent feasible to avoid the generation of substantial new light or glare that may negatively affect surrounding views. The project proponent shall provide project specifications for construction of Program elements to reduce lighting intrusion and glare on surrounding uses, to the extent feasible. Highly reflective building materials and/or finishes shall not be used in the design of proposed elements, and landscaping shall be maintained to minimize off-site light and glare.

Implementing Mitigation Measure 3.14-2 would reduce this impact to **less than significant** because it would preserve existing ambient lighting levels in the study area.

3.14.4 RESIDUAL SIGNIFICANT IMPACTS

Implementation of the mitigation measures presented above would reduce all project impacts to a less-than-significant level. No residual significant impacts would remain.

4 CUMULATIVE IMPACTS

4.1 APPROACH

4.1.1 CEQA REQUIREMENTS

Section 21083 of the Public Resources Code requires that an EIR discuss impacts of a project when the project's incremental effect is "cumulatively considerable." According to Section 21083, "'cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (see also State CEQA Guidelines Section 15130[a][1]–[3], as amended). Sections 15355 and 15130 indicate that cumulative impacts are to be analyzed in the context of "closely related" projects and projects "causing related impacts."

Pursuant to Section 15130(b) of the State CEQA Guidelines as amended,

> [t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

If an incremental effect is not considered cumulatively considerable, the EIR must briefly describe the basis for this conclusion.

4.1.2 APPROACH TO ANALYSIS

The proposed Program would involve the implementation of numerous Program elements throughout the study area through 2023 (see Chapter 2, "Project Description"). As appropriate for a proposed Program of this scope and in accordance with State CEQA Guidelines Section 15130(b)(1)(B), as amended, this PEIR analyzes the proposed Program's potential contributions to cumulative impacts, in part using a summary of projections contained in relevant planning documents and qualitative evaluations of impacts from past, present, and probable future projects. The proposed Program takes an integrated approach to water supply and quality, wastewater, and recycled water. To satisfy the CEQA requirement to evaluate "closely related projects," an EIR for a proposed utilities improvement project for water supply and water quality would generally evaluate other utilities projects proposed, planned, or under construction in the vicinity of the proposed utilities improvement. In this case, the Program already encompasses future utilities improvements for water supply, water quality, water reclamation, recycled water, and their appurtenant facilities, the potential impacts of which were evaluated programmatically in this PEIR. For this cumulative impacts analysis, "closely related" projects are therefore not utilities projects but rather other related projects in the PEIR study area. The proposed Program (which includes all Program elements) is evaluated relative to the combined effects resulting from development projects that are under construction, programmed for construction, or under environmental review in the HUA, in addition to planned build-out of land use plans for the City and County. Summaries of relevant planning documents are provided in Section 4.3.3.

4.2 CUMULATIVE EFFECTS ANALYZED PREVIOUSLY IN 2003 GROUNDWATER MANAGEMENT PLAN UPDATE EIR

One of the Program objectives is to implement the goals of the Groundwater Management Plan Update (GWMP Update). San Benito County Water District (SBCWD) analyzed the cumulative operational effects of various

water supply and water quality operations in its *Program Environmental Impact Report for Groundwater Management Plan Update* (SBCWD 2003). Potential cumulative impacts in the resource issue areas of land use, hydrology and water quality, biological resources, geology and seismicity, cultural resources, transportation, air quality, utilities and service systems, visual resources, energy, and public services were evaluated in detail. The information regarding cumulative conditions was obtained from the cities of Hollister and San Juan Batista, Santa Clara County, and San Benito County. SBCWD concluded that implementation of the GWMP Update would remove constraints on development and that physical changes to the environment from construction of the Program elements would be additive to the construction impacts of urban development that would occur because of the improved water supply reliability and quality (SBCWD 2003:197).

There are differences between the GWMP Update and the proposed Program. The proposed Program updates and refines some elements that were initially considered in the GWMP Update and eliminates others. Specifically, the proposed Program eliminates certain options considered in the GWMP Update, such as the previously proposed River Discharge Program (discharging into San Benito River), employing tile drains for local groundwater management, and desalination of wastewater. The cumulatively considerable impacts that would have resulted from GWMP Update elements that are not part of the currently proposed Program are no longer relevant and are not considered further. The conclusions in the SBCWD 2003 PEIR with respect to cumulative impacts for land use, hydrology and water quality, biological resources, geology and seismicity, cultural resources, transportation, air quality, utilities and service systems, visual resources, and public services that would result from the GWMP Update elements, and that the proposed Program currently includes, remain valid and were relied upon in preparing this PEIR.

SBCWD concluded that transportation, hazardous materials, noise, and visual impacts resulting from implementation of the GWMP Update would not substantially contribute to cumulative impacts and were not cumulatively considerable (SBCWD 2003:203). SBCWD also found that conformance with City and County general plan policies, regulations, and conditions of approval by cumulative urban development projects in combination with Program mitigation measures would reduce potentially significant cumulative geology and seismicity hazards, air quality impacts, and cultural resources impacts to levels that would not result in cumulatively considerable contributions to significant cumulative impacts (SBCWD 2003:203).

The cumulative impact analysis and conclusions from the SBCWD 2003 PEIR on the GWMP Update are summarized below for the significant and unavoidable cumulative impacts.

- **Land Use:** Construction of the cumulative urban development projects would result in the loss of open space and agricultural land. The GWMP Update Program elements would contribute to a loss of agricultural land. Although many of the Program elements would have a relatively small footprint and/or would be located in already urbanized areas, some of the elements could require large areas of land. For example, evaporation ponds for drying concentrate from water demineralization could require up to 300 acres. Pipeline construction could cause temporary disturbance of adjacent land uses, primarily inconveniencing motorists at road crossings. Construction of this Program element could disrupt agricultural production within a construction area for up to two cropping seasons, depending on the time of construction, but pipeline operation would not preclude agricultural production. The loss of agricultural land, particularly prime farmland, resulting from the GWMP Update Program elements and the related cumulative urban development projects was considered to be a significant and unavoidable cumulative impact (SBCWD 2003:198).

  Hydrology and Water Quality: Construction of the cumulative urban development projects would result in significant short-term cumulative soil erosion, sedimentation, and construction-related contamination of surface water runoff. Reactivation of currently inactive sand and gravel quarries along the San Benito River and Tres Pinos Creek could contribute sediment to waterways during summer (Table 19 “Pending and Approved Cumulative Projects” on page 196 of the SBCWD 2003 PEIR). The urban development cumulative projects would also increase impermeable surfaces, thereby reducing surface infiltration, decreasing groundwater recharge from natural streams, and altering natural drainages by redirecting stormwater flows.

Development within the 100-year flood plain could result in changes in flood elevations and blockage of flood flows. The GWMP Update included Program mitigation measures that would reduce the project's contribution to cumulative flooding and construction-related water quality impacts to a less-than-significant level (SBCWD 2003:198).

Biological Resources: The cumulative urban development projects would result in the disturbance of natural vegetation and wildlife habitats in the GWMP Update project area and vicinity. Construction of the GWMP Update Program elements would contribute significantly to the cumulative impacts, with significant and unavoidable impacts to wetlands and special-status species using the wetland habitats from groundwater pumping. Potential impacts would include loss of riparian vegetation and stream function as wildlife and fishery habitat, loss of special-status species and their habitat, and sedimentation of the channels outside of the construction area. Some of the cumulative urban development projects could also impact riparian and/or wetland habitat, as well as special-status species that use those habitats. Construction of the cumulative projects would disturb raptor nests. Construction activities could also affect special-status species that inhabit annual grassland habitat, such as San Joaquin kit fox and burrowing owl (SBCWD 2003:199).

The individual projects included as part of the cumulative urban development projects have or would be subject to environmental review, and mitigation for impacts to biological resources would be required as a part of the permit approval process. SBCWD identified Program mitigation measures that would reduce potential impacts to raptors, San Joaquin kit fox, and burrowing owl from construction activities. However, SBCWD concluded that GWMP Update impacts to wetlands and riparian habitats and indirect impacts to special-status species using those habitats would nonetheless be a cumulatively considerable contribution to a cumulatively significant impact and, therefore, would have a significant and unavoidable cumulative impact on these biological resources (SBCWD 2003:200).

4.3 CUMULATIVE IMPACT ANALYSIS

4.3.1 GEOGRAPHIC SCOPE OF PROPOSED PROGRAM EFFECTS

The State CEQA Guidelines state that lead agencies "should define the geographic scope of the area affected by the cumulative effect" (Section 15130[b][3]). The geographic scope of the area affected by the proposed project is as follows for each of the resource issue areas addressed in this PEIR:

- Geology, Soils, and Mineral Resources—local (ground disturbance sites);
- Water Resources—local (drainage systems affected by ground disturbance sites and water supply facilities, including production wells) and regional (entire study area including the Pacheco Creek and San Benito River watersheds);
- Biological Resources—local (ground disturbance sites and hydrologically modified sites) and regional (Pacheco Creek and San Benito River watersheds);
- Land Use and Agriculture—local (ground disturbance sites) and regional (entire study area, farmland conversion);
- Cultural and Historic Resources—local (ground disturbance sites) with regional implications;
- Paleontological Resources—local (ground disturbance sites);
- Population, Employment, and Housing—local (Hollister Urban Area) and regional (entire study area);
- Utilities and Public Services—local service areas;

- Hazards and Hazardous Materials—local (ground disturbance sites);
- Transportation and Traffic—local roadways and regional transportation network;
- Air Quality and Global Climate Change—regional (entire study area), North Central Coast Air Basin (NCCAB);
- Noise—local (immediate vicinity of construction sites);
- Recreational Resources—local (ground disturbance sites); and
- Visual Resources—local (vicinity of ground disturbance sites) with regional implications.

4.3.2 LIST OF RELATED PROJECTS

The list of past, present, and probable future projects used for this cumulative analysis includes projects that are planned to occur in the HUA, the area served and most affected by the proposed Program. For the purposes of this PEIR discussion, the projects that may have a cumulative effect on the resource issue areas in the study area are referred to as the "related projects." The related probable future residential projects are listed in Table 4-1, and the related probable future commercial and industrial projects are listed in Table 4-2. The analysis of cumulative environmental impacts associated with the proposed Program addresses the potential incremental impacts of the proposed Program in combination with these related probable future projects in the context of each resource issue area's "environmental setting" section in Chapter 3, "Environmental Setting, Impacts, and Mitigation." The related probable future projects listed in Tables 4-1 and 4-2 are not intended to be an all-inclusive list of projects in the region, but rather an identification of known probable future projects approved or planned in the HUA that would have environmental impacts, especially construction-related impacts, similar to the proposed Program.

Table 4-1
Probable Future Residential Projects in the Hollister Urban Area

Map Number	Project Name	Total Units	Units Remaining to be Constructed	Approval Needed	Housing Type
2	Walnut Park 13	42	42	Pending tentative map	Market SFD[(a)]
3	Eden West	55	55	Tentative map	Market SFD
4	Hillock Ranch	108	41	Building permit	Market SFD
6	Las Brisas 7	23	3	Building permit	Market SFD
6	Las Brisas 8	23	14	Building permit	Market SFD
7	Palmtag Subdivision	10	2	Building permit	Market SFD
8	Walnut Park 8A	31	5	Building permit	Market SFD
8	Walnut Park 8B	27	21	Building permit	Market SFD
10	Vista Meadows Senior Apartment	72	72	Pending building permit	Low income
11	Annoti (Miller Ferriera) Senior Project	166	166	Final map	Market SFD
12	Intravia Duplex	2	2	Site and architectural review	Duplex[(b)]
13	Hillview Subdivision	25	25	Building permit	Affordable SFD
14	Westside Apartments	11	11	Pending building permit	Affordable rental

Table 4-1
Probable Future Residential Projects in the Hollister Urban Area

Map Number	Project Name	Total Units	Units Remaining to be Constructed	Approval Needed	Housing Type
15	Brigantino	14	6	Building permit	Market SFD
16	West of Fairview	667	667	Final map	100 affordable apartments 60 duettes 507 market SFD
17	Valles	74	74	Site and architectural review	Apartments Mixed use[c]
18	Thorning (Probable future request for 124 dwelling units)	74	74	Tentative map/site and architectural review	10 row houses[d] 60 mixed use and apartments
19	Cerrato Estates (Probable future request for 269 dwelling units)	95	95	Tentative map	Small lots, apartments, or condominiums
20	KT Orchard Park	91	91	Tentative map	Small lots
22	Ladd Lane (Probable future request for 37 dwelling units)	54	54	Tentative map/site and architectural review	Market SFD and apartments
23	Rajkovich	175	175	Tentative map/site and architectural review	100 affordable apartments 75 Market SFD
24	Brigantino (Probable future request for 64 dwelling units)	85	85	Tentative map	Market SFD
25	Skywalk	8	8	Tentative map	Market SFD
26	Pacific West Properties	65	65	Site and architectural review	Affordable apartments

Notes:
[a] Market SFD = single-family dwelling unit for sale at market value
[b] Duplex = two single-family residential dwelling units, located on separate pieces of property but sharing a common wall
[c] Mixed use = combination of residential dwelling units and office or commercial
[d] Row houses = more than two single-family residential dwelling units, located on separate pieces of property, sharing a common wall
Source: City of Hollister March 2010

Table 4-2 Probable Future Commercial and Industrial Projects in the Hollister Urban Area						
Project	Applicant	Property Location	Application Date	Parcel Size by Acre	Building Type	Status
S&A 2006-3	Robert Enz	1900 Aerostar Way	01/17/06	3.62	10,800 square-foot industrial building	Building permit pending
S&A 2007-1/CUP-2007-1	Carlisle Office Park	2440 Bert Drive	01/16/07	1.5	Two 2,400 square-foot, two 4,046 square-foot, and one 5,056 square-foot office buildings	Three buildings constructed
S&A 2007-1 Ext	Nadar, Inc.	1699 Airline Highway	2/12/07	0.38	4,039 square-foot addition to a commercial building	Building permit pending
S&A 2008-12	Long Reach	Ladd Lane	6/18/08	2.5	12,410 square-foot medical office	Approved 10/30/08
S&A 2008-11	Marriott	Gateway Drive, Lot 3	6/17/08	1.48	88-room hotel	Approved 2/09
S&A 2009-4	Bolsa Lab	Lana Way	5/18/2009	1	2,007 square-foot lab building	Approved 6/24/09
S&A 2010-3	Minh Jet	Skylane Drive	4/10	0.28	9,696 square-foot hanger One 1,030 square-foot building One 600 square-foot building	
Source: City of Hollister March 2010						

Because the proposed Program would cover a large area, be implemented in a phased approach incrementally over a relatively long period of time (through 2023), and directly influence and be influenced by regional development activities, the plan approach was used to evaluate cumulative impacts on a regional scale. The regional cumulative analysis area covers the incorporated City and unincorporated areas of the County. The analysis included an evaluation of the current *City of Hollister General Plan* and *San Benito General Plan*. A summary of the cumulative planning environment in the City and County that was used for the regional cumulative impact analysis is provided below.

CITY OF HOLLISTER GENERAL PLAN

The following goals and policies of the *City of Hollister General Plan* Housing Element (November 2009) are applicable to the proposed Program:

GOAL H1: Work together to build a sense of community and achieve housing goals.

- **Policy H1.4: Timing of Housing and Infrastructure.** Continue to support the timing of new housing with needed infrastructure improvements.

MEASURE U (CITY OF HOLLISTER MUNICIPAL CODE TITLE 16, CHAPTER 16.64, SECTION 16.64.010)

In 2002, municipal voters approved the Measure U Growth Management initiative. Measure U is intended to (City of Hollister 2009:3.158):

- encourage a rate of residential growth within the City that will not exceed the City's ability to provide adequate and efficient public services, including sewer, water, police, fire, streets, parks, general administration, and maintenance of public facilities, or the ability of the local economy, including the City's financial capacity, to support such growth, maintain and improve the quality of the environment considering the City's natural setting, including water courses, viable agricultural/open lands, recreational, historic, and scenic areas;
- encourage and promote a balanced community with adequate housing to meet the needs of local employment and residents;
- encourage the construction of an appropriate share of the regional need for housing;
- encourage and promote housing programs and activities to enable the City to meet the needs of all economic segments of the community, including the provision of adequate levels of rental housing; and
- provide and maintain a sound economic base for the City.

Under Measure U, the City is able to award allocations of 254 building permits per year, of which 40 units must be reserved for affordable housing. Measure U expires in January 2012, and the City Council will determine whether a growth management program is warranted before the expiration of Measure U.

MEASURE Y

Municipal voters approved Measure Y in November 2008, amending Measure U to exempt residential development projects in the 148.5-acre downtown area of Hollister from the growth management initiative. The approved residential exemption area encompasses all of the Downtown Commercial Mixed Use zoning district and lands in the Neighborhood Mixed Use zoning district located east and south of downtown.

SAN BENITO COUNTY GENERAL PLAN

The following goals and policies of the *San Benito County General Plan* Housing Element (2010) are applicable to the proposed Program:

GOAL: Development of Housing. To promote the provision of adequate housing for all persons in the County including those with special housing needs and to emphasize the basic human need for housing as shelter.

- **Policy 2O.** The County shall assist where possible with the removal of infrastructure constraints for the provision of wastewater and water service.

GROWTH MANAGEMENT SYSTEM (SAN BENITO COUNTY ORDINANCE TITLE 21, CHAPTER 21.07, SECTION 16.64.010)

The San Benito County implements a growth management system that is intended to:

- encourage a rate of growth which will not exceed the County's ability to satisfy future demands for such essential services as police and fire protection, roads, schools, water, and sewers;

- preserve San Benito County's rural character, open space, historic, and scenic areas and low density of population, and to grow at an orderly and deliberate pace;
- preserve and protect viable agricultural lands;
- encourage the assignment of an appropriate share of the regional need for housing, provide housing for all segments of the community, and encourage a balance between the supply of local housing and the supply of local employment opportunities;
- encourage a balance in the economy of the County, recognizing that the cost of residential development needs to be offset by the revenue from commercial and industrial development.

The annual allocation of residential building permits in the unincorporated County is based on dividing the allowable population increase by the County's average household size, using the most recent California Department of Finance statistics. The resulting quotient establishes the maximum number of building permits for dwelling units that can be authorized during the fiscal year, unless additional building permits are authorized by the County Planning Commission. The County Planning and Building Department biannually prepares and presents a report on the status of the growth management system to the County Planning Commission and the Board of Supervisors.

4.3.3 PROGRAM IMPACTS WITHOUT CUMULATIVELY CONSIDERABLE CONTRIBUTIONS TO SIGNIFICANT CUMULATIVE IMPACTS

For the following resource issue areas, the proposed Program is not expected to make a cumulatively considerable incremental contribution to a cumulatively significant impact because: 1) the impact of the proposed Program would not be additive to the effects of other related projects; 2) the contribution of the proposed Program to any potential cumulative impact would be very minor and would not be considered "cumulatively considerable"; or 3) the overall cumulative impact on the resource issue area, when including impacts of the proposed Program, would not be cumulatively significant.

- **Cultural and Historic Resources:** Cultural and historic resources in the **s**tudy area and surrounding region generally provide evidence of early Native American occupation as well as buildings and structures associated with late 19th and early 20th century residential, commercial, and transportation activities. Particularly from the latter half of the 20th century to the present, cultural sites and historic buildings and structures have been destroyed, disturbed, and modified. Because of a growing awareness of this cultural loss, the creation and enforcement of various regulations protecting cultural and historic resources have substantially reduced the rate and intensity of these impacts. However, even with regulations such as CEQA, cultural resources are still degraded or destroyed as cumulative development in the region proceeds.

  Research indicates that the study area and surrounding region contain a number of cultural and historic resources. As-yet undiscovered cultural and historic resources are likely to be present in the study area. Mitigation measures proposed for cultural and historic resources would reduce the potential impacts on prehistoric and historic-era resources and human interments to less-than-significant levels. In most cases, impacts to cultural and historic resources could be avoided completely, or removed or recovered, with implementation of the proposed mitigation. These measures would ensure compliance with State CEQA Guidelines CCR Section 15064.5 and related provisions of the Public Resources Code. For these reasons, the proposed Program would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on cultural and historic resources. There is a cumulatively significant impact on cultural and historic resources now and which will continue into the future, but the proposed Program would not result in a cumulatively considerable incremental contribution.

- **Paleontological Resources:** Fossil discoveries resulting from excavation and earth-moving activities associated with development are occurring with increasing frequency throughout the state. The value or importance of different fossil groups varies, depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Unique, scientifically important fossil discoveries are relatively rare, and the likelihood of encountering them would be site-specific and based on the type of specific geologic rock formations found underground. These geologic formations vary from location to location. Therefore, a site-specific analysis would be required to determine whether the proposed Program, or any of the related projects, would be constructed at sites that might contain a source of unique paleontological resources.

  Portions of the study area are underlain by the Pleistocene San Benito Formation. Because of the large number of fossils that have been recovered from the San Benito Formation throughout the County, it is considered a paleontologically sensitive rock unit, suggesting a potential for uncovering additional similar fossil remains during construction-related earth-moving activities in this rock formation at a proposed Program site. Proposed mitigation measures would reduce potential Program impacts on previously undiscovered paleontological resources to less-than-significant levels. If unique, scientifically important fossils were encountered by construction activities, the subsequent opportunities for data collection and study generally would provide a benefit to the scientific community. Therefore, because of: the site-specific nature of unique paleontological resources; the low probability that any Program element or project would encounter unique, scientifically important fossils; and the benefits that would occur from recovery and further study of those fossils if encountered, development of the proposed Program, related projects, and other development in the region would not result in a cumulatively considerable impact related to paleontological resources. For these reasons, the proposed Program would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on paleontological resources. There is no cumulatively significant impact on paleontological resources now or expected in the future, nor is there a cumulatively considerable incremental contribution from the proposed Program.

- **Population, Employment, and Housing:** Implementation of the proposed Program would generate a temporary increase in construction employment and subsequent construction worker housing demand in the City and County. The existing residents in local cities and neighboring counties who are currently employed in the construction industry would be sufficient to meet demand associated with the proposed Program; therefore, this temporary increase in employment would not be expected to generate any substantial or lasting population growth in the area nor generate the need for substantial additional housing. Implementation of the proposed Program would not displace existing housing or residents. Construction of the Program elements would occur within the footprints of existing facilities, on vacant land, or within existing roadways and associated rights-of-way. The proposed Program would meet the needs of planned growth only and would not directly induce growth beyond levels already considered in the City and County general plans. Future probable projects (identified in Tables 4-1 and 4-2) would be approved only if they were consistent with the City and County general plans. For these reasons, the proposed Program would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on population, employment, and housing. There is no cumulatively significant impact on population, employment, and housing as probable future projects are expected to be consistent with City and County general plans, nor is there a cumulatively considerable incremental contribution from the proposed Program.

- **Utilities and Public Services:** Potential impacts from the proposed Program on utilities and public services would be temporary in nature. Any utilities and public services that might be inadvertently disrupted by the proposed Program would be restored to pre-Program conditions quickly with proposed mitigation. Although numerous Program elements are associated with the proposed Program, proposed Program elements would be spread out through 2023, thereby reducing the overlap of constructing Program elements simultaneously and with other related projects. The proposed Program and related projects might have some temporary construction overlap, but likely not both geographically and temporally. Therefore, the proposed Program

impacts would not be a cumulatively considerable incremental contribution because of this geographical and temporal disconnect. Furthermore, with the incorporation of mitigation measures, potential impacts would be highly localized and contained to the smallest geographical area possible. For these reasons, the proposed Program would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on utilities and public services. There is no cumulatively significant impact on utilities and public services now or expected in the future, nor is there a cumulatively considerable incremental contribution from the proposed Program.

- **Hazards and Hazardous Materials:** Mitigation would be implemented to minimize the potential for exposure of people or the environment to hazards and hazardous materials encountered during proposed Program construction and Program element operations. Potential impacts would be associated with spills of hazardous materials; exposure to hazardous materials to schools, construction workers, and the general public; interference with emergency evacuation; and hazards in the vicinity of an airport or airstrip. In each of these cases, any Program-related effects would be highly localized and would not be expected to be additive to any similar effects from related projects. The probability of related projects having similar hazardous events simultaneously with hazardous events at proposed Program sites would be remote and speculative. Furthermore, the proposed Program implements mitigation that would minimize impacts to less than significant. For these reasons, the proposed Program would not result in a cumulatively considerable incremental contribution to any cumulatively significant hazards and hazardous materials impact that could occur in the future.

- **Transportation and Traffic:** The transportation and traffic impacts associated with the proposed Program would be temporary and short-term in nature. Any transportation facilities, including roads, bicycle pathways, and pedestrian walkways, disrupted by proposed Program construction would be restored to pre-Program conditions after construction. Although numerous Program elements are associated with the proposed Program, proposed Program elements would be spread out through 2023, thereby reducing the potential overlap of constructing Program elements from occurring simultaneously with other related projects. The Program phasing would keep impacts localized and contained to the smallest geographical area possible. With the incorporation of transportation and traffic mitigation measures, the project proponent would determine access routes that would minimize adverse affects to circulation patterns if construction of related projects would occur in close proximity to any Program element. For these reasons, the proposed Program would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on transportation and traffic. There would likely be cumulatively significant impacts on transportation and traffic when considering past, present, and probable future projects, but the proposed Program would not result in a cumulatively considerable incremental contribution.

- **Recreational Resources:** Impacts to recreational resources from the proposed Program would be less than significant, temporary, and short-term in nature, and might not occur at all, depending on Program element siting. All recreation facilities, including parks and bicycle pathways, would be restored to pre-Program conditions if adversely affected. Ridgemark Golf Course would only receive water from the proposed Program at acceptable salt content levels. No known significant cumulative impact on recreational resources in the study area has occurred or would be expected in the future, when considering past, present, and probable future projects. For these reasons, the proposed Program would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on recreational resources. There could be cumulatively significant impacts on recreational resources from probable future projects, but there would not be a cumulatively considerable incremental contribution from the proposed Program.

- **Visual Resources:** Construction activities associated with the Program elements would be site-specific and of relatively short duration. Moreover, the elements would be constructed during discrete and relatively short time periods over a relatively long timeframe (through 2023) for the proposed Program. Although numerous Program elements are associated with the proposed Program, proposed Program elements would be spread out through 2023, thereby reducing the potential overlap of simultaneous Program element construction with

other related projects. The proposed Program and related projects might have some temporary construction overlaps, but likely not both temporally and geographically. Furthermore, mitigation measures have been proposed that would minimize construction-related impacts to visual resources.

The long-term presence of Program elements in the landscape during proposed Program operations, however, would potentially contrast with adjacent uses, thereby negatively altering scenic resources and the existing visual character of the study area. The extent of potential effects on scenic views and existing visual character from permanent structures cannot be determined without specific information concerning each facility's location and design. Moreover, there would likely be impacts to visual resources from related projects. To mitigate the visual impact of new structures introduced into the landscape from the proposed Program, the project proponent would locate and design Program elements in a manner that would enhance their visual integration into existing environs, when feasible. Design elements might include but would not be limited to the painting of structural facades to blend with surrounding land uses, or implementing appropriate landscaping and design to minimize visual impacts. Implementing proposed mitigation would reduce these operations-related potential impacts to less than significant because the mitigation would preserve scenic resources. For these reasons, the proposed Program would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on visual resources. There is a significant cumulative impact on visual resources now and expected to continue in the future, but the proposed Program would not result in a cumulatively considerable incremental contribution.

4.3.4 PROGRAM IMPACTS WITH CUMULATIVELY CONSIDERABLE CONTRIBUTIONS TO SIGNIFICANT CUMULATIVE IMPACTS

For the following resource issue areas, the proposed Program is expected to make a cumulatively considerable incremental contribution to a cumulatively significant impact. Although impact analyses were conducted at a program-level of detail, substantial evidence shows that there would be cumulatively considerable contributions to significant cumulative impacts on the resource issue areas in this section. Additional project-level analyses in subsequent project-level CEQA documents would provide additional information to evaluate these cumulative effects at a more precise level of detail. This PEIR has disclosed these significant cumulative impacts early in the planning and design process of Program elements to the extent that alternative sites, designs, and mitigation can be investigated to determine if these impacts can be feasibly avoided, minimized, reduced, or compensated for to reduce the incremental contribution of the proposed Program and Program elements thereof to a "less-than-considerable" level. At this time, however, based on the substantial evidence provided in this PEIR, these resource areas listed below would result in cumulatively considerable contributions to significant cumulative impacts.

- **Geology, Soils, and Mineral Resources:** The proposed Program and the related projects would be located within the Coast Range Geomorphic Province, between the Diablo Range to the east and Gabilan Range to the west. The geologic formations and soil types would vary, depending on project location, and therefore would be site-specific. The study area is a seismically active area with known faults that could result in surface fault rupture and strong seismic ground shaking. In addition, the study area is underlain by expansive soils and might be subject to liquefaction and unstable soils that could damage roads and building foundations. Proposed mitigation measures would reduce these impacts to less-than-significant levels through completion of site-specific geotechnical studies and implementation of construction and design measures developed in response to the studies, in addition to compliance with the California Building Standards Code. Furthermore, each Program element or project considered in this cumulative analysis would individually meet building code requirements as well as the requirements of local policies (i.e., grading and erosion control plans). For these reasons, the proposed Program would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on geology and soils resources. There is no cumulatively significant impact on geology and soils now or expected in the future, nor is there a cumulatively considerable incremental contribution from the proposed Program.

The presence of mineral resources is dependent on the type of geologic formation, which would vary from location to location and, therefore, be site-specific. Some of the related projects might be located in areas that would contain sources of aggregate materials. The southern portion of the study area is classified by the California Division of Mines and Geology (CDMG) as a regionally important mineral resource sector containing construction aggregate. Urban development throughout the region has used significant amounts of construction aggregate to the point that aggregate material is in short supply. The cumulative residential and commercial projects would require construction aggregates. If marketable construction aggregate is located on a Program element site, implementation of the Program could remove the mineral resource from production. Because there is an existing shortage of construction aggregate and the cumulative projects would require aggregate, the loss of the ability to mine construction aggregate as a result of the proposed Program would be a considerable contribution to a cumulatively significant shortage of mineral resources.

- **Water Resources:** Existing statewide water supply reliability concerns include the County and the HUA. As a result of a 3-year drought, over-commitments of Central Valley Project (CVP) supplies, and supply limitations imposed by environmental, regulatory, and legal constraints in the Delta, the reliability of imported CVP supplies has been reduced. Reclamation utilizes a Shortage Policy to allocate supplies in below-normal, dry, and critically dry years. In a single critically dry year, the M&I supplies may be reduced to 50% of the contract amount, and in multiple dry years, the M&I supplies may be reduced to approximately 30% of the contract amount (HDR 2008:2-10). Given these circumstances, it is concluded that there would be a future potentially significant cumulative impact to local and regional water supplies primarily because of reliability constraints, especially if the proposed Program is not implemented.

  The proposed Program would implement a phased plan, however, that would include the use of existing imported CVP surface and groundwater supplies, additional imported surface water, and groundwater from demineralization of select urban wells and the proposed North County Groundwater Bank. In the event that CVP water supplies are reduced or other imported surface water supplies are limited, the North County Groundwater Bank and/or urban wells would be capable of meeting the water demands of the HUA. The MOU Parties, by working together to develop and implement the proposed Program, would be solving the water supply and availability needs in a coordinated fashion to reduce the potential for future significant cumulative impacts within their service areas. The proposed Program would meet water demands in the HUA through 2023, and this impact would be considered less than significant. The proposed Program would not exacerbate, but would reduce the potential effect on local and regional water supplies and availability. For these reasons, the proposed Program would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on water supply and availability, but would actually contribute to minimizing potential impacts.

  Construction of Program elements could interfere with drainage systems and alter surface drainage. Program design would incorporate measures to prevent a significant drainage disruption or alteration in runoff patterns, and any effects would be limited to the immediate vicinity of a Program site. Hydrology and water quality could be adversely affected during construction of Program elements. However, proposed mitigation measures would substantially reduce construction-related impacts to less-than-significant levels, and these impacts would be extremely localized. Furthermore, the proposed Program has numerous Program elements designed to improve water quality, one of the objectives of the proposed Program, which would provide a benefit. The effects of related projects on hydrology and water quality during construction would depend largely on project design and mitigation. Probable future projects would be implemented in the study area during implementation of the proposed Program, resulting in potential cumulative construction-related water quality impacts relating to the use of potential contaminants during construction, and potential for erosion and sedimentation related to soil disturbances. However, the proposed Program and related projects would need to comply with the state NPDES general stormwater construction permit and/or would have to acquire appropriate regulatory approvals to minimize water quality impacts during construction. Current water quality regulations and the mitigation suggested for the proposed Program would ensure that the proposed Program

would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on hydrology and water quality during construction.

Both the Demineralization of Urban Wells and the North County Groundwater Bank Program elements have potential operational impacts on groundwater quality. The Demineralization of Urban Wells Program element, including evaporation ponds and brackish wetlands, could impact surface and groundwater quality. Deep well injection of concentrated brine could impact groundwater quality if the well was not constructed properly and monitored. Additionally, ocean discharge of brine waste would be a potential alternative for brine waste and would have the potential to adversely affect water quality in the vicinity of the outfall location. The North County Groundwater Bank Program element, if not properly designed and operated, could induce movement of poorer quality groundwater into higher quality groundwater areas.

Past and ongoing agricultural use, importation of CVP supplies, and other activities have caused a degradation of water quality in portions of the groundwater subbasin and in surface water in the study area that is considered a significant cumulative impact. Elements of the proposed Program could interact in a cumulative manner with historical and ongoing impacts to groundwater and surface water quality with both beneficial and adverse effects, particularly with respect to salinity, depending on how Program elements are implemented. For these reasons, the proposed Program would potentially result in a cumulatively considerable incremental contribution to a cumulatively significant impact on surface and/or groundwater quality from Program operations.

- **Biological Resources:** Agricultural and urban development in the County, beginning more than 100 years ago, has converted substantial amounts of native habitat to other uses. Although the proposed Program and future related projects would be expected to mitigate impacts on threatened and endangered species and other biological resources that are provided regulatory protections, many types of habitats and species are provided with minimal protection, and it could be expected that a net loss of native lands, agricultural lands, and open space areas that provide value to biological resources would continue. Past and present projects alone have led to a significant cumulative impact on local and regional biological resources, especially to coastal steelhead trout and sensitive habitats such as riparian habitat.

  The proposed Program would result in potentially significant and unavoidable impacts related to the potential take of special-status species, resulting from project construction and operation of the North County Groundwater Bank. These impacts would be additive with thebiological resources impacts of past, present, and future residential, commercial, and industrial projects. Taken with the cumulative projects, the proposed Program’s impact on biological resources would be a considerable incremental contribution to a significant cumulative impact on steelhead trout, riparian habitats, and riparian-dependent species.

- **Land Use and Agriculture:** The study area has already experienced the conversion of agricultural land, much of it Prime Farmland and other categories of Important Farmland, to residential and commercial development, primarily in the City. Approximately 50% of the undeveloped land in the HUA is classified Prime Farmland and other categories of Important Farmland. No land has been designated for agriculture use in the HUA, in an attempt to remove development pressure on the surrounding agricultural fields in the County. Therefore, significant losses of Important Farmland to urban development are expected to continue in the HUA in the hope that Important Farmland is preserved in the rest of the County. These losses in the HUA would continue an overall trend of net loss of Important Farmland that has been documented in the County and across the state. Based on only past and present projects, there is a cumulatively significant impact on land use and especially on agriculture land uses.

  Implementation of several Program elements, particularly the New Surface WTP, Demineralization of Urban Wells, potential evaporation ponds, storage tanks, and the North County Groundwater Bank could convert Prime Farmland and Farmland of Statewide Importance to nonagricultural uses. Although, to the extent feasible, the proposed mitigation measures would be incorporated into the proposed Program design to avoid

locating facilities in Prime Farmland and Farmland of Statewide Importance, some areas could be converted to nonagricultural uses as a result of implementation of the proposed Program.

As discussed above for "Biological Resources," some amount of currently natural lands would become available for agricultural production again. It would be speculative to state that eventually the amount of productive farmland reclaimed would be less, the same, or greater than the amount of farmland converted for proposed Program facilities. Given the speculative nature of the amount of productive farmland that could be reclaimed, a net adverse impact from the footprints of Program elements on agricultural lands must be presumed. Proposed mitigation measures would reduce the proposed Program's contributions to this cumulative impact, but not to a less-than-significant level. Even if operation of the North County Groundwater Bank were to eventually make more land available to agriculture than the amount converted for facilities, a temporal loss of farmland would remain. For these reasons, the proposed Program would result in a cumulatively considerable incremental contribution to a cumulatively significant impact on Important Farmland.

- **Air Quality and Global Climate Change:** Past development in the NCCAB, combined with meteorological conditions, has resulted in significant cumulative impacts on air quality. The NCCAB is in nonattainment status for ozone and small particulate matter (less than 10 and 2.5 microns in diameter, or PM_{10} or $PM_{2.5}$ respectively). Implementation of the proposed Program would not result in cumulatively significant air quality impacts or global warming on its own, but the proposed Program would directly contribute to air quality impacts and greenhouse gas (GHG) emissions during construction and operations, and indirectly through the urban development that would be accommodated by the availability of agricultural, municipal, and industrial water supplies and water reclamation capabilities.

  No major nonpermitted sources of emissions from toxic air contaminant (TACs) are proposed. Given that compliance with applicable rules and regulations would be required for the control of stationary-source emissions of TACs both on-site and off-site and during construction and operations, the contribution of the proposed Program to long-term cumulative increases in stationary-source TAC concentrations would not be considerable. Exposure to TAC emissions, specifically diesel exhaust PM, could occur and be cumulatively considerable if pumps, generators, and backup generators used diesel fuel for some percentage of the time annually, well into the future after completion of the proposed Program. With implementation of the proposed mitigation measures, however, this contribution to TAC emissions would be reduced to a less-than-significant impact because electric pumps and reverse osmosis demineralization would result in less TAC emissions than with use of diesel-powered pumps and chemical water treatment. The resulting contribution to air quality emissions would not be a cumulatively considerable incremental contribution to a cumulatively significant air quality impact.

  The proposed project would upgrade the existing Ridgemark Wastewater Treatment Plant and increase capacity of the City's Water Reclamation Facility. These Program elements would not affect odor source controls at these facilities. No odor complaints have been filed. There is no existing cumulative odor impact. Because no change in the levels of odors would occur, there would be no considerable incremental contribution to a cumulatively significant impact on odors.

  GHG emissions such as carbon dioxide emissions result from the use of combustion engines (from construction activities), and from indirect energy production and consumption (e.g., needed for pumps, treatment processes such as demineralization, and facility heating/cooling/lighting). GHG emissions would directly and indirectly contribute to global warming; these emissions would be cumulative and removal would be relatively irreversible on a timescale of 100 years or more. Any contribution of GHG emissions to the cumulative global climate change problem would be considerable. Mitigation is currently not available because the technology required would relate to obtaining energy for proposed Program construction and operation from completely renewable energy sources such as solar, wind, and hydroelectric power. Consequently, no feasible mitigation measures are available that would reduce the magnitude of these

cumulative effects to less-than-significant levels. For these reasons, the proposed Program would result in a cumulatively considerable incremental contribution to a cumulatively significant impact on GHG emissions and global climate change from Program construction and operations.

- **Noise:** Noise from any stationary noise sources associated with Program elements could be controlled at the source (e.g., noise walls, enclosures) through design and proposed mitigation measures. The facilities and operations associated with the proposed Program would not be the types of facilities and operations that would create substantial noise. It is expected that these operations-related noise impacts would be minor with implementation of proposed mitigation. Other past, present, and future probable projects would also generate noise. In many cases, these related projects could create substantially more noise than the proposed Program and would result in a cumulatively significant noise impact, such as noise associated with residential development and increased population. However, the proposed Program, for reasons discussed above, would not result in a cumulatively considerable incremental contribution to a cumulatively significant impact on noise during operation of Program elements.

  Construction noise and stationary-source noise could be controlled on-site at the point of origin; however, traffic noise might extend beyond a Program site along roadways, resulting in significant traffic noise impacts on sensitive receptors. Traffic noise related to proposed Program operations, however, would be less than significant and relatively minor. Few additional employees would be necessary to maintain proposed Program facilities. There would likely be imperceptible increases in traffic-related noise from proposed Program operations. Therefore, the proposed Program would not result in a cumulatively considerable incremental contribution to a cumulatively significant noise impact from traffic-related increases during operation of Program elements.

  Construction activities from Program elements could result in potentially significant noise impacts, including construction traffic noise along study area roadways. The combined cumulative increase in construction-related traffic on nearby roadways would extend the 60-dBA noise contour distances for these roadway segments, potentially causing additional sensitive receptors to fall within this contour. Recommended mitigation would minimize noise effects, but the Program elements would still result in various degrees of noise effects, depending largely on facility siting and haul routes with respect to sensitive noise receptors. Noise impacts especially from temporary and short-term construction activities and related traffic increases would occur and could be significant when sensitive receptors come within close proximity to construction areas or if site restrictions at some sensitive receptors reduced the effectiveness of proposed mitigation measures. Additionally, other probable future projects would be constructed or emanate noise in the study area and potentially in the vicinity of construction of Program elements. Furthermore, probable future projects in the study area would likely generate types of noise similar to those associated with construction of Program elements, and these would have the potential to substantially impact nearby sensitive receptors in a cumulative manner. It would be considered infeasible to sufficiently reduce noise at every existing and proposed sensitive receptor that might be affected. For these reasons, the proposed Program would potentially result in a cumulatively considerable incremental contribution to a cumulatively significant noise impact during construction of Program elements.

This page intentionally left blank.

5 PROGRAM ALTERNATIVES

5.1 ALTERNATIVES DEVELOPMENT

5.1.1 CEQA REQUIREMENTS

Section 15126.6[a] of the State CEQA Guidelines, as amended, requires that an EIR: (1) describe a range of reasonable alternatives to a proposed Program, or to the location of the Program, that would feasibly attain most of the basic Program purpose but would avoid or substantially lessen any of the significant effects of the Program; and (2) evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a proposed Program but must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.

The range of alternatives required to be evaluated in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The EIR needs to examine in detail only those alternatives that the lead agency determines could feasibly attain most of the basic Program purpose, taking into account factors that include site suitability; economic viability; availability of infrastructure; general plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (State CEQA Guidelines Section 15126.6[f]). CEQA does not require the alternatives to be evaluated at the same level of detail as the proposed Program.

The State CEQA Guidelines recommend that an EIR should briefly describe the rationale for selecting the alternatives to be discussed, identify any alternatives that were considered by the lead agency but were rejected as infeasible, and briefly explain the reasons underlying the lead agency's determination (State CEQA Guidelines Section 15126.6[c]).

An EIR must also evaluate a "No Program" alternative, which represents "what would be reasonably expected to occur in the foreseeable future if the Program were not approved, based on current plans and consistent with available infrastructure and community services." (State CEQA Guidelines Section 15126.6[e][2]).

5.1.2 ALTERNATIVES DEVELOPMENT AND SCREENING

The Program purpose and objectives are described in Chapter 1. To develop the best plan to achieve the purpose and objectives, a comprehensive alternatives development and screening process was completed for the 2008 Hollister Urban Area Water and Wastewater Master Plan (Master Plan) and the 2010 Coordinated Water Supply and Treatment Plan (Coordinated Plan). That process resulted in a wide range of concepts and specific alternatives to meet the Program purpose and objectives. The proposed Program includes elements from each of the overall concepts that were developed and evaluated.

The additional analyses completed as part of this PEIR further refine previously developed concepts and alternatives to achieve consistency with CEQA requirements. These PEIR alternatives generally conform to the concepts and alternatives presented in the Master Plan and Coordinated Plan. However, some have been modified as needed to reduce or eliminate significant and unavoidable environmental impacts of the proposed Program identified through this environmental review.

The major changes from the concepts and alternatives presented in the Master Plan and Coordinated Plan are as follows:

- Alternative 1—Increase imported surface water. This does not include a groundwater demineralization element.

- Alternative 2—Utilize local surface water supply. This does not include additional urban wells or a groundwater demineralization element.
- Alternative 3—Demineralize urban wells. No significant changes.
- Alternative 4—Utilize of water from high groundwater basins. This does not include additional urban wells or a groundwater demineralization element.

The key features and elements of the proposed Program and the alternatives are summarized in Table 5-1. The proposed Program and each of the alternatives incorporate nonstructural solutions including water conservation, salinity education, a water softener ordinance, and other measures. The proposed Program is described in Chapter 2. The following sections of this chapter describe each alternative, the extent to which they meet the Program purpose, and their relative environmental effects. The ability of each alternative to meet the Program purpose is summarized in Table 5-2. Table 5-3 summarizes the significance levels of impacts that would occur with implementation of the proposed Program, and Table 5-4 summarizes the comparative environmental effects of the alternatives.

5.1.3 ALTERNATIVES CONSIDERED BUT REJECTED

As part of alternative development and screening, a number of alternatives were considered but rejected as being infeasible. During completion of the Master Plan, several preliminary studies were completed to better define the range of feasible alternatives. A preliminary alternatives screening was also completed as part of the Master Plan. The following subsections briefly describe alternatives considered but rejected and the rationale for that determination.

DEMINERALIZE RECYCLED WATER

An analysis was conducted to determine whether demineralization should be provided for the drinking water supply, recycled water produced by wastewater treatment, or both. Selection of the recommended demineralization strategy was based on the lowest overall life cycle cost and a comparison of relative advantages and disadvantages. Groundwater demineralization for the drinking water supply was the recommended alternative primarily because it provides the greatest overall benefits as higher quality drinking water is provided to consumers. Therefore, demineralizing the recycled water following wastewater treatment was eliminated from further consideration.

CENTRALIZED LIME SOFTENING

An analysis was completed to compare demineralization versus lime softening for groundwater treatment. The cost analysis indicated that both softening and demineralization of the groundwater supply are essentially equal with regard to life cycle cost. However, demineralization would produce higher quality drinking water and it does not require centralized water treatment facilities. Given these advantages and the ability to be implemented incrementally, demineralization was the recommended alternative for total dissolved solids (TDS) and hardness removal. Therefore, centralized lime softening was eliminated from further consideration.

Table 5-1
Hollister Urban Area Water and Wastewater Master Plan and Coordinated Plan Proposed Program and Alternatives

Alternative Designation	Alternative Name	Alternative Emphasis	Elements/Projects[a]															
			Water Supply				Water Treatment and Distribution				Wastewater Treatment				Recycled Water			
			Additional Imported Surface Water	Local Surface Water	Additional Urban Groundwater	Water from High Groundwater Basins	Lessalt Water Treatment Plant Upgrades	New Surface Water Treatment Plant	Groundwater Demineralization	New Pipeline to Ridgemark	Treated Water Storage Reservoirs	Expand City Water Reclamation Facility	SSCWD Wastewater Treatment Facility	Connect Cielo Vista Estates to City WRF	Phase 1 Facilities	Phase 2A Facilities	Phase 2B Facilities[b]	SSCWD Ridgemark Facilities
—	Proposed Program	Conjunctive Use of Surface Water and Groundwater	●	●[c]	●	●	●	●	●	●	●	●	●	●	●	●	●	●
—	No Program	Existing Conditions Plus Reasonably Foreseeable Projects			●		●			●	●	●	●	●	●	●		●
1	Increase Imported Surface Water	Imported Surface Water Supply	●				●	●		●	●	●	●	●	●	●		●
2	Utilize Local Surface Water Supply	Local Surface Water from Seasonal Streams		●			●	●		●	●	●	●	●	●	●		●
3	Demineralize Urban Wells	Demineralization of Groundwater			●		●		●	●	●	●	●	●	●	●	●	●
4	Utilize Water from High Groundwater Basins	Water from Local High Groundwater Basins				●	●	●		●	●	●	●	●	●	●		●

Notes: SSCWD = Sunnyslope County Water District; WRF = Water Reclamation Facility.

[a] Proposed Program and all alternatives incorporate Nonstructural Solutions including, Water Conservation, Salinity Education, Water Softener Ordinance, and other measures.

[b] Phase 2B recycled water facilities would be implemented if both water quality and supply reliability is achieved.

[c] Under the Proposed Program, local surface supplies in the North County would be operated in conjunction with the proposed North County Groundwater Bank.

Table 5-2 Ability of Program Alternatives to Meet Program Purpose.			
Alternative Designation	Alternative Description	Purpose	
		Improve Water Quality	Provide Reliable Water Supply
—	Proposed Program	Yes	Yes
—	No Program	No	No
1	Increase Imported Surface Water	Partial	No
2	Utilize Local Surface Water Supply	Yes	No
3	Demineralize Urban Wells	Yes	Partial
4	Utilize Water from High Groundwater Basins	Partial	Partial
Source: Compiled by AECOM in 2010			

Table 5-3 Summary of Program Impact Levels before and after Mitigation		
Environmental Issue Area	Before Mitigation	After Mitigation
Geology, Soils, and Mineral Resources	Potentially Significant	Significant (unavoidable)
Water Resources	Potentially Significant	Significant (unavoidable)
Biological Resources	Potentially Significant	Significant (unavoidable)
Land Use and Agriculture	Potentially Significant	Significant (unavoidable)
Cultural and Historical Resources	Potentially Significant	Less than Significant
Paleontological Resources	Potentially Significant	Less than Significant
Population, Employment, and Housing	Less than Significant	—
Utilities and Public Services	Potentially Significant	Less than Significant
Hazards and Hazardous Materials	Potentially Significant	Less than Significant
Transportation and Circulation	Potentially Significant	Less than Significant
Air Quality and Global Climate Change	Potentially Significant	Significant (unavoidable)
Noise	Potentially Significant	Significant (unavoidable)
Recreation	Less than Significant	—
Visual Resources	Potentially Significant	Less than Significant
Source: Compiled by AECOM in 2010		

Table 5-4 Comparison of Impacts Between the Proposed Program and Alternatives					
Environmental Resource Area	Alternatives				
	No Program	Increase Imported Surface Water	Utilize Local Surface Water Supplies	Demineralize Urban Wells	Utilize Water from High Groundwater Basins
Geology, Soils, and Mineral Resources	**Lesser**	Similar	Similar	Similar	Similar
Water Resources	**Lesser**	**Lesser**[(a)]	**Lesser**	Similar	Similar
Biological Resources	**Lesser**	**Lesser**	Similar	**Lesser**	Similar
Land Use and Agriculture	**Lesser**	Similar	Similar	Similar	Similar
Cultural and Historic Resources	Similar	Similar	Similar	Similar	Similar
Paleontological Resources	Similar	Similar	Similar	Similar	Similar
Population, Employment, and Housing	Similar	Similar	Similar	Similar	Similar
Utilities and Public Services	Similar	Similar	Similar	Similar	Similar
Hazards and hazardous materials	Similar	Similar	Similar	Similar	Similar
Transportation and Circulation	**Lesser**	Similar	Similar	Similar	Similar
Air Quality and Global Climate Change	**Lesser**	Similar	Similar	Similar	Similar
Noise	**Lesser**	Similar	Similar	Similar	Similar
Recreation	Similar	Similar	Similar	Similar	Similar
Visual Resources	Similar	Similar	Similar	Similar	Similar

Note: For each environmental resource area, the alternative is compared with the proposed Program based on the level of severity of impacts (greater, similar, and lesser).
[(a)]Alternative 1 avoids impacts on surface and groundwater resources relative to the proposed Program by not implementing demineralization and North County Groundwater Bank. However, it could have greater impacts on groundwater quality and groundwater levels relative to the proposed Program because it imports additional water (and salt) to the basin.
Source: Compiled by AECOM in 2010

RETIRE AGRICULTURAL LAND

This alternative would involve fallowing agricultural land and converting Central Valley Project (CVP) water from agricultural to municipal supply. Any such reallocation would be subject to approval of the SBCWD Board of Directors. The local economy is based on agriculture, and any land fallowing would have a detrimental effect on the local economy. Therefore, fallowing agricultural lands to free up CVP water for municipal supply is not economically feasible and was eliminated from further consideration.

UTILIZE LOCAL RESERVOIRS

This alternative involves using two existing reservoirs (Hernandez and Paicines) that collect and store local runoff and a third existing reservoir (San Justo) used for storing imported CVP supplies. Hernandez Reservoir is located 43 miles south of the Hollister Urban Area (HUA) and Paicines Reservoir is located 8 miles south of the HUA. The local runoff stored in these reservoirs is already used by SBCWD for groundwater percolation along the San Benito River. Due to the lack of additional supply and the location of these reservoirs, use of these facilities was eliminated from further consideration.

RECLAIM QUARRIES FOR STORAGE

Reclaiming sand and gravel extraction quarries for use as storage facilities is a storage option. According to the Groundwater Management Plan Update, the quarries may not be available for approximately 100 years. Because there are no anticipated TDS benefits associated with this alternative if local supplies were to be stored, this alternative is not considered further.

IN-BASIN AQUIFER STORAGE AND RECOVERY

Aquifer Storage and Recovery (ASR) facilities are specially designed wells that operate as both injection and extraction wells. Using ASR would require treatment of the source waters, injection into a groundwater basin, and extraction. Demineralization and disinfection of the extracted water is required prior to distribution if the injected waters blend with lower quality water during storage. ASR requires construction of treatment facilities prior to injection to avoid any degradation of the groundwater basin. ASR is significantly more complex and costly than the existing passive percolation sites currently used by SBCWD. The complexity, high energy requirements, and costs resulted in eliminating ASR from further consideration.

NEW OFF-STREAM STORAGE

Several potential sites have been identified for an off-stream dam and reservoir in previous studies. Water from local seasonal streams, imported CVP supplies, or a combination of those supplies could be stored in a new off-stream storage reservoir. The institutional constraints (implementation risk) associated with developing a new dam and reservoir eliminate this alternative from further consideration. These constraints may include high costs which cannot be phased, extensive environmental and other permitting requirements, and risk of delays associated with public concerns over building new dams.

5.2 NO PROGRAM

CEQA Guidelines Section 15126.6(e)(2) requires that the No Program Alternative represent existing conditions at the time the NOP is published as modified with what would be reasonably expected to occur in the foreseeable future if the Program were not approved, based on current plans. For this PEIR, the No Program Alternative assumes that the facilities generally defined by the Base Case in the Master Plan and Coordinated Plan would continue to be implemented. As described in Chapter 2, several of these projects have undergone separate environmental review.

5.2.1 DESCRIPTION

This alternative represents current operating conditions under which the MOU Parties would continue forward with only their existing facilities, projects currently in progress, and projects that reasonably could be expected to occur in the foreseeable future, independently of each other.

Existing facilities under current operating conditions include all existing water, wastewater, and recycled water facilities. These are the existing groundwater wells, the Lessalt Water Treatment Plant (WTP), the City's four storage reservoirs and SSCWD's three reservoirs, two pressure-reducing, pressure-sustaining stations in the City and seven in SSCWD, and the existing water transmission and distribution systems. The existing wastewater facilities include collection systems, wastewater treatment plants, and respective disposal facilities. Existing recycled water facilities include the Phase 1 facilities providing recycled water from the City Water Reclamation Facility (WRF) to Riverside Park and the Hollister Municipal Airport.

The following projects are currently in progress:

- **Upgrade of Lessalt WTP**. The Lessalt WTP was originally designed to treat 3 million gallons per day (mgd) of imported CVP water, using microfiltration and chlorine disinfection. The plant has been unable to achieve its design capacity because of hydraulic constraints and issues related to the Stage 2 Disinfectant/Disinfection Byproducts Rule. Hydraulic and process improvements are to be completed, allowing the Lessalt WTP to operate at its rated capacity of 3 mgd and meet regulatory requirements. A notice of exemption was filed for this project on March 12, 2010, because it was determined that the project was categorically exempt from CEQA.

- **New Pipeline to Ridgemark**. To provide improved drinking water and high quality wastewater effluent, a portion of the supply from the Lessalt WTP would be conveyed to Ridgemark. As described in Chapter 2, this would be a 4,000-foot-long pipeline installed in an existing right-of-way. A notice of exemption was filed for this project on March 12, 2010 because it was determined that the project was categorically exempt from CEQA.

- **SSCWD Wastewater Treatment Plant (WWTP) Upgrades**. As previously described in Chapter 2, SSCWD plans to consolidate and upgrade its existing wastewater treatment facilities to comply with waste discharge requirements Order R3-2004-0065, issued by the Regional Water Quality Control Board, and be able to provide recycled water. The EIR for this project was certified in July 2009. SSCWD also evaluated the option to connect to the City WRF but elected to retain a separate wastewater treatment plant.

In addition to the existing facilities and the projects that are currently in progress, additional projects can reasonably be expected to occur between now and 2023, including:

- **Development of New Wells**. As the City of Hollister and San Benito County grow as anticipated in their respective general plans, wells would likely be drilled to provide additional water supply to support new development. These wells would be constructed by the City and SSCWD.

- **Expansion of City WRF**. To meet currently planned growth, additional wastewater treatment capacity would also be required. To meet this need, the City's WRF facility would likely be expanded as previously planned in the Long-Term Wastewater Management Plan (City of Hollister 2007). The WRF was constructed with an initial capacity of 4 mgd. However, it was designed for an ultimate capacity of 8 mgd. The first increment of expansion to 5 mgd is projected to occur by 2020. The expansion to 5 mgd was evaluated at a program-level in the 2006 EIR for the project (City of Hollister 2006)

- **Connect Cielo Vista Estates to City WRF**. Between 2015 and 2023, the wastewater treatment facilities at Cielo Vista Estates would be decommissioned and flows would be conveyed to the City WRF.

- **Ridgemark Recycled Water**. The upgraded Ridgemark WWTP would be capable of producing high quality effluent that would meet California Title 22 requirements. The recycled water facilities would provide irrigation water for the Ridgemark Golf Course for irrigation.

- **Installation of New Water Distribution and Wastewater Collection Infrastructure**. As development occurs in the study area, new water distribution pipelines and treated water storage reservoirs, as well as wastewater collection system pipelines, are likely to be installed. These facilities would be constructed by the City and SSCWD.

- **Phase 2A Recycled Water Facilities**. The draft Recycled Water Feasibility Study Update included an implementation plan to have the Phase 2A recycled water facilities in operation in 2015. Even if the TDS goal of 500–700 milligrams per liter (mg/L) for recycled water is not reached by 2015, opportunities exist for blending that could maintain the schedule for the Phase 2A Recycled Water Facilities.

5.2.2 ABILITY TO MEET PROGRAM PURPOSE

As indicated in Table 5-2, the No Program Alternative does not improve water quality or provide a reliable water supply. The No Program Alternative relies exclusively on new urban groundwater wells to meet the growth in water demands of the HUA. There would be no demineralization of existing or new urban wells. Imported CVP water from the existing Reclamation contract would provide supply to the upgraded Lessalt WTP.

As a result, drinking water quality TDS and hardness would not be improved and would actually deteriorate due to the higher percentage of groundwater supply provided in the future. Consequently, the TDS of recycled water would not improve and would require blending for urban and agricultural irrigation. Supply reliability would be reduced due to more intensive pumping of urban groundwater which would lead to localized overdraft. Existing imported CVP supplies would remain unreliable due to Delta pumping restrictions and droughts.

5.2.3 COMPARATIVE ENVIRONMENTAL EFFECTS

Table 5-4 compares the significance level of the No Program Alternative with the proposed Program for all of the environmental resource areas. Implementation of the No Program Alternative would reduce the following significant environmental effects of the proposed Program to a less-than-significant level:

- Removal of Important Mineral Resources from Potential Production.
- Degradation of surface and groundwater during operations of the demineralization and North County Groundwater Bank Program elements.
- Reduction of Aquatic, Riparian, and Wetland Habitat Functions and Values from Operations of the North County Groundwater Bank
- Conversion of Important Farmland to nonagricultural uses.

Proposed Program facilities would not be located on important mineral resources, thereby allowing future mining opportunities. Impacts to surface and groundwater would be reduced to less than significant because the No Program Alternative would not include demineralization or groundwater pumping in the North County Groundwater Bank area. Impacts to the aquatic, riparian, and wetland habitat functions and values would be less than significant because no additional groundwater pumping would be conducted in the North County Groundwater Bank that would cause hydrologic changes. Important farmland would not be converted to nonagricultural uses because no new WTP would be constructed and demineralization would not be implemented. Greenhouse gas emissions and contributions to global climate change and generation of short-term construction noise would be reduced, although not to a less-than-significant level.

As indicated in Table 5-2, however, the No Program Alternative does not improve water quality or provide a reliable water supply; therefore, it does not meet the Program purpose or any of the objectives. Drinking water quality TDS and hardness would not be improved and would actually deteriorate due to the higher percentage of groundwater supply provided in the future. Consequently, the TDS of recycled water would not improve and would require blending for urban and agricultural irrigation. Supply reliability would be reduced due to more intensive pumping of urban groundwater which would lead to localized overdraft. Existing imported CVP supplies would remain unreliable due to Delta pumping restrictions and droughts.

5.3 ALTERNATIVE 1—INCREASE IMPORTED SURFACE WATER

5.3.1 DESCRIPTION

As indicated in Table 5-1, the emphasis of this alternative would be imported surface water supply.

WATER SUPPLY

This alternative requires a long-term transfer or purchase of additional imported CVP or SWP supply. A significant quantity of new supply would be needed to augment the existing supplies on an annual average basis to meet MOU goals for TDS and hardness.

The water could be stored (banked) outside the County and made available during times of reduced CVP deliveries. The water could be banked in the Semitropic Water Bank, the Kern Water Bank, or an equivalent basin managed for this purpose.

Due to the current and likely future uncertainties associated with the statewide water system, especially the Delta, exclusive reliance on imported supplies has significant risk. This alternative would provide a measureable benefit to delivered water quality but would import more salt to the basin which would contribute to degradation of groundwater quality. The proposed Program includes demineralization along with increased imports which removes salt from the basin. Greater use of imports under this alternative would also exacerbate high groundwater problems in the study area.

WATER TREATMENT AND DISTRIBUTION

Additional surface water treatment capacity would be required for this alternative. This additional capacity would be provided by the Lessalt WTP and a new water treatment plant. No groundwater demineralization would be provided with this alternative. New treated water pipelines and storage reservoirs would be constructed by the City and SSCWD.

WASTEWATER TREATMENT

The City WRF would be expanded to 5 mgd by about 2020 as planned in the LTWMP. The SSCWD Ridgemark wastewater treatment facilities would be consolidated into a single upgraded treatment plant. Between 2015 and 2023, the wastewater treatment facilities at Cielo Vista Estates would be decommissioned and flows would be conveyed to the City WRF. New collection system and interceptor pipelines and pump stations would be constructed by the City and SSCWD.

RECYCLED WATER

The existing Phase 1 recycled water facilities would be extended through implementation of Phases 2A and 2B. The Phase 1 facilities completed in 2009 provide recycled water from the City WRF to Riverside Park and the Hollister Municipal Airport. The Phase 2A facilities would extend the Phase 1 pipeline along the Wright/McClosky Road corridor to Fairview Road. Subject to further studies and market assessment, recycled water could be provided for agricultural irrigation along this corridor.

The SSCWD Ridgemark recycled water facilities would provide irrigation supply for the Ridgemark Golf Course. Depending upon the availability of recycled water from the Ridgemark WWTP, these facilities would be expanded to other areas for urban irrigation.

5.3.2 ABILITY TO MEET PROGRAM PURPOSE

As indicated in Table 5-2, Alternative 1—Increase Imported Surface Water partially improves water quality but does not provide a reliable water supply. Alternative 1 would increase the use of imported surface water supplies to meet the growth in water demands in the HUA. There would be no additional wells constructed and no demineralization of existing wells. A second surface water treatment plant would be constructed along with upgrades to the existing Lessalt WTP.

Drinking water quality TDS and hardness would be improved due to more use of imported surface water. The quality of recycled water would also improve allowing use for urban and agricultural irrigation. Due to the variations in annual availability of imported surface water, improvements in water quality would not consistently meet the MOU goals.

Supply reliability would not be improved due to greater reliance on imported surface water supplies. Without local storage, these imported surface water supplies are unreliable due to Delta pumping restrictions and droughts.

5.3.3 COMPARATIVE ENVIRONMENTAL EFFECTS

Like the No Program Alternative, Alternative 1 would not implement demineralization or the North County Groundwater Bank. Implementation of Alternative 1 would involve the construction of a new WTP. Because demineralization would not be included, the potentially significant impact from the degradation of surface and groundwater due to brine disposal would be avoided, as would potential degradation of groundwater due to operation of the North County Groundwater Bank. However, this alternative would import additional salt into the basin which would contribute to the degradation of groundwater quality. Importing additional water could also exacerbate existing high groundwater conditions. Impacts to the aquatic, riparian, and wetland habitat functions and values would be less than significant because no groundwater pumping would be conducted in the North County Groundwater Bank area that would cause hydrologic changes. Note that while pumping from the Delta contributes to impacts to aquatic species in the Delta, this analysis assumes that this alternative would not cause additional adverse impacts to Delta aquatic species. Regardless of whether SBCWD seeks long-term transfers or purchases of additional imported water through this Program, the amount of water exported from the Delta would not change. Statewide demands for CVP and SWP water exceed available supply. The CVP and SWP export as much water as possible given hydrologic conditions, capacity, and regulatory restrictions in the Delta each year. Consequently, Alternative 1 would not increase Delta exports, but would seek an additional portion of CVP or SWP water that is already exported.

Because the WTP could be located on existing farmland, conversion of Important Farmland to nonagricultural could occur and the resulting impact would remain significant and unavoidable. In addition, this alternative would involve construction and operation of new facilities that could be located on important mineral resources. Greenhouse gas emissions and contributions to global climate change and generation of short-term construction noise would be reduced, but not to a less-than-significant level. With the exception of water resources, Table 5-4 shows that impacts under Alternative 1 would be similar to but less than the proposed Program. This alternative reduces some impacts to water resources from the proposed Program, but would cause other impacts by increasing salt imported to the basin and exacerbating high groundwater conditions in portions of the study area.

5.3.4 SUMMARY

Alternative 1 does not satisfy the Program purpose because it only partially improves delivered water quality but does not provide reliable water supply. Alternative 1 would reduce significant and unavoidable impacts on surface and groundwater quality and aquatic, riparian, and wetland habitats relative to the proposed Program by eliminating demineralization and the North County Groundwater Bank. However, it would cause other potential impacts to groundwater quality and groundwater levels by importing additional water (and salt) into the basin.

Significant impacts could occur on important mineral resources and Important Farmland and the alternative would generate greenhouse gas emissions and construction noise.

5.4 ALTERNATIVE 2—UTILIZE LOCAL SURFACE WATER SUPPLIES

5.4.1 DESCRIPTION

As indicated in Table 5-1, the emphasis of this alternative is local surface water from seasonal streams.

WATER SUPPLY

Capturing intermittent stream flows within the County would contribute additional high quality water supplies to the Hollister Urban Area. These local seasonal supplies include Arroyo Dos Picachos, Arroyo De Las Viboros, and Pacheco Creek. The supplies could be developed using seasonal diversion dams (e.g., inflatable dams or rehabilitation of existing structures) along with earthwork to create a small impoundment upstream of the diversion structure. In-stream collectors (e.g., Ranney collector wells or infiltration galleries) are not likely feasible due to unfavorable creek bed conditions.

Stored water could be conveyed to treatment facilities through the Hollister Conduit. Conveying water during winter would be feasible when flows in the Hollister Conduit are low due to reduced irrigation demands. Water conveyed through the Hollister Conduit could also be stored in San Justo Reservoir.

WATER TREATMENT AND DISTRIBUTION

Additional surface water treatment capacity would be required for this alternative. This additional capacity would be provided by the Lessalt WTP and a new water treatment plant. No groundwater demineralization would be provided with this alternative.

New treated water pipelines and storage reservoirs would be constructed by the City and SSCWD.

WASTEWATER TREATMENT

The City WRF would be expanded to 5 mgd by about 2020 as planned in the LTWMP. The SSCWD Ridgemark wastewater treatment facilities would be consolidated into a single upgraded treatment plant. Between 2015 and 2023, the wastewater treatment facilities at Cielo Vista Estates would be decommissioned and flows would be conveyed to the City WRF. New collection system and interceptor pipelines and pump stations would be constructed by the City and SSCWD.

RECYCLED WATER

The existing Phase 1 recycled water facilities would be extended through implementation of Phases 2A and 2B. The Phase 1 facilities completed in 2009 provide recycled water from the City WRF to Riverside Park and the Hollister Municipal Airport. The Phase 2A facilities would extend the Phase 1 pipeline along the Wright/McClosky Road corridor to Fairview Road. Subject to further studies and market assessment, recycled water could be provided for agricultural irrigation along this corridor.

The SSCWD Ridgemark recycled water facilities would provide irrigation supply for the Ridgemark Golf Course. Depending upon the availability of recycled water from the Ridgemark WWTP, these facilities would be expanded to other areas for urban irrigation.

5.4.2 ABILITY TO MEET PROGRAM PURPOSE

As indicated in Table 5-2, Alternative 2—Utilize Local Surface Water Supply, partially improves water quality and water supply reliability.

Alternative 2 involves the use of local seasonal surface water supplies to meet the growth in water demands of the HUA. There are no new urban wells or demineralization of existing or new wells. Local seasonal supplies would be treated at the Lessalt WTP and a new surface water treatment plant. Current CVP supplies would also continue to be treated at these plants. Without additional local storage, seasonal supplies would be used during winter and existing CVP supplies would be used during summer.

Drinking water quality TDS and hardness would be improved due to the use of more surface water supply. The quality of recycled water would also improve allowing the use for urban and agricultural irrigation. Due to the seasonal availability and potential annual variations in local surface water supplies, improvements in water quality would not consistently meet the MOU goals.

Supply reliability would not be improved due to the annual variability with local surface water supplies. Without additional local storage, these supplies are not reliable due to variations in the timing and quantity of annual runoff.

5.4.3 COMPARATIVE ENVIRONMENTAL EFFECTS

Like the No Program Alternative and Alternative 1, Alternative 2 would not implement demineralization or the North County Groundwater Bank. Like Alternative 1, Alternative 2 would involve the construction of a new WTP. For the reasons given for Alternative 1, degradation of surface and groundwater and impacts to habitat functions and values would be avoided but impacts on important mineral resources and conversion of Important Farmland could occur. Construction and operation of Alternative 2 would result in significant and unavoidable impacts resulting from greenhouse gas emissions and generation of short-term construction noise. Like Alternative 1, impacts under Alternative 2 would be similar to but less than the proposed Program (Table 5-4). Among all the alternatives, however, diverting surface water seasonally from Arroyo Dos Picachos, Arroyo De Las Viboros, and Pacheco Creek would have the greatest potential for significant effects on steelhead trout.

5.4.4 SUMMARY

Alternative 2 does not satisfy the Program purpose and objectives. Unlike Alternative 1, Alternative 2 would improve water quality but would not provide reliable water supply. While the Alternative would reduce significant and unavoidable impacts on surface and groundwater quality and habitat functions and values to a less-than-significant level, significant impacts could occur from restrictions on important minerals extraction, Important Farmland conversion, greenhouse gas emissions, and construction noise. Diverting surface water seasonally from Arroyo Dos Picachos, Arroyo De Las Viboros, and Pacheco Creek would have the greatest potential for significant effects on steelhead trout.

5.5 ALTERNATIVE 3—DEMINERALIZE URBAN WELLS

5.5.1 DESCRIPTION

As indicated in Table 5-1, the emphasis of this alternative is demineralization of urban groundwater.

WATER SUPPLY

Urban groundwater would be demineralized to meet the MOU goals for TDS and hardness. The resulting high quality demineralized water would be blended with untreated groundwater and CVP supplies in the water distribution system.

Demineralization is an energy-intensive treatment process. Combining solar energy with demineralization facilities would provide a cost-effective and sustainable power source.

Brine concentrate management is typically the most challenging aspect of a demineralization project. Concentrate management strategies consist of two distinct components: (1) concentration of the brine stream, and (2) salt disposal. Concentration options include evaporation ponds and advanced concentration. Salt disposal options include disposal at a landfill, disposal through an ocean outfall, and deep-well injection.

An innovative option for the HUA would include wetland and greenbelt habitat brine management. The wetlands and greenbelt habitat could be constructed along the San Benito River and integrated with the River Parkway Project being developed by the County.

Groundwater demineralization provides a high quality water supply and a method of removing salt from the basin. High costs, energy requirements, and brine disposal issues must be addressed for implementation.

WATER TREATMENT

The principal treatment for this alternative is demineralization using reverse osmosis. Centralized treatment or individual wellhead treatment could be utilized. Upgrades to the Lessalt WTP would also be included with this alternative to treat existing CVP supplies. New treated water pipelines and storage reservoirs would be constructed by the City and SSCWD.

WASTEWATER TREATMENT

The City WRF would be expanded to 5 mgd by about 2020 as planned in the LTWMP. The SSCWD Ridgemark wastewater treatment facilities would be consolidated into a single upgraded treatment plant. Between 2015 and 2023, the wastewater treatment facilities at Cielo Vista Estates would be decommissioned and flows would be conveyed to the City WRF. New collection system and interceptor pipelines and pump stations would be constructed by the City and SSCWD.

RECYCLED WATER

The existing Phase 1 recycled water facilities would be extended through implementation of Phases 2A and 2B. The Phase 1 facilities completed in 2009 provide recycled water from the City WRF to Riverside Park and the Hollister Municipal Airport. The Phase 2A facilities would extend the Phase 1 pipeline along the Wright/McClosky Road corridor to Fairview Road. Subject to further studies and market assessment, recycled water could be provided for agricultural irrigation along this corridor. The Phase 2B facilities would further extend recycled water delivery capabilities to the Lone Tree area, Santa Ana Valley, east of Fairview, San Juan Valley, or other areas.

The SSCWD Ridgemark recycled water facilities would provide irrigation supply for the Ridgemark Golf Course. Depending upon the availability of recycled water from the Ridgemark WWTP, these facilities would be expanded to other areas for urban irrigation.

5.5.2 ABILITY TO MEET PROGRAM PURPOSE

As indicated in Table 5-2, Alternative 3—Demineralize Urban Wells would improve water quality and partially improve water supply reliability.

Alternative 3 involves the demineralization of existing and future urban groundwater to meet the growth in water demands for the HUA. Imported CVP water from the existing Reclamation contract would provide supply to the upgraded Lessalt WTP.

Drinking water quality TDS and hardness would be improved. The quality of recycled water would also improve allowing the use for urban and agricultural irrigation.

Water supply reliability would only be partially improved due to more intensive pumping of urban groundwater, which would lead to localized overdraft. Existing imported CVP supplies would remain unreliable due to Delta pumping restrictions and droughts.

5.5.3 COMPARATIVE ENVIRONMENTAL EFFECTS

Like the proposed Program, Alternative 3 would implement demineralization. However, it would not include construction of a new WTP or the North County Groundwater Bank Program element. Potential impacts to the functions and values of aquatic, riparian, and wetlands habitats and degradation of groundwater quality due to operation of the North County Groundwater Bank would be avoided. Potential loss of important mineral resources due to siting of the new WTP would be avoided, although it is possible other facilities might be sited in areas with important mineral resources. Other impacts of the proposed Program would remain, and increased use of demineralization relative to the proposed Program could cause greater impacts to water resources due to the potential effects of brine disposal. The potential effects of brine disposal are uncertain at this time, but are potentially significant and unavoidable based on brine disposal issues in the region and elsewhere. Brine disposal was the primary reason for finding that the proposed Program would have potentially significant and unavoidable impacts on Water Resources, Land Use and Agriculture, Air Quality and Global Climate Change, and Noise under Alternative 3. Table 5-4 shows that impacts under Alternative 3 for each of the environmental resource areas except biological resources, which would be similar to the proposed Program.

5.5.4 SUMMARY

Alternative 3 does not satisfy the Program Purpose and does not avoid or minimize most of its significant impacts. Alternative 3 improves water quality but only partially provides reliable water supply. It would have potentially significant and unavoidable impacts on important mineral resources, surface and groundwater quality, Important Farmland or reduce greenhouse gas emissions or construction noise.

5.6 ALTERNATIVE 4—UTILIZE WATER FROM HIGH GROUNDWATER BASINS

5.6.1 DESCRIPTION

As indicated in Table 5-1, the emphasis of this alternative would be water from high groundwater basins.

WATER SUPPLY

Some subbasins in the Gilroy-Hollister groundwater basin have high groundwater levels. Using the water from these high groundwater areas would provide additional water supply to benefit municipal customers and reduce impacts to agriculture due to damage caused by high groundwater conditions.

The Bolsa Subbasin, located northwest of the City, has groundwater levels that vary throughout the area. High water levels are found in the northeast and low levels to the south. This area is predominately agricultural and does not receive imported surface water. TDS levels are approximately 600 to 800 mg/L.

The Pacheco Subbasin, located north of the City, also has high water levels and TDS levels of approximately 600 mg/L or lower. Flowing wells have been present along Lovers Lane and Shore Road (Pacheco Subbasin and part of the Bolsa Subbasin east of the Calaveras Fault) since the late 1990s, and poor drainage conditions have posed problems for septic systems. This area receives imported surface water.

As imported CVP water was introduced and used in the San Juan Subbasin, there was continued percolation from wastewater treatment plant effluent and applied water and insufficient pumping of the groundwater to keep groundwater levels below the surface. The soil structure, which includes clay layers existing at 3 to 12 feet below the ground surface, results in poor soil drainage. The San Juan Subbasin, located west of the City, has very high water levels and TDS levels of approximately 1,200 mg/L with some wells with concentrations of 1,500 mg/L.

Since the lowest TDS water from these areas is located in the Bolsa and Pacheco Subbasins, those areas would provide the water supply for this alternative. The water could be conveyed through the Hollister Conduit to existing and new surface water treatment facilities.

WATER TREATMENT AND DISTRIBUTION

Additional surface water treatment capacity would be required for this alternative. This additional capacity would be provided by the Lessalt WTP and a new water treatment plant. No groundwater demineralization would be provided with this alternative. New treated water pipelines and storage tanks would be constructed by the City and SSCWD.

WASTEWATER TREATMENT

The City WRF would be expanded to 5 mgd by about 2020 as planned in the LTWMP. The SSCWD Ridgemark wastewater treatment facilities would be consolidated into a single upgraded treatment plant. Between 2015 and 2023, the wastewater treatment facilities at Cielo Vista Estates would be decommissioned and flows would be conveyed to the City WRF. New collection system and interceptor pipelines and pump stations would be constructed by the City and SSCWD.

RECYCLED WATER

The existing Phase 1 recycled water facilities would be extended through implementation of Phases 2A and 2B. The Phase 1 facilities completed in 2009 provide recycled water from the City WRF to Riverside Park and the Hollister Municipal Airport.

The Phase 2A facilities would extend the Phase 1 pipeline along the Wright/McClosky Road corridor to Fairview Road. Subject to further studies and market assessment, recycled water could be provided for agricultural irrigation along this corridor. The Phase 2B facilities would further extend recycled water delivery capabilities to the Lone Tree area, Santa Ana Valley, east of Fairview, San Juan Valley, or other areas.

The SSCWD Ridgemark recycled water facilities would provide irrigation supply for the Ridgemark Golf Course. Depending upon the availability of recycled water from the Ridgemark WWTP, these facilities would be expanded to other areas for urban irrigation.

5.6.2 ABILITY TO MEET PROGRAM PURPOSE

As indicated in Table 5-2, Alternative 4—Utilize water from High Groundwater Basins partially improves water quality and water supply reliability.

Alternative 4 would make use of water from local subbasins with high groundwater conditions to meet the growth in water demand in the HUA. The water quality of local high groundwater varies substantially and the first priority would be to use supplies from the north County which have lower TDS and hardness. These north County supplies would not require demineralization. Supplies from the north County groundwater could be conveyed in the Hollister Conduit for treatment at the upgraded Lessalt WTP and a new surface water treatment plant. Existing urban wells and imported CVP water from the existing Reclamation contract would continue to be used.

Drinking water quality TDS and hardness would be improved due to the use of higher quality groundwater from the north County. The quality of recycled water would also improve allowing the use for urban and agricultural irrigation. However, due to the limited quantities of high groundwater with good water quality, this alternative would not fully meet the MOU goals.

Supply reliability would also be partially improved. Use of north County groundwater would be operated in conjunction with percolation of seasonal streams to provide a reliable supply with storage in the groundwater basin. However, the quantities available from this supply source would not meet the long-term needs of the HUA.

5.6.3 COMPARATIVE ENVIRONMENTAL EFFECTS

Like the No Program Alternative, Alternative 1, and Alternative 2, Alternative 4 would not implement demineralization. Like Alternative 1 and Alternative 2, Alternative 4 would involve the construction of a new WTP. For the reasons given for the proposed Program, potential degradation of groundwater, and impacts to the functions and values of aquatic, riparian, and wetland habitats, could occur as a result of groundwater pumping in the North County Groundwater Bank area. Impacts on important mineral resources and Important Farmland could result from the new WTP. Construction and operation under this alternative would result in significant and unavoidable impacts resulting from greenhouse gas emissions and generation of short-term construction noise. The environmental impacts of Alternative 4 would be similar to the proposed Program (Table 5-4).

5.6.4 SUMMARY

Alternative 4 does not satisfy the Program purpose and does not substantially avoid the significant impacts of the proposed Program. Alternative 4 partially improves water quality and would only partially provide reliable water supply. Significant impacts could occur with respect to important mineral resources, degradation of groundwater quality, biological resources, Important Farmland conversion, greenhouse gas emissions, and construction noise. The environmental impacts of Alternative 4 would be similar to the proposed Program.

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR must identify the “environmentally superior alternative” among the alternatives evaluated. If the environmentally superior alternative is the No Program Alternative, Section 15126.6(e)(2) of the State CEQA Guidelines, as amended, requires that the EIR identify an environmentally superior alternative among the other alternatives.

The No Program Alternative would be the environmentally superior alternative among the alternatives (see Table 5-4); consequently, CEQA requires another alternative to be selected. Alternatives 1, 2, and 3 all have less but different environmental effects than the Proposed Program or Alternative 4 (see Table 5-4) as described below.

Alternative 1, Increase Imported Surface Water, would import additional water (and with it, salt) into the groundwater basin which could degrade groundwater quality over time. and exacerbate existing high groundwater conditions in portions of the study area. However, it would eliminate significant impacts on aquatic, riparian, and wetland habitats because the North County Groundwater Bank and demineralization would not be implemented. All other alternatives (with the exception of No Program) have potentially significant impacts to biological resources. For this reason, Alternative 1 is the environmentally superior alternative.

Alternative 2, Utilize Local Surface Water Supplies, would divert surface water seasonally from Arroyo Dos Picachos, Arroyo De Las Viboros, and Pacheco Creek, and would have the greatest potential for significant effects on steelhead trout and riparian habitats and species. For this reason, Alternative 2 is not the environmentally superior alternative.

Alternative 3, Demineralize Urban Wells, would reduce some potential impacts on groundwater quality and the functions and values of aquatic, riparian, and wetland habitats because it would not include implementation of the North County Groundwater Bank Program element. However, there are significant environmental impacts associated with brine disposal including potentially significant impacts to water quality and biological resources depending on the brine disposal option selected. For these reasons, Alternative 3 is not the environmentally superior alternative.

Alternative 4, Utilize Water from High Groundwater Basins, would make use of water from local subbasins with high groundwater conditions to meet the growth in water demand in the HUA. The environmental impacts of Alternative 4 would be similar to the proposed Program. Significant impacts could occur with respect to important mineral resources, degradation of groundwater quality, biological resources, Important Farmland conversion, greenhouse gas emissions, and construction noise. For these reasons, Alternative 4 is not the environmentally superior alternative.

This page intentionally left blank.

6 OTHER CEQA-REQUIRED SECTIONS

6.1 GROWTH-INDUCING IMPACT

6.1.1 CEQA REQUIREMENTS

CEQA requires that an EIR evaluate the growth-inducing impacts of a proposed project (Section 21100[b][5]). Growth-inducing impacts are described in Section 15126.2(d) of the State CEQA Guidelines, as amended, as follows:

> [T]he ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth…. Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects…. [In addition,] the characteristics of some projects…may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Direct growth inducement would result if a project, for example, involved the construction of new housing. Indirect growth inducement would result if a project established substantial new permanent employment opportunities that created a demand for additional housing and services, or removed an obstacle to housing development.

Growth inducement itself is not an environmental effect, but it may lead to environmental effects. For example, if substantial growth inducement occurs, it may result in secondary environmental effects, such as increased demand on community and public services and infrastructure, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, or conversion of agricultural and open-space land to urban uses. However, if the induced growth is consistent with or provided for by the adopted land use plans and growth management plans and policies for the area affected (e.g., city and county general plans, specific plans, transportation management plans), those plans may ensure that these impacts are either less than significant or mitigated to a less-than-significant level. Local land use plans provide for land use development patterns and growth policies that encourage orderly urban development supported by adequate urban public services such as water supply, roadway infrastructure, sewer services, and solid waste services. A project that would induce "disorderly" growth (i.e., growth that would conflict with the local land use plans) could indirectly cause additional adverse environmental impacts and other public service impacts.

6.1.2 PROPOSED PROGRAM

It is important to note that San Benito County Water District (SBCWD) is not charged with the responsibility of weighing and balancing the benefits and burdens of growth in the study area, because SBCWD has no authority either to permit development in the study area or to impose conditions on the development that is permitted. SBCWD is a California Special District that was formed by the San Benito County Water Conservation and Flood Control Act that delivers water to agricultural, municipal, and industrial users. SBCWD has no land use planning authority. Its mission is to serve the demand that is generated by land use plans that are adopted by the land use agencies.

Within the study area, development and growth are controlled by the local governments of the City of Hollister (City) and San Benito County (County). Both of these agencies have adopted general plans consistent with state law. These general plans provide an overall framework for growth and development within the jurisdiction of

each agency. Growth and development are also directly affected by local, regional, and national economic conditions.

The proposed Program would incrementally improve the quality and reliability of municipal drinking water, industrial supply, and recycled water for urban and agricultural irrigation users in the Hollister Urban Area (HUA) through the implementation of various new facilities and facilities improvements. The specific objectives are listed in Section 1.3.

Because the proposed Program would not involve the construction of housing, it would not be directly growth-inducing. Construction activities associated with the proposed Program would generate short-term employment, but it is anticipated that the construction jobs would be filled using the existing local employment pool and the proposed Program would not directly result in a population increase. Construction workers serving the proposed Program can be expected to come from the City, the County, and from nearby communities. For many of the Program elements, the extent of construction would be relatively minor and last from approximately 6 months up to 2 years. The existing residents in the City and County who are employed in the construction industry would likely meet the demand for construction workers generated by the proposed Program.

Furthermore, if some construction workers from outside the region were employed for the proposed Program, the temporary nature of the work supports the conclusion that these workers would not typically change residences when assigned to a new construction site. Therefore, substantial permanent relocations of construction workers to the City or County are not anticipated. Implementation of the proposed Program over the Program period of 15 years would not generate the need for substantial additional housing in the City or County because an influx of new residents is not expected. Because of these conditions, the temporary increase in population growth and housing demand associated with construction of the proposed Program would not be growth-inducing.

By providing more reliable and higher quality water supply, the proposed Program would accommodate growth currently planned for undeveloped lands in the HUA. These lands have been identified in the City and County general plans and additional planning policy documents described below as the area most suitable for orderly urban growth in the County to minimize the conversion of farmland and open space. The approximately 9,423-acre HUA area is the largest community in the County with approximately 56% of the County's population (DOF 2010). In 2010, the estimated population of the HUA was 37,301 people occupying 10,610 housing units (DOF 2010). Within the planning horizon of the proposed Program (year 2023), the estimated population is 54,143 in the HUA occupying approximately 17,108 dwelling units (AMBAG 2008: 43).

The environmental consequences of buildout of the City were addressed in the 2005 City of Hollister General Plan EIR (certified in December 2005). While long-term consequences of buildout would be mitigated by measures required for individual development projects, implementation of the City's general plan was found to have significant and unavoidable impacts on traffic circulation, exposure to people and structure to seismic hazards including ground shaking and ground failure, and farmland conversion.

The City is committed to orderly development both in terms of area and time. As evidence, the planning area of the City's 2005 General Plan was approximately 42% smaller than the planning area of the City's 1995 General Plan and added a priority infill area. Under Measure U, the City is able to award allocations of 254 building permits per year of which 40 units must be reserved for affordable housing. Voters approved Measure Y in November 2008, which amends Measure U to exempt from the growth management program residential development projects in the 148.5-acre downtown area of Hollister. The approved residential exemption area encompasses all of the Downtown Commercial Mixed Use zoning district and lands in the Neighborhood Mixed Use zoning district located east and south of downtown Hollister. This approach to planning is intended to reduce development pressure on farmland and ensure that adequate public services are available.

The proposed Program was developed in response to projected growth in the study area, as determined by land use designations and zoning in the City's and County's General Plans. Implementation of the proposed Program

would meet the needs of planned growth only, and it would not directly induce growth beyond levels already specified in the City's and County's General Plans. Program elements would be constructed on an incremental basis over the proposed Program's phased implementation period, thus incrementally increasing the availability of water supplies and water and wastewater collection, conveyance, and treatment facilities to meet the needs of planned growth in the study area.

The proposed Program would remove an impediment to development of residential, commercial, and industrial land uses within the study area. While lack of water supply and water and wastewater collection, conveyance, and treatment facilities is considered a major impediment to growth, other obstacles to new development still exist. New development cannot proceed without also undergoing project-level CEQA review and without the development of other required infrastructure. Because implementation of the proposed Program would meet the needs of planned growth only, it would not directly induce growth beyond levels already considered in the County's and City's General Plans.

6.1.3 MUNICIPAL WASTEWATER SERVICE AREA EXPANSION

The Program includes a non-structural element to require new and existing development to connect to municipal wastewater rather than construct or repair septic systems. Therefore, it is expected that new developments within the HUA would connect to the City's wastewater collection system, with the exception of parcels that would connect to the Ridgemark wastewater collection system (see Figure 2-6 in Chapter 2, "Program Description") or a future satellite wastewater separation plant. Because the HUA boundary extends beyond the City's existing, LAFCO-approved service area, the City would amend its service area boundary, which would trigger local agency formation commission (LAFCO) review.

LAFCOs are intralocal agencies that were created by state legislation to ensure that changes in governmental organization occur in a manner that provides efficient and good-quality services and preserves agricultural and open space land resources. In 1963, the California Legislature established LAFCOs in each county and gave them regulatory authority over local agency boundary changes. In the 1970s, the legislature recognized the connection between decisions concerning governmental organization and the issues of urban sprawl and loss of prime agricultural land. In 2000, the Cortese-Knox-Hertzberg Act was further amended as a result of Assembly Bill 2838.

The general policies of LAFCOs include:

- encourage planned, well-ordered, efficient urban development patterns;
- encourage the logical formation and determination of boundaries;
- ensure that affected populations receive efficient governmental services; and
- guide development away from open space and prime agricultural land uses unless such actions would not promote planned orderly and efficient development.

This PEIR will be used by the City to request LAFCO approval of the Hollister Urban Area as a Wastewater Service Area for outside jurisdiction sewer service. Connection of existing individual lots would require payment of impact fees and abandonment of exiting septic systems. Future development in the service area boundary that would be made possible by implementation of the proposed Program would require a wastewater services agreement, which would act as a binding contract between future developers and the City, and an operations agreement, which would identify the amount of wastewater that would be treated at the City's facilities.

The San Benito County General Plan limits most development in the unincorporated HUA to lot sizes of 1 acre or more because that is the minimum lot size for a septic system. Exceptions are the Rural/Urban land use

designation in the proposed Ridgemark wastewater service area, lands in an Area of Special Study east of Fairview Road, and sites identified in the Housing Element. Through implementation of this Program, the City could provide wastewater service to unincorporated properties in the HUA that would otherwise have constructed septic systems. The availability of wastewater service could be growth-inducing because the replacement of the septic system with a public sewer service would eliminate the need for the minimum lot size of 1 acre and could allow for a higher density of development. Therefore, notwithstanding the current designated general plans and zoning areas, the proposed Program is considered indirectly growth-inducing because allowing new developments within the HUA, but outside the existing service area, to connect to the City's wastewater collection system could result in more growth than anticipated by the Hollister General Plan by allowing for growth at a greater density and intensity than is possible with septic systems.

6.1.4 CONCLUSION

Based on the information presented above, there is substantial evidence that the proposed Program would accommodate planned regional growth in a manner that would be consistent with the City's and County's growth principles. However, the proposed Program includes an element that could result in more growth than currently anticipated by the Hollister General Plan. Therefore, the proposed Program would be growth-inducing.

6.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

The State CEQA Guidelines require a discussion of the significant irreversible environmental changes which would be involved in the proposed Program should it be implemented.

The irreversible environmental changes (irreversible and irretrievable commitment of resources) are defined as the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled, or those that are consumed or reduced to unrecoverable forms. The proposed Program would result in the irreversible and irretrievable commitment of energy and material resources during construction, operation, and maintenance of the Program elements, including the following:

- construction materials, including such resources as rocks, wood, soil, and concrete;
- land area committed to new/expanded proposed Program facilities; and
- energy expended in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for proposed Program construction, operation, and maintenance.

The use of these nonrenewable resources is expected to account for a minimal portion of the region's resources and would not affect the availability of these resources for other needs within the region.

Additionally, implementation of the proposed Program would result in the irreversible and irretrievable loss of agricultural land and could result in an irreversible and irretrievable loss of regionally important mineral resources and archaeological resources, as detailed in Section 3.5, "Agriculture and Land Use," Section 3.1, "Geology, Soils, and Mineral Resources," and Section 3.6, "Cultural and Historic Resources," respectively.

6.3 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

CEQA Section 21100(b)(2)(A) provides that an EIR shall include a detailed statement setting forth "any significant effect on the environment that cannot be avoided if the project is implemented." Chapter 3, "Environmental Setting, Impacts, and Mitigation," provides a detailed analysis of all potentially significant environmental impacts of the project, feasible mitigation measures that could reduce or avoid the project's significant impacts, and whether these mitigation measures would reduce these impacts to less-than-significant levels. If a specific impact cannot be reduced to a less-than-significant level, it is considered a significant and

unavoidable impact. For this PEIR, there are some impacts that are considered to be “potentially significant and unavoidable” because the occurrence and severity of the impact cannot be determined with certainty at this time. For CEQA purposes, a potentially significant and unavoidable impact is treated as if it were a significant and unavoidable impact.

The proposed Program would have the following significant and unavoidable, or potentially significant and unavoidable, environmental impacts:

- potential loss of mineral resources resulting from the construction of Program facilities (direct and cumulative);
- potential degradation of surface and groundwater quality as a result of brine disposal associated with the Demineralization of Urban Wells Program element and potential degradation of groundwater as a result of operation of the North County Groundwater Bank Program element (direct and cumulative);
- potential adverse affects to aquatic, riparian, and wetland habitats and the special-status species that could occupy them as a result of North County Groundwater Bank operations (direct and cumulative);
- conversion of important farmland to non-agricultural uses (direct and cumulative);
- greenhouse gas (GHG) emissions and contributions to global climate change from proposed Program construction and operation (cumulative); and
- generation of temporary and short-term construction noise (direct).

This page intentionally left blank.

7 REPORT PREPARERS AND REVIEWERS

San Benito County Water District (Lead Agency)

Jeff Cattaneo, General Manager ..... PEIR Review
Harry Blohm, Program Manager ..... PEIR Review

City of Hollister (Responsible Agency)

Clint Quilter, City Manager ..... PEIR Review

County of San Benito (Responsible Agency)

Steve Wittry, Public Works Administrator ..... PEIR Review

Sunnyslope County Water District (Responsible Agency)

Bryan Yamaoka, General Manager ..... PEIR Review

AECOM (EIR Preparation)

Phil Dunn ..... Project Director, PEIR Review
Samantha Salvia, P.E. ..... Project Manager, PEIR Review
Francine Dunn ..... Senior CEQA Specialist, PEIR Review
Andrew Bayne ..... Project Coordinator, Misc. CEQA Sections, Land Use, Hazards, PEIR Review
Wendy Copeland ..... Geology, Soils, and Minerals; Paleontological Resources
Kara Baker ..... Water Resources
Leo Edson ..... Biological Resources (Wildlife)
Chris Fitzer ..... Biological Resources (Fisheries)
John Hunter, Ph.D. ..... Biological Resources (Botany)
Jenifer King ..... Water Resources
Ted Daum ..... Water Resources
Marianne Lowenthal ..... Public Health and Hazards
Rudy Calderon ..... Visual Resources
Nick Tomera ..... Transportation, Recreational Resources, Public Utilities and Services,
Matthew Gerken, AICP. ..... Air Quality and Global Climate Change
Whitney Leeman, Ph.D. ..... Air Quality and Global Climate Change
Chris Shields ..... Noise
John Hope, AICP ..... Noise
Brian Ludwig, Ph.D. ..... Cultural and Historic Resources
Christy Seifert ..... Editor
Beth Duffey ..... Editor
Eryn Pimental ..... GIS
Lisa Clement ..... GIS
Gayiety Lane ..... Publishing
Brian Perry ..... Graphics

HDR

Bob Ellis, P.E. ..... PEIR Review
Holly Kennedy, P.E. ..... PEIR Review
Michele Stern, Ph.D.. ..... PEIR Review

This page intentionally left blank.

8 REFERENCES

Chapter 1, "Introduction"

AMBAG. *See* Association of Monterey Bay Area Governments.

Association of Monterey Bay Area Governments. 2008 (June). *Monterey Bay Area 2008 Regional Forecast Population, Housing Unit, and Employment Projections for Monterey, San Benito, and Santa Cruz Counties to the Year 2035*. Available: <http://www.ambag.org/programs/blueprint/forecast/index.html>. Accessed June 23, 2010.

California Department of Finance. 2010 (January). E-5: *City/County Population and Housing Estimates*. Available: <http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E5/E5-06/E-5text2.asp>. Accessed June 17, 2010.

California Department of Water Resources. 2004. *California's Groundwater Bulletin 118, Gilroy-Hollister Valley Groundwater Basin (Hollister Area Subbasin, San Juan Bautista Area Subbasin, and Bolsa Area Subbasin) and Tres Pinos Valley Groundwater Basin*. Last updated February 27, 2004.

City. *See* City of Hollister.

City of Hollister. 2005. *City of Hollister General Plan*. Adopted December 5, 2005. Amended June 18, 2007.

———. 2007. *Long-Term Wastewater Management Plan for the DWTP and IWTP*. Prepared by HydroScience Engineers. December 2005.

City of Hollister, San Benito County, San Benito County Water District, and Sunnyslope County Water District. 2008. *Hollister Urban Area Water and Wastewater Master Plan*. Prepared by HDR. November 2008.

———. 2010. *Hollister Urban Area Master Plan Implementation Program Coordinated Water Supply and Treatment Plan*. Prepared by HDR and RMC Water and Environment. Revised January 2010.

County. *See* San Benito County.

DWR. *See* California Department of Water Resources.

MOU Parties. *See* City of Hollister, San Benito County, San Benito County Water District, and Sunnyslope County Water District.

San Benito County. 1992. *San Benito General Plan*. Hollister, CA.

———. 2005. *San Benito County Regional Recycled Water Project Feasibility Study*. Prepare by RMC.

———. 2010a. *San Benito County Draft Housing Element 2007–2014*. Available: <http://www.san-benito.ca.us/departments/planning/>. Accessed June 16, 2010.

San Benito County Water District Water Resources Association. 2003. *Draft Program Environmental Impact Report, Groundwater Management Plan Update for the San Benito County Portion of the Gilroy-Hollister Valley Groundwater Basin.* Prepared by David J. Powers & Associates, San Jose, CA.

SBCWDWRA. *See* San Benito County Water District Water Resources Association.

Sunnyslope County Water District. 2008. *Final Draft Hollister Area 2008 Urban Water Management Plan*. Prepared by Kennedy/Jenks Consultants. June 2008.

Chapter 2, "Program Description"

City of Hollister. 2007. *Subsequent Environmental Impact Report City of Hollister Reclaimed Water Irrigation Project.* Prepared by Analytical Environmental Services.

GEI Consultants. 2009. *Draft Preliminary Hydrogeological Feasibility Study–North Area*. September 8, 2009.

San Benito County. 2005. *San Benito County Regional Recycled Water Project Feasibility Study*. Prepared by RMC. Updated in 2008.

Sunnyslope County Water District. 2009. *Ridgemark Wastewater Treatment and Recycled Water Improvements Project*.

Chapter 3, "Environmental Setting, Impacts, and Mitigation"

No references for this section.

Section 3.1, "Geology, Soils, and Mineral Resources"

Bryant, W. A. (Compiler). 1998. Fault Number 64, Quien Sabe Fault, *in* Quaternary Fault and Fold Database of the United States. Available: <http://gldims.cr.usgs.gov/webapps/cfusion/Sites/qfault/qf_web_disp.cfm?disp_cd=C&qfault_or=1436&ims_cf_cd=cf>.

———. 2000. Fault Number 58b, Sargent Fault Zone, Southeastern Section, *in* Quaternary fault and Fold Database of the United States. Available: <http://gldims.cr.usgs.gov/webapps/cfusion/sites/qfault/qf_web_disp.cfm?qfault_or=1362&ims_cf_cd=cf&disp_cd=C>. Accessed June 2010.

CGS. *See* California Geological Survey.

California Geological Survey. 2001. GIS files of Official Maps of Alquist-Priolo Earthquake Fault Zones, Central Coastal Region. CD-ROM. California Division of Mines and Geology. Sacramento, CA.

———. 2007. Index to Official Maps of Earthquake Fault Zones. Available: <http://www.consrv.ca.gov/cgs/rghm/ap/Map_index/index.htm>. Last revised 2007. Accessed June 2010.

Cao, T., W. A. Bryant, B. Rowshandel, D. Branum, and C. J. Wills. 2003. The Revised 2002 California Probabilistic Seismic Hazard Maps. Available: <http://www.consrv.ca.gov/cgs/rghm/psha/Pages/index.aspx>. Last updated 2007. Accessed June 2010.

Hart, E. W. and W. A. Bryant. 1999. Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps. Special Publication 42. California Division of Mines and Geology. Sacramento, CA.

Jennings, C. W. 1994. Fault Activity Map of California and Adjacent Areas. California Division of Mines and Geology, Geologic Data Map No. 6. Sacramento, CA.

Jennings, C. W. and R. G. Strand. 1958. Geologic Map of California, Santa Cruz Sheet. California Division of Mines and Geology. Sacramento, CA.

Kohler-Antablin, S. 1999. Update of Mineral Land Classification: Aggregate materials in the Monterey Bay Production-Consumption Region. DMG Open-File Report 99-01. California Division of Mines and Geology. Sacramento, CA.

Majmundar. H. H. 1994. Landslide Hazards in the Hollister Area, San Benito County, CA. Landslide Hazard Identification Map No. 30. DMG Open-File Report 94-02. California Division of Mines and Geology. Sacramento, CA.

NRCS. *See* Natural Resources Conservation Service.

Natural Resources Conservation Service, Soil Survey Division. Various dates. Official Soil Series Descriptions. Available: <http://soils.usda.gov/technical/classification/osd/index.html>. Accessed June 2010.

Natural Resources Conservation Service. 2007 (December 11). GIS soil data for San Benito County in Soil Survey Geographic (SSURGO) format. Available: <http://SoilDataMart.nrcs.usda.gov>.

———. 2009. Web Soil Survey. Available: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>. Last modified November 11, 2009. Accessed June 2010.

Petersen, M. D., W. A. Bryant, C. H. Cramer, T. Cao, M. S. Reichle, A. D. Frankel, J. J. Lienkaemper, P. A. McCrory, and D. P. Schwartz. 1996. *Probabilistic Seismic Hazard Assessment for the State of California*. California Division of Mines and Geology Open-File Report 96-08. U.S. Geological Survey Open-File Report 96-706.

Rogers, T. H. 1993. *Geology of the Hollister and San Felipe Quadrangles, San Benito, Santa Clara, and Monterey Counties, California*. DMG Open-File Report 93-01. California Division of Mines and Geology. Sacramento, CA.

Stinson, M. C., M. W. Manson, J. J. Plappert, E. Leivas, R. C. Loyd, R. V. Miller, J. F. Davis, R. G. Strand, and D. J. Beeby. 1987. *Mineral Land Classification: Aggregate materials in the San Francisco-Monterey Bay Area. Part IV. Classification of Aggregate Resource Areas, Monterey Bay Production-Consumption Region. Special Report 146.* California Division of Mines and Geology. Sacramento, CA.

U.S. Geological Survey Earthquake Hazards Program. 2010. Quaternary Fault and Fold Database for the United States. Available: <http://earthquake.usgs.gov/hazards/qfaults/>. Last updated March 31, 2010. Accessed June 2010.

Section 3.2, "Water Resources"

Bookman-Edmonston Engineering. 2006. *Draft Occurrence and Management of High Groundwater North Area*. Prepared for the San Benito County Water District. January 16, 2006.

Cal EMA. *See* California Emergency Management Agency.

California Department of Water Resources. 2004. *California's Groundwater Bulletin 118, Gilroy-Hollister Valley Groundwater Basin (Hollister Area Subbasin, San Juan Bautista Area Subbasin, and Bolsa Area Subbasin) and Tres Pinos Valley Groundwater Basin*. Last updated February 27, 2004.

California Emergency Management Agency. 2009. Hazard Mitigation Portal Website. Available: http://myhazards.calema.ca.gov/. Accessed June 14, 2010.

CDPH. *See* California Department of Public Health.

Central Coast RWQCB. *See* Central Coast Regional Water Quality Control Board.

Central Coast Regional Water Quality Control Board. 1994 (September 8). Water *Quality Control Plan for the Central Coast Region, Second Edition.*

City of Hollister. 2004. *Storm Water Management Plan.* Available: http://www.hollister.ca.gov/site/Documents/SWMPfinalone.pdf. Accessed June 2, 2010.

———. 2005. *City of Hollister General Plan*. Adopted December 5, 2005. Amended June 18, 2007.

———. 2006. *City of Hollister Domestic Wastewater System Improvements and San Benito County Water District Recycled Water Facility Project Final Environmental Impact Report*. Prepared by San Benito County Water District (AES). October 2006. Available: <http://reports.analyticalcorp.net/hollister/feir/FEIR.htm>. Accessed July 1, 2010.

———. 2007. *Storm Water Management Plan Annual Report, Reporting Period February 2, 2006–June 30, 2007.* Available: <http://www.hollister.ca.gov/site/html/gov/office/documents/SWMPAnnualReport.pdf>. Accessed June 2, 2010.

City of Hollister, San Benito County, San Benito County Water District, and Sunnyslope County Water District. 2008. *Hollister Urban Area Water and Wastewater Master Plan*. Prepared by HDR. November 2008.

———. 2010. *Hollister Urban Area Master Plan Implementation Program Coordinated Water Supply and Treatment Plan*. Prepared by HDR and RMC Water and Environment. Revised January 2010.

County of San Benito. 1980. *1992 General Plan: Seismic Safety/Safety Elements*. Adopted 1980.

———. 1994. *1992 General Plan: Environmental Resources and Constraints Inventory*. Adopted July 26, 1994.

———. 1995. *1992 General Plan: Open Space and Conservation Element Update*. Adopted February 7, 1995.

———. 2009a. San Benito County, California Code of Ordinances. Adopted January 6, 2009. Available: <http://www.amlegal.com/nxt/gateway.dll/California/sanbenitocounty_ca/sanbenitocountycaliforniacodeofordinance?f=templates$fn=altmain-nf-contents.htm$3.0&tt=altmain-nf.htm&t=altmain-nf-contents.htm&tf=_self&global=hitdoc_g_&hitdoc_g_dt=altmain-nf.htm>. Accessed May 14, 2010.

———. 2009b. *San Benito County Flood Zones*. November 2009. Available: <http://www.san-benito.ca.us/departments/planning/documents/Flood.pdf>. Accessed June 2, 2010.

DWR. *See* California Department of Water Resources.

GEI Consultants. 2009. Draft preliminary Hydrogeological Feasibility Study–North Area. September 8, 2009.

Kennedy/Jenks Consultants. 2003 (July). *Draft Final Report – Groundwater Management Plan Update for the San Benito County part of the Gilroy-Hollister Valley Groundwater Basin*. Provided as Appendix B-1 of the San Benito County Water District Water Resources Association Draft Program EIR for the Groundwater Management Plan Update for the San Benito County Portion of the Gilroy-Hollister Valley Groundwater Basin (San Benito County Water District Water Resources Association 2003, below).

———. 2008. *Final Draft Hollister Area 2008 Urban Water Management Plan*. Prepared for the Sunnyslope County Water District and the City of Hollister. June 2008.

Mathany, T. M., Kulongski, J. T., Ray, M. C., and Belitz, Kenneth. 2009. *Groundwater-Quality Sata in the South Coast Interior Basins Study Unit, 2008*. Results from the California GAMA program: U.S. Geological Survey Data Series 463, 82 p. Available: <http://pubs.usgs.gov/ds/463>. Accessed May 17, 2010.

Pacheco Watershed Working Group, in cooperation with the Santa Clara/San Benito County Farm Bureau's Agricultural Water Quality Program. 2005 (June). *Pacheco Creek Agricultural Watershed Plan Annual Report*.

Pajaro River Watershed Flood Prevention Authority. 2003. *Phase 2 Pajaro River Watershed Study Executive Summary*. April 2003. Prepared by RMC in association with Schaaf & Wheeler. Available: <http://www.pajaroriverwatershed.org/pages/pajaro2003.htm>. Accessed June 18, 2010.

Pajaro Valley Water Management Agency, San Benito County Water District and the Santa Clara Valley Water District. 2007. *Pajaro River Watershed Integrated Regional Water Management Plan*. Available: <http://www.pvwma.dst.ca.us/project_planning/projects_irwmp.shtml>. Accessed June 14, 2010.

PRWFPA. *See* Pajaro River Watershed Flood Prevention Authority.

PVWMA. *See* Pajaro Valley Water Management Agency.

PWWG. *See* Pacheco Watershed Working Group.

San Benito County Water District. 2009 (December 17). *Annual Groundwater Report for Water Year 2009*. Prepared by Todd Engineers and Gus Yates.

San Benito County Water District and Santa Clara Valley Water District. 2007. *Pajaro River Watershed Groundwater Desalination Feasibility Study Report*. Prepared by RMC Water and Environment. September 27, 2007.

San Benito County Water District Water Resources Association. 2003 (August). *Draft Program Environmental Impact Report for the Groundwater Management Plan Update for the San Benito County Portion of the Gilroy-Hollister Valley Groundwater Basin*.

SBCWD. *See* San Benito County Water District.

SBCWDWRA. *See* San Benito County Water District Water Resources Association.

SCVWD. *See* Santa Clara Valley Water District.

Shatz, Richard W. 2010. Technical Memorandum #2–Draft Well Field Location Selection Process North County Groundwater Bank San Benito County, California. June 22, 2010. GEI Consultants. Sacramento, CA.

SSCWD. *See* Sunnyslope County Water District.

Sunnyslope County Water District. 2009 (July). *Environmental Constraints Analysis for the Groundwater Treatment Facilities in San Benito County*.

U.S. Geological Survey. 2010. USGS Surface-Water Monthly Statistics for the Nation. Available: <http://waterdata.usgs.gov/nwis/monthly?referred_module=sw&search_criteria=state_cd&search_criteria=search_station_nm&submitted_form=introduction>. Accessed June 3, 2010.

USGS. *See* U.S. Geological Survey.

Section 3.3, "Biological Resources"

California Department of Fish and Game. 1998. *California Vernal Pool Assessment Preliminary Report*. Sacramento, CA.

California Department of Forestry and Fire Protection. 2002. Multi-Source Land Cover Data (v02_2). GIS data layer. Available at: <http://frap.cdf.ca.gov/data/frapgisdata/download.asp?rec=fveg02_2>. Accessed: June 16, 2010.

California Department of Water Resources. 1997. GIS data for Land Uses for San Benito County "02st.shp". Available: <http://www.water.ca.gov/landwateruse/lusrvymain.cfm.> Accessed January 11, 2008.

California Department of Water Resources. 2002. GIS data for Land Uses for San Benito County "02st.shp". Available: <http://www.water.ca.gov/landwateruse/lusrvymain.cfm.> Accessed January 11, 2008.

California Native Plant Society. 2009. Inventory of Rare and Endangered Plants. Version 7-106. Available at: http://cnps.org/cnps/rareplants/inventory>. Accessed April 21, 2010.

California Natural Diversity Database. 2010 (March). California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch. Sacramento, CA.

CDF. *See* California Department of Forestry and Fire Protection.

City of Hollister. 2005. *The City of Hollister General Plan*.

CNDDB. *See* California Natural Diversity Database.

CNPS. *See* California Native Plant Society.

Cooper, D. 2004. *Important Bird Areas of California*. Audubon California.

DFG. *See* California Department of Fish and Game.

DWR. *See* California Department of Water Resources.

GEI Consultants. 2009. Draft preliminary Hydrogeological Feasibility Study–North Area. September 8, 2009.

Grossinger, R. M., E. E. Beller, M. N. Salomon, A. A. Whipple, R. A. Askevold, C. J. Striplen, E. Brewster, and R. A. Leidy, 2008. *South Santa Clara Valley Historical Ecology Study, including Soap Lake, the Upper Pajaro River, and Llagas, Uvas-Carnadero, and Pacheco Creeks.* Prepared for the Santa Clara Valley Water District and The Nature Conservancy. Publication #558. Historical Ecology Program, San Francisco Estuary Institute, Oakland, CA.

Horton, J. L., T. E. Kolb, and S. C. Hart. 2001. Physiological Response to Groundwater Depth Varies Among Species and with River Flow Regulation. *Ecological Applications.*

Jackson, M. B. and T. D. Colmer. 2005. Response and Adaptation by Plants to Flooding Stress. *Annals of Botany*.

Lite, S. J. and J. C. Stromberg. 2005. Surface Water and Ground-Water Thresholds for Maintaining Populus-Salix Forests, San Pedro River, Arizona. *Biological Conservation*.

Mahoney, J. M. and S. B. Rood. 1998. Streamflow Requirements for Cottonwood Seedling Establishment—an Integrative Model. *Wetlands*.

McCreary, D. D. and B. A. McPherson. 2005. The Biology of Oak Resources. Pages 8–14 in Giusti, G. A., D. D. McCreary,and R. B. Standiford. *A Planner's Guide for Oak Woodlands*. *Agricultural and Natural Resources.* Publication 3491. University of California, Oakland, CA.

Moyle, P. B. 2002. *Inland Fishes of California, Revised and Expanded.* University of California Press, Berkeley, CA

National Marine Fisheries Service. 2009. Salinas River Lagoon Sand-bar Management, Draft Biological Opinion. National Marine Fisheries Service, Southwest Region.

National Marine Fisheries Service. 2002. Santa Clara Valley Water District Stream Maintenance Program in Santa Clara County, Biological Opinion. National Marine Fisheries Service, Southwest Region.

National Research Council. 1995. *Wetlands: Characteristics and Boundaries*. Prepared by the Committee on Characterization of Wetlands, Water Science and Technology Board and Board on Environmental Studies and Toxicology, Commission on Geosciences, Environment, and Resources, National Research Council. National Academy Press, Washington, D.C.

NMFS. *See* National Marine Fisheries Service.

NRC. *See* National Research Council.

Rao, R. and Y. Li. 2003. Management of Flooding Effects on Growth of Vegetable and Selected Field Crops. *Horttechnology*.

San Benito County. 1995. *The San Benito County General Plan*.

San Benito County Water District Water Resources Association. 2003. *Draft Program Environmental Impact Report, Groundwater Management Plan Update for the San Benito County Portion of the Gilroy-Hollister Valley Groundwater Basin*. Volume II of II, Appendix E. *Biological Resources Report*. Prepared by H. T. Harvey & Associates, Watsonville, CA. Prepared for David J. Powers & Associates, San Jose, CA.

SBCWD. *See* San Benito County Water District.

SBCWDWRA. *See* San Benito County Water District Water Resources Association.

Smith, J. 1998. Steelhead and other Fish Resource of Western Mt. Hamilton Streams. Prepared by Jerry Smith, Department of Biological Sciences, San Jose State University, San Jose, CA.

Smith, J. 2007. Effects of Operation of Pacheco Reservoir on Steelhead. Prepared by Jerry Smith, Department of Biological Sciences, San Jose State University, San Jose, CA.

U.S. Army Corps of Engineers. 2000. *Final Functional Relationships for the Ecosystems Functions Model*. Prepared by Jones & Stokes, Sacramento, CA. Prepared for Sacramento-San Joaquin Rivers Basin Comprehensive Study Team, U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.

U.S. Fish and Wildlife Service. 2009. Sacramento Fish and Wildlife Office Species Database. Available at: http://www.fws.gov/sacramento/es/spp_lists/auto_list_form.cfm. Accessed: July 1, 2010.

U.S. Fish and Wildlife Service. 2010. National Wetlands Inventory: *WETDBA.CONUS_wet_poly*. GIS data layer. Available at: <http://www.fws.gov/wetlands/data/DataDownload.html.> Accessed: June 16, 2010.

U.S. Geological Survey. 2010 (March). GIS data for the National Hydrography Dataset for California "NHD11005_CA.gdb". Available: <ftp://nhdftp.usgs.gov/StateExtracts/High/FileGDB/>. Accessed June 1, 2010.

USACE. *See* U.S. Army Corps of Engineers.

USFWS. *See* U.S. Fish and Wildlife Service.

USGS. *See* U.S. Geological Survey.

Wang, E. and C. J. Smith. 2004. Modeling the Growth and Water Uptake Function of Plant Root Systems: a Review. *Australian Journal of Agricultural Research*.

Section 3.4, "Land Use and Agricultural"

California Department of Conservation. 2008. Important Farmland (agricultural land use) layers. Available <ftp://ftp.consrv.ca.gov/pub/dlrp/fmmp/2008/>. Division of Land Resource Protection, Farmland Mapping and Monitoring Program website. Last updated June 3, 2009. Accessed June 22, 2010.

California Department of Water Resources. 2002. GIS data for Land Uses for San Benito County "02st.shp". Available: <http://www.water.ca.gov/landwateruse/lusrvymain.cfm.> Accessed January 11, 2008.

City of Hollister. 2005. *City of Hollister General Plan*. Adopted December 5, 2005. Amended June 18, 2007.

County of San Benito. 1980. *1992 General Plan: Seismic Safety/Safety Elements*. Adopted 1980.

———. 1995. *1992 General Plan: Open Space and Conservation Element Update*. Adopted February 7, 1995.

DOC. *See* California Department of Conservation.

DWR. *See* California Department of Water Resources.

Natural Resources Conservation Service. 2006. *Farmland Protection Program*. Available <http://www.nrcs.usda.gov/programs/fppa/>. Accessed September 2006.

———. 2007 (December 11). GIS soil data for San Benito County in Soil Survey Geographic (SSURGO) format. Available: <http://SoilDataMart.nrcs.usda.gov>.

NRCS. *See* Natural Resources Conservation Service.

Section 3.5, "Cultural and Historic Resources"

Basin Research Associates, Inc. 2004. *Cultural Resources Review Rincon De Los Esteros Redevelopment Area North San Jose Environmental Impact Report Proposed Residential Areas and Urban Industrial Core Area City of San Jose, Santa Clara County, California*. Report on file, Northwest Information Center, Rohnert Park, California.

Beardsley, R. K. 1954. *Temporal and Areal Relationships in Central California Archaeology*. Berkeley: University of California Archaeological Survey Reports 24, 25.

Beck, W. A., and Y. D. Haase. 1974. *Historical Atlas of California*. University of Oklahoma Press.

Bennyhoff, J. A. 1968. *A Delta Intrusion to the Bay in the Late Middle Period in Central California*. San Diego: Paper presented at the Annual Meeting of the Society for California Archaeology and the Southwestern Anthropological Association.

———. 1977. *Ethnogeography of the Plains Miwok*. University of California, Center for Archaeological Research at Davis, Publications 5.

———. 1982. *Central California Augustine: Implications for Northern California Archaeology*. Contributions of the University of California Archaeological Research Facility, Berkeley 52:65–74.

Fredrickson, D. A. 1973. *Early Cultures of the North Coast Ranges, California*. Unpublished Ph.D. Dissertation. Department of Anthropology, University of California, Davis.

———. 1974. Cultural Diversity in Early Central California: A View from the North Coast Ranges. *Journal of California Anthropology* 1(1):41–53.

Harrington, M. R. 1942. *Cultural Element Distributions, XIX: Central California Coast*. University of California Anthropological Publications 7(1):1-46.

Heizer, R. F. 1949. *The Archaeology of Central California I: The Early Horizon*. University of California Anthropological Records 12 (1).

———. 1974. *The Costanoan Indians: The Indian Culture from the Mouth of the Sacramento River, South to Monterey and Inland Past the Salinas River*. Cupertino, CA: California History Center.

Hoover, Mildred Brooke, H. E. Rensch, E. G. Rensch, W. N. Abeloe. 1990. *Historic Spots in California* (Douglas E. Kyle, ed.). Stanford University Press, Stanford, CA.

Kroeber, A. L. 1925. *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78.

Levy, R. 1978. Costanoan. In *Handbook of North American Indians*, Vol. 8. Smithsonian Institution, Washington, D.C.

Lillard, J. B., R. F. Heizer, and F. Fenenga. 1939. *An Introduction to the Archaeology of Central California*. Sacramento: Sacramento Junior College, Department of Anthropology Bulletin 2.

Margolin, M. 1978. *The Ohlone Way: Indian Life in the San Francisco and Monterey Bay Areas*. Heyday Books, Berkeley.

Meighan, C. W. 1955. *Archaeology of the North Coast Ranges, California*. University of California Archaeological Survey Reports 30:1–39. Berkeley, CA.

Milliken, R. 1995. *A Time of Little Choice: The Disintegration of Tribal Life in the San Francisco Bay Region*. Ballena Press Anthropological Papers No. 43. Menlo Park.

———. 1997. Ethnography of the Los Vaqueros Region. In Native *American History Studies for the Los Vaqueros Project: A Synthesis*. David Fredrickson et al., eds. Report Prepared for the Contra Costa Water District. On file, Anthropological Studies Center, Sonoma State University, Rohnert Park.

Moratto, M. J. 1984. *California Archaeology*. Academic Press, San Francisco, CA.

Office of Historic Preservation–State of California. 1990. *California Historical Landmarks*. Department of Parks and Recreation, Office of Historic Preservation, Sacramento.

Powers, S. 1877. Tribes of California. Contributions to North American Ethnology 3. Washington: U.S. Geographical and Geological Survey of the Rocky Mountain Region. Reprinted 1976.

Willey, G. R., and P. Phillips. 1958. *Method and Theory in American Archaeology*. Chicago: University of Chicago Press.

Section 3.6, "Paleontological Resources"

Hay, O. P. 1927. The Pleistocene of the Western Region of North American and its Vertebrated Animals. Carnegie Institute, Washington. Publication 322B.

Jefferson, G. T. 1991. A Catalogue of Late Quaternary Vertebrates from California: Part Two: Mammals. Natural History Museum of Los Angeles County. Technical Report No. 7.

Jennings, C. W. and R.G. Strand. 1958. Geologic Map of California, Santa Cruz Sheet. California Division of Mines and Geology, Sacramento, CA.

Lundelius, E. L. Jr., R. W. Graham, E. Anderson, J. Guilday, J. A. Holman, D. W. Steadman, and S. D. Webb. 1983. Terrestrial vertebrate faunas. Pages 311–353 in H.E. Wright, Jr. and S.C. Porter (eds.), *Late-Quaternary Environments of the United States*, Volume 1, The Late Pleistocene. University of Minnesota Press. Minneapolis, MN.

Rogers, T. H. 1993. Geology of the Hollister and San Felipe Quadrangles, San Benito, Santa Clara, and Monterey Counties, California. California Division of Mines and Geology, Sacramento, CA. Open-File Report 93-01.

Savage, D. E. 1951. Late Cenozoic Vertebrates of the San Francisco Bay Region. University of California Publications, Bulletin of the Department of Geological Sciences, Vol. 28, No. 10:215–314.

Society of Vertebrate Paleontology. 1995. Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources Standard Guidelines. Society of Vertebrate Paleontology News Bulletin, Vol. 163, pp. 22–27.

———1996. Conditions of Receivership for Paleontologic Salvage Collections (final draft). Society of Vertebrate Paleontology News Bulletin, Vol. 166, pp. 31–32.

Stirton, R. A. 1939. Cenozoic Mammal Remains from the San Francisco Bay Region. University of California Department of Geological Sciences Bulletin, Vol. 24, No. 13.

University of California Museum of Paleontology. 2010. Museum of Paleontology Database. Accessed June 21, 2010.

Section 3.7, "Population, Employment, and Housing"

AMBAG. *See* Association of Monterey Bay Area Governments.

Association of Monterey Bay Area Governments. 2008 (June). *Monterey Bay Area 2008 Regional Forecast Population, Housing Unit, and Employment Projections for Monterey, San Benito, and Santa Cruz Counties to the Year 2035*. Available: <http://www.ambag.org/programs/blueprint/forecast/index.html>. Accessed June 23, 2010.

California Department of Finance. 2010 (January). E-5: City/County Population and Housing Estimates. Available: <http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E5/E5-06/E-5text2.asp>. Accessed June 17, 2010.

California Department of Housing and Community Development. 2000 (May 22). *Raising the Roof—California Housing Development Projections and Constraints 1997–2020*. Sacramento, CA. Available: <http://www.hcd.ca.gov/hpd/hrc/rtr/index.html>.

City of Hollister. 2005 (December). *City of Hollister General Plan*. Available: <http://www.hollister.ca.gov/Site/html/about/Genplan2005.asp>. Accessed June 21, 2010.

———. 2009 (November). *City of Hollister Housing Element of the General Plan*. City of Hollister, CA.

DOF. *See* California Department of Finance.

HCD. *See* California Department of Housing and Community Development.

HDR. 2008 (November). *Hollister Urban Area Master Plan Implementation Program. Coordinated Water Supply and Treatment Plan*. City of Hollister, San Benito County, San Benito County Water District, and Sunnyslope County Water District. Walnut Creek, CA.

HDR. 2010 (November). *Hollister Urban Area Master Plan Implementation Program. Coordinated Water Supply and Treatment Plan*. Walnut Creek, CA.

San Benito County. 2010a. *San Benito County Draft Housing Element 2007–2014*. Available: <http://www.san-benito.ca.us/departments/planning/>. Accessed June 16, 2010.

———. 2010b (March). *General Plan Public Review Draft Background Report*. Available: <http://www.sanbenitogpu.com/docs.html#BR>. Accessed June 17, 2010.

U.S. Census Bureau. 2000a. American FactFinder. San Benito County, California. DP-3 Profile of Selected Economic Characteristics: 2000 Census 2000 Summary File 3 (SF3) – Sample Data. Available: <http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed: June 7, 2010.

———. 2000b. American FactFinder. City of Hollister, California. DP-3 Profile of Selected Economic Characteristics: 2000 Census 2000 Summary File 3 (SF3) – Sample Data. Available: <http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed: June 17, 2010.

———. 2008a. American FactFinder. San Benito County, California. Selected Economic Characteristics: 2006-2008. American Community Survey. Available: <http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed: June 16, 2010.

———. 2008b. American FactFinder. City of Hollister, California. Selected Economic Characteristics: 2006-2008. American Community Survey. Available: <http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed: June 16, 2010.

Section 3.8, "Utilities and Public Services"

CAL FIRE. *See* California Department of Forestry and Fire Protection.

California Department of Forestry and Fire Protection. 2008. About CAL FIRE. [online] http://www.fire.ca.gov/about.php. [accessed May 14, 2010]

California Energy Commission. 2005. *Integrated Energy Policy Report*. November 2005. [online] http://www.energy.ca.gov/2005_energypolicy/ [accessed on June 18, 2010]

———. 2008c. Title 24, Part 6, of the California Code of Regulations, California's Energy Efficiency Standards for Residential and Nonresidential Buildings.[online] http://www.energy.ca.gov/title24/ [accessed on June 18, 2008].

California Integrated Waste Management Board. [online] http://www.calrecycle.ca.gov/Laws/Regulations/Title14/ch9a63.htm#ch9ca6_6 / [accessed June 21, 2010]

———. 2008b. *County Waste Profiles*. Available: <http://www.ciwmb.ca.gov/Profiles/County/>. Accessed June 20, 2010.

CEC. *See* California Energy Commission.

City of Hollister. 2005. *City of Hollister General Plan*. Adopted December 5, 2005. Amended June 18, 2007. [online] http://www.hollister.ca.gov/Site/html/about/Genplan2005.asp [accessed June 18, 2010].

CIWMB. *See* California Integrated Waste Management Board.

County of San Benito. 1995. *1992 General Plan*. Adopted February 7, 1995. [online] http://www.san-benito.ca.us/departments/planning/general%20plan.htm [accessed June 1, 2010].

County of San Benito. 2009a. *San Benito County, CA Code of Ordinances*. Adopted January 6, 2009. [online] http://www.amlegal.com/nxt/gateway.dll/California/sanbenitocounty_ca/sanbenitocountycaliforniacodeofordinance?f=templates$fn=altmain-nf-contents.htm$3.0&tt=altmain-nf.htm&t=altmain-nf-contents.htm&tf=_self&global=hitdoc_g_&hitdoc_g_dt=altmain-nf.htm [accessed May 14, 2010].

Hannon, Bruce, et al. 1978. "Energy and Labor in the Construction Sector." *Science* 202; 837-847. [online] http://www.sciencemag.org/cgi/content/abstract/sci;202/4370/837?maxtoshow=&hits=10&RESULTFORMAT=&fulltext=Hannon%2C+Bruce%2C+et+al.+1978.+%93Energy+and+Labor+in+the+Construction+Sector&searchid=1&FIRSTINDEX=0&resourcetype=HWCIT [accessed on May 28, 2010].

HDR. 2008 (November). *Hollister Urban Area Water and Wastewater Master Plan*.

National Energy Policy Development Group. 2001 (May). *National Energy Policy*. [online] http://www.wtrg.com/EnergyReport/National-Energy-Policy.pdf [accessed on June 10, 2010].

NEPDG. *See* National Energy Policy Development Group.

Pacific Gas & Electric. [online]http://www.pge.com/pipeline/about/system_maps/statemap.shtml [accessed June 20, 2010].

PGE. *See* Pacific Gas & Electric.

U.S. Department of Energy. Summary of the Porter-Cologne Water Quality Control Act. Energy Technology Engineering Center, Regulators and Regulations. Available: <http://www.etec.energy.gov/Regulation/Porter-Cologne-Water-Quality-Control-Act.html>. Last updated August 6, 2008. Accessed July 2010.

Section 3.9, "Hazards and Hazardous Materials"

California Environmental Protection Agency. 2010. Cortese List Data Resources. Available: <http://www.calepa.ca.gov/SiteCleanup/CorteseList/> . Accessed July 7, 2010.

Caltrans. *See* California Department of Transportation.

California Department of Transportation. 1996. *Traffic Manual Chapter 5 Traffic Controls for Construction Zones and Maintenance Work Zones*. Sacramento, CA.

CAL FIRE. *See* California Department of Forestry and Fire.

California Department of Forestry and Fire. 2007. San Benito County Fire Hazard Severity Zones in SRA. Adopted by CAL FIRE on November 7, 2007. Available: <http://frap.cdf.ca.gov/webdata/maps/san_benito/fhszs_map.35.pdf>. Accessed July 7, 2010.

Sacramento Water Resources Control Board. 2010. Geotracker. Available: <geotracker.swrcb.ca.gov>. Accessed: July 7, 2010.

SWRCB. *See* Sacramento Water Resources Control Board.

Section 3.10, "Transportation and Traffic"

California Department of Transportation. *Regional Transportation Plan Guidelines 2010*. [online] http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/index.html [accessed on June 20, 2010].

Caltrans. *See* California Department of Transportation.

City of Hollister. 2005. *City of Hollister General Plan.* Adopted December 5, 2005. Amended June 18, 2007. [online] http://www.hollister.ca.gov/Site/html/about/Genplan2005.asp [accessed on June 20, 2010.

County of San Benito. 1995. *1992 General Plan*. Adopted February 7, 1995. [online] http://www.san-benito.ca.us/departments/planning/general%20plan%20elements/transportation%20element.htm [accessed June 1, 2010].

County of San Benito. 2009a. *San Benito County, CA Code of Ordinances*. Adopted January 6, 2009. [online] http://www.amlegal.com/nxt/gateway.dll/California/sanbenitocounty_ca/sanbenitocountycaliforniacodeofordinance?f=templates$fn=altmain-nf-contents.htm$3.0&tt=altmain-nf.htm&t=altmain-nf-contents.htm&tf=_self&global=hitdoc_g_&hitdoc_g_dt=altmain-nf.htm [accessed May 14, 2010].

HDR. 2008 (November). *Hollister Urban Area Water and Wastewater Master Plan*.

Section 3.11, "Air Quality and Global Climate Change"

California Air Resources Board (ARB). 1994. California Surface Wind Climatology. Sacramento, CA. February.

———. 2003. Hotspots Analysis and Reporting Program User Guide. Available: <http://www.arb.ca.gov/toxics/harp/harpug.htm>. Accessed March 2010.

———. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* Available at URL: < http://www.arb.ca.gov/ch/handbook.pdf>. April.

———. 2008a. State Implementation Plan. Available: <http://www.arb.ca.gov/planning/sip/sip.htm>. Accessed March 2010.

———. 2008b. California Air Resources Board (ARB), 2008, *Climate Change Scoping Plan*, Available: <http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf>. Accessed: June 2010.

———. 2009. The California Almanac of Emissions and Air Quality— 2009 Edition. Sacramento, CA. Available: <http://www.arb.ca.gov/aqd/almanac/almanac09/almanac2009all.pdf>. Accessed June 2010.

———. 2010a. Area Designation Maps/State and National. Available at URL: <http://www.arb.ca.gov/desig/adm/adm.htm/>. Accessed June 2010.

———. 2010b. State and National Ambient Air Quality Standards. Available at URL: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>. Accessed in June 2010.

———. 2010c. 2008 Estimated Annual Emissions for San Benito County. Available: < http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_DIV=-4&F_DD=Y&F_YR=2008&F_SEASON=A&SP=2009&F_AREA=CO&F_CO=35>. Accessed June 2010.

———. 2010d. SB 656 List of Air District Measures that Reduce Particulate Matter. Available: <http://www.arb.ca.gov/pm/pmmeasures/board_approved_list.pdf>. Accessed June 2010.

———. 2010e. Air Quality Data Statistics. Available: <http://www.arb.ca.gov/adam/welcome.html>. Accessed June 2010.

———. 2010f. Site Information for Hollister- Fairview Road. Available: < http://www.arb.ca.gov/qaweb/site.php?s_arb_code=35823>. Accessed June 2010.

———. 2010g. Facility Search. City of Hollister. Available: CAPS: <http://www.arb.ca.gov/app/emsinv/facinfo/faccrit.php?dd=&grp=1&sort=FacilityNameA&dbyr=2007&ab_=&dis_=&co_=&fname_=&city_=hollister&fzip_=&fsic_=&facid_=&displayit=Pollutant&showpol=&showpol2=> Toxics: <http://www.arb.ca.gov/app/emsinv/facinfo/factox.php?dd=&grp=1&sort=FacilityNameA&dbyr=2007&ab_=&dis_=&co_=&fname_=&city_=hollister&fzip_=&fsic_=&facid_=&displayit=Risk&showpol=&showpol2=>. Accessed June 2010.

———. 2010h. Greenhouse Gas Inventory Data – Graphs. Available: <http://www.arb.ca.gov/cc/inventory/data/graph/graph.htm>

California Energy Commission. 2006a. *Our Changing Climate: Assessing the Risks to California*. Publication CEC-500-2006-077. July. Available: <http://www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.PDF>. Accessed May 2010.

———. 2006b. *Inventory of California Greenhouse Gas Emissions and Sinks:1990 to 2004.* (Staff Final Report). Publication CEC-600-2006-013-SF. Available: http://www.climatechange.ca.gov/inventory/index.html. Accessed May 2010.

California Natural Resources Agency. 2008 (March). *Delta Vision Blue Ribbon Task Force Letter to Governor Schwarzenegger on Sea Level Rise*. Available: <http://deltavision.ca.gov/BlueRibbonTaskForce/April2008/Item2_Attachment1.pdf>. Accessed February 2010.

City of Hollister. 2005 (October). *Final Environmental Impact Report City of Hollister General Plan*. Hollister, CA: Development Services Department.

City of Hollister. 2006 (October). *City of Hollister Domestic Wastewater System Improvements and San Benito County Water District Recycled Water Facilities Project Environmental Impact Report. Hollister, CA.*

EPA. *See* U.S. Environmental Protection Agency.

Federal Register. 2007 (May 11). *Vol. 72, No. 91 Rules and Regulations, Pages 26718-26721*.

Godish, T. 2004. *Air Quality*. Lewis Publishers. Boca Raton, FL.

HDR. 2008. *Hollister Urban Area Water and Wastewater Master Plan. City of Hollister, San Benito County, San Benito County Water District, and Sunnyslope County Water District.* November.

Intergovernmental Panel on Climate Change. 2000. *IPCC Expert Meetings on Good Practice* Guidance and Uncertainty Management in National Greenhouse Gas Inventories, Energy Section, Aircraft Emissions. Available: <http://www.ipcc-nggip.iges.or.jp/public/gp/bgp/2_5_Aircraft.pdf>. Accessed April, 2010.

———. 2006. IPCC Guidelines for National Greenhouse Gas Inventories; Chapter 6: Wastewater Treatment and Discharge. Geneva, Switzerland. Available: <http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/5_Volume5/V5_6_Ch6_Wastewater.pdf>. Accessed May 2010.

———. 2007 (February). Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC. Geneva, Switzerland. Available: <http://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html>. Accessed May 2010.

IPCC. *See* Intergovernmental Panel on Climate Change.

MBUAPCD. *See* Monterey Bay Unified Air Pollution Control District,

Monterey Bay Unified Air Pollution Control District. 2008. CEQA Air Quality Guidelines. Available: <http://www.mbuapcd.org/mbuapcd/pdf/mbuapcd/pdf/CEQA_full.pdf>. Accessed June, 2010.

———. 2010. Air Quality Planning: GHG Emissions Inventories. Available: <http://www.mbuapcd.org/programs/planning#GHG Inventory Data>. Accessed June 2010.

New Hampshire Department of Environmental Services. 2007. *CO Health Information Summary*. Available: <http://des.nh.gov/organization/commissioner/pip/factsheets/ard/documents/ard-ehp-20.pdf>. Accessed March, 2010.

NHDES. *See* New Hampshire Department of Environmental Services.

Office of Environmental Health Hazard Assessment. 2008. Appendix D.2 Acute RELs and toxicity summaries using the previous version of the Hot Spots Risk Assessment guidelines (OEHHA 1999). Available: < http://www.oehha.ca.gov/air/hot_spots/2008/AppendixD2_final.pdf>. Accessed March 2010.

Office of the White House. 2009. Memorandum for the Administrator of the Environmental Protection Agency. Available: <http://www.whitehouse.gov/the_press_office/Presidential_Memorandum_EPA_Waiver/>. Accessed June 2010.

OEHHA. *See* Office of Environmental Health Hazard Assessment.

Seinfeld, J. H., and S. N. Pandis. 1998. *Atmospheric Chemistry and Physics*. New York, NY: John Wiley & Sons, Inc.

Sacramento Metropolitan Air Quality Management District. 2004 (July). *Guide to Air Quality Assessment in Sacramento County*.

Salinas, Julio. Staff toxicologist. Office of Health Hazard Assessment, Sacramento, CA. August 3, 2004—telephone conversation with Kurt Legleiter of EDAW regarding exposure period for determining health risk.

SCAQMD. *See* South Coast Air Quality Management District.

SMAQMD. *See* Sacramento Metropolitan Air Quality Management District.

Southern California Association of Governments. 2004 (April). *Growth Forecast – City Projections*.

———. 2008. Adopted 2008 Regional Transportation Plan Growth Forecast, by City. Available at URL: <www.scag.ca.gov/forecast/index.htm>. Accessed in October.

South Coast Air Quality Management District. 1993 (April). *CEQA Air Quality Handbook*.

———. 2005 (February). *Carbon Monoxide Redesignation Request and Maintenance Plan*.

———. 2006a. 2003 Air Quality Management Plan. Available: <http://www.aqmd.gov/aqmp/AQMD03AQMP.htm>. Accessed March 2010.

———. 2006b. 2007 Air Quality Management Plan. Available: <http://www.aqmd.gov/aqmp/07aqmp/index.html >. Accessed March 2010.

———. 2008a Air Quality Significance Thresholds. Available: <http://www.aqmd.gov/CEQA/handbook/signthres.pdf >. Accessed March 2010.

———. 2008b URBEMIS 2007 (Version 9.2.4). Available: <http://www.aqmd.gov/ceqa/urbemis.html>. Accessed March 2010.

U.S. Census Bureau. 2009a. San Benito County QuickFacts. Available: <http://quickfacts.census.gov/qfd/states/06/06069.html>. Accessed June 2010.

———. 2009b. Los Angeles County QuickFacts. Available: <http://quickfacts.census.gov/qfd/states/06/06037.html>. Accessed June 2010.

U.C. Davis Institute of Transportation Studies. 1997 (December). *Transportation Project-level Carbon Monoxide Protocol*. Davis, California.

UCD ITS. *See* U.C. Davis Institute of Transportation Studies.

U.S. Environmental Protection Agency. 2006. EPA/600/R-05/144aF, 2006: Air Quality Criteria for Lead Volume I:E-5–E-6. October. Available: <http://oaspub.epa.gov/eims/eimscomm.getfile?p_download_id=459555>. Accessed March 2010.

———. 2009. EPA-452/R-09-007, Risk and Exposure Assessment to Support the Review of the SO2 Primary National Ambient Air Quality Standards:56. July. Available: http://www.epa.gov/ttn/naaqs/standards/so2/data/200908SO2REAFinalReport.pdf>. Accessed March 2010.

———. 2010a. *Criteria Air Pollutant Information*. Available: <http://www.epa.gov/air/urbanair/>. Accessed March 2010.

———. 2010b. EPA-452/P-10-004, Risk and Exposure Assessment to Support the Review of the Carbon Monoxide Primary National Ambient Air Quality Standards: Second External Review Draft. February. Available: http://www.epa.gov/ttn/naaqs/standards/co/data/COREA2ndDraftFeb2010.pdf. Accessed March 2010.

———. 2010c. Human-Related Sources and Sinks of Carbon Dioxide. Available: <http://www.epa.gov/climatechange/emissions/co2_human.html>. Accessed March 2010.

———. 2010d. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2008. U.S. EPA #430-R-10-006. Available: <http://epa.gov/climatechange/emissions/usinventoryreport.html>. Accessed May 2010.

U.S. Office of Technology Assessment. 1989. Catching Our Breath: Next Steps for Reducing Urban Ozone. Available: <http://www.princeton.edu/~ota/disk1/1989/8906/8906.PDF>. Accessed June 2010.

USOTA. *See* U.S. Office of Technology Assessment.

Weather.com. 2010. Monthly Averages for Hollister, CA. Available: <http://www.weather.com/weather/climatology/monthly/USCA0486>. Accessed June 2010.

Zhu, Yifang, W. C. Hinds, S. Kim, and S. Shen. 2002. Study of Ultrafine Particles Near a Major Highway with Heavy-duty Diesel Traffic. *Atmospheric Environment* 36:4323-4335.6.

Section 3.12, "Noise"

Bolt, Beranek, and Newman Inc. 1981. Noise Control for Buildings and Manufacturing Plants. Los Angeles, CA.

Caltrans. *See* California Department of Transportation.

California Office of Planning and Research. 2003 (October). State of California 2003 General Plan Guidelines. Sacramento, CA.

California Department of Transportation. 2004 (June). Transportation- and Construction-Induced Vibration Guidance Manual. Sacramento, CA.

———. 2008a. Traffic and Vehicle Data Systems Unit, 2008 All Traffic Volumes on California State Highway System. Available at <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2008all/r134161i.htm> Accessed May 20, 2010.

———. 2008b. Traffic and Vehicle Data Systems Unit, 2008 All Traffic Volumes on California State Highway System. Available at < http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2008all/r022-33i.htm> Accessed May 20, 2010.

———. 2009 (November). Technical Noise Supplement. Sacramento, CA.

Egan, David M. 1988. *Architectural Acoustics*. ISBN 0-07-019111-5.

Federal Highway Administration. 2006 (January). *FHWA Roadway Construction Noise User's Guide*. Washington, D.C.

Federal Interagency Committee on Noise. 1992 (August). *Federal Agency Review of Selected Airport Noise Analysis Issues*. Washington, D.C.

Federal Transit Administration. 2006 (May). *Transit Noise and Vibration Impact Assessment*. Washington, D.C.

FHWA. *See* Federal Highway Administration.

FICON. *See* Federal Interagency Committee on Noise.

FTA. *See* Federal Transit Administration.

OPR. *See* California Office of Planning and Research.

San Benito County. 1984 (August). *San Benito County Amended Noise Element*. Hollister, CA.

Section 3.13, "Recreational Resources"

California State Parks. http://www.parks.ca.gov/parkindex/region_info.asp?id=6&tab=1 [accessed on June 20, 2010].

City of Hollister. 2001. *Parks and Recreation Master Plan*. Adopted 2001 [online] http://www.hollister.ca.gov/Site/html/about/parkMsPlan.asp [accessed on May 14, 2010].

———. 2005. *City of Hollister General Plan*. Adopted December 5, 2005. Amended June 18, 2007.[online] http://www.hollister.ca.gov/Site/html/about/documents/Chapter5_000.pdf [accessed May 14, 2010].

———. *List of Parks and Facilities*. [online] http://www.hollister.ca.gov/Site/html/gov/office/recreation/parkfac.asp [accessed on May 14, 2010].

County of San Benito. 1995. *1992 General Plan*. Adopted February 7, 1995. [online] http://www.san-benito.ca.us/departments/planning/general%20plan%20elements/open%20space%20element.htm [accessed May 14, 2010].

———. 2009a. *San Benito County, CA Code of Ordinances*. Adopted January 6, 2009. [online] http://www.amlegal.com/nxt/gateway.dll/California/sanbenitocounty_ca/sanbenitocountycaliforniacodeofordinance?f=templates$fn=default.htm$3.0$vid=amlegal:sanbenitocounty_ca [accessed May 14, 2010].

HDR. 2008 (November). *Hollister Urban Area Master Plan Implementation Program. Coordinated Water Supply and Treatment Plan*. City of Hollister, San Benito County, San Benito County Water District, and Sunnyslope County Water District. Walnut Creek, CA.

Section 3.14, "Visual Resources"

California Department of Transportation. 2010. California Scenic Highway Mapping System. Available: <http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm>. Accessed May 19, 2010.

City of Hollister. 2005a. *City of Hollister General Plan*. Hollister, CA.

———. 2005b. *Final Environmental Impact Report: City of Hollister General Plan* (March 2005 Public Review Draft). Hollister, CA.

San Benito County. 1992. *County of San Benito General Plan Scenic Roads and Highways Element*. Available: <http://www.sanbenitogpu.com/docs.html#1992GP>. Accessed May 20, 2010.

———. 2003. *Draft Program Environmental Impact Report: Groundwater Management Plan Update for the San Benito County Portion of the Gilroy-Hollister Groundwater Basin*.

———. 2010. Code of Ordinances. Available: <http://www.amlegal.com/nxt/gateway.dll/California/sanbenitocounty_ca/title19landuseandenvironmentalregulation/chapter1931developmentlighting?f=templates$fn=document-frameset.htm$q=748%20$x=server$3.0#LPHit1>. Accessed May 20, 2010.

Chapter 4, "Cumulative Impacts"

City of Hollister. 2005 (December). *City of Hollister General Plan*. Available: <http://www.hollister.ca.gov/Site/html/about/Genplan2005.asp>. Adopted December 5, 2005. Amended June 18, 2007. Hollister, CA. Accessed June 21, 2010.

———. 2009 (November). *City of Hollister Housing Element of the General Plan*. City of Hollister, CA.

San Benito County. 1995. *The San Benito County General Plan*. Hollister, CA.

———. 2010a. *San Benito County Draft Housing Element 2007-2014*. Available: <http://www.san-benito.ca.us/departments/planning/>. Accessed June 16, 2010.

———. 2010b (March). *General Plan Public Review Draft Background Report*. Available: <http://www.sanbenitogpu.com/docs.html#BR>. Accessed June 17, 2010.

San Benito County Water District Water Resources Association. 2003. *Draft Program Environmental Impact Report, Groundwater Management Plan Update for the San Benito County Portion of the Gilroy-Hollister Valley Groundwater Basin.* Prepared by David J. Powers & Associates, San Jose, CA.

Chapter 5, "Program Alternatives"

HDR. 2008 (November). *Hollister Urban Area Water and Wastewater Master Plan*. City of Hollister, San Benito County, San Benito County Water District, and Sunnyslope County Water District. HDR, Walnut Creek, CA.

———. 2010 (November). *Hollister Urban Area Master Plan Implementation Program. Coordinated Water Supply and Treatment Plan*. Revised January 2010. HDR, Walnut Creek, CA. RMC, San Jose, CA.

Chapter 6, "Other CEQA-Required Sections"

Association of Monterey Bay Area Governments. 2008 (June). *Monterey Bay Area 2008 Regional Forecast Population, Housing Unit, and Employment Projections for Monterey, San Benito, and Santa Cruz Counties to the Year 2035*. Available: <http://www.ambag.org/programs/blueprint/forecast/index.html>. Accessed June 23, 2010.

California Department of Finance. 2010 (January). E-5: City/County Population and Housing Estimates. Available: <http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E5/E5-06/E-5text2.asp>. Accessed June 17, 2010.

Chapter 7, "Report Preparers and Reviewers"

No references for this section.

Chapter 9, "Public Review and Comment"

No references for this section.

Chapter 10. "Errata–Edits to the PEIR"

No references for this section.

9 PUBLIC REVIEW AND COMMENT

9.1 OVERVIEW

This section describes the public outreach and review periods during preparation of the PEIR. Throughout preparation of the Master Plan and Coordinated Plan and continuing through preparation of the PEIR, the lead agency and responsible parties have conducted a transparent and open process informing elected officials and the public with regular updates at Board and City Council meetings, mailing notices to interested parties, publishing notices in local newspapers (the Pinnacle and the Hollister Free Lance), and hosting a booth at the County Fair. In addition to these ongoing updates, the PEIR preparation process included a 30-day scoping period from June 22, 2010 to July 22, 2010 and a 45-day public review period for the Draft PEIR from October 4, 2010 through November 17, 2010. One letter was received during the scoping period and one letter was received during the Draft PEIR review period. Both letters were from SWRCB and concern Program funding. No other comments from the public or agencies were received on the PEIR.

9.2 SCOPING

On June 22, 2010, SBCWD issued a Notice of Preparation announcing the intended preparation of the Draft PEIR and describing its proposed scope. SBCWD held a public scoping meeting at 6pm on July 15, 2010 in Hollister to provide an opportunity for interested parties to learn about the proposed Program and provide input on the scope of the PEIR. The meeting was noticed in local newspapers (the Pinnacle and the Hollister Free Lance). Announcements were mailed to the interested parties' mailing list that had been compiled during development of the Master Plan. Representatives from the lead agency and each of the three responsible agencies (City, County, and SSCWD) were present. After waiting 30 minutes, the public scoping meeting was concluded with no members of the public attending. The NOP is included in Appendix A. The newspaper ad and proof of publication are included in Appendix C.

One letter was received during the public scoping period, submitted by SWRCB. The letter concerned potential Program funding and did not include comments on the scope or content of the PEIR. The letter is included in Appendix A.

9.3 DRAFT PEIR PUBLIC REVIEW

SBCWD made the Draft PEIR available to public agencies and interested parties on October 4, 2010 for review and comment. A notice of availability (NOA) was published and the period for receipt of comments on the Draft PEIR remained open for a period of 45 days, until close of business on November 17, 2010. Notices of a public comment hearing on the Draft PEIR were published in local newspapers, mailed to the interested parties' mailing list, posted on the SBCWD website, and distributed at the San Benito County Fair (October 1–3, 2010). A public hearing was held at 6pm on Thursday, October 21, 2010 in Hollister to receive written or oral comments on the Draft PEIR. Representatives from the lead agency and each of the three responsible agencies (City, County, and SSCWD) were present. After waiting 30 minutes, the public hearing was concluded with no members of the public attending.

A comment letter was received from one agency, SWRCB. The letter concerned potential Program funding and did not include comments on any environmental issues pertaining to the Program or addressed in the Draft PEIR. A letter was received from the State Clearinghouse dated November 18, 2010 confirming that the SWRCB letter was the only comment letter submitted. Both letters are included in Appendix C.

9.4 RESPONSE TO COMMENTS

Section 15088(a) of the State CEQA Guidelines, as amended, states that a lead agency "shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response." SBCWD received one letter during the public review submitted by SWRCB. The letter concerns additional review requirements should State Revolving Funds be requested for elements of the Program. SBCWD has reviewed the letter and determined that it does not address any environmental issues related to the Program. The comment is noted and the lead agency and responsible parties recognize that if State Revolving Funding is pursued, additional environmental requirements (CEQA plus) must be met.

10 ERRATA—EDITS TO THE PEIR

The following corrections and/or clarifications have been made to the PEIR text. These include minor corrections to improve writing clarity, grammar, typographical errors, and consistency. Revisions are organized by the chapter, section, and page number that appear in the PEIR. Deletions are indicated by "~~strikeout~~" text and new text is indicated by "underlined" text.

"Executive Summary"

This Final Programmatic Environmental Impact Report (Final PEIR) for the Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan (Program) consists of the Draft Programmatic Environmental Impact Report (Draft PEIR) dated October 4, 2010, plus errata and revisions included herein as Chapter 10, written comments received by the San Benito County Water District (SBCWD) on the Draft PEIR, and SBCWD's response to those comments (Chapter 9).

There were no comments received on the Draft PEIR that required any modifications to the Draft PEIR, including changes in the evaluation of potential environmental impacts, mitigation measures, or significance determinations. Any edits to the Draft PEIR are underlined or shown as strikeouts as needed.

Section ES.4, "Purpose of this Program EIR"

Page ES.2:

As the lead agency under CEQA, SBCWD has determined that implementation of the proposed Program may have significant effects on the environment and has directed the preparation of this ~~draft~~ PEIR to analyze these potentially significant effects. The City, County, and SSCWD are responsible agencies under CEQA, and with SBCWD, are collectively considered to be the Program proponent.

To certify the PEIR, SBCWD must find that this PEIR has been completed in compliance with CEQA. Under the programmatic approach, additional technical analyses and environmental compliance will be necessary prior to implementation of some of the future actions. Additional mitigation monitoring and reporting programs related to future implementation would be developed and required as part of future project-level environmental documentation as needed.

Section ES.11, "Public Review and Comment"

Page ES-40:

Throughout preparation of the Master Plan and Coordinated Plan and continuing through preparation of the PEIR, the lead agency and responsible parties have conducted a transparent and open process informing elected officials and the public with regular updates at Board and City Council meetings, mailing notices to interested parties, publishing notices in local newspapers (the Pinnacle and the Hollister Free Lance), and hosting a booth at the County Fair. In addition to these ongoing updates, the PEIR preparation process included a 30-day scoping period from June 22, 2010 to July 22, 2010 and a 45-day public review period for the Draft PEIR from October 4, 2010 through November 17, 2010. One letter was received during the scoping period and one letter was received during the Draft PEIR review period. Both letters were from the State Water Resources Control Board (SWRCB) and concern Program funding. No other comments from the public or agencies were received on the PEIR. Chapter 9, "Public Review and Comment," provides SBCWD's response to the comments received from SWRCB.

Chapter 1, "Introduction"

Page 1-1. This Final Programmatic Environmental Impact Report (Final PEIR) for the Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan (Program) consists of the Draft Programmatic Environmental Impact Report (Draft PEIR) dated October 4, 2010, plus errata and revisions included herein as Chapter 10, written comments received by the San Benito County Water District (SBCWD) on the Draft PEIR, and SBCWD's response to those comments (Chapter 9).

There were no comments received on the Draft PEIR that required any modifications to the Draft PEIR, including changes in the evaluation of potential environmental impacts, mitigation measures, or significance determinations. Any edits to the Draft PEIR are underlined or shown as strikeouts as needed.

Section 1.5, "Purpose of this Program EIR"

Page 1-9:

As the lead agency under CEQA, SBCWD has determined that implementation of the proposed Program may have significant effects on the environment and has directed the preparation of this ~~draft~~ PEIR to analyze these potentially significant effects. The City, County, and SSCWD are responsible agencies under CEQA, and with SBCWD, are collectively considered to be the Program proponent.

To certify the PEIR, SBCWD must find that this PEIR has been completed in compliance with CEQA. Under the programmatic approach, additional technical analyses and environmental compliance under CEQA will be necessary prior to implementation of some of the future actions. Additional mitigation monitoring and reporting programs related to future implementation would be developed and required as part of future project-level environmental documentation as needed.

Section 1.5.1, "Intended Use of PEIR"

Page 1-9

This ~~draft~~ PEIR presents a Program-level analysis of the significant environmental effects that could result as Program elements are implemented. The PEIR has been prepared in accordance with the requirements of CEQA and the State CEQA Guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et seq.), as amended. This PEIR does not contain any project-level analysis. Consequently, no Program element, unless already approved under CEQA at a project level or exempted from CEQA, can be implemented without further CEQA documentation beyond this PEIR.

Section 1.6, "Public Participation and CEQA Process"

Page 1-11

~~On June 22, 2010, SBCWD issued a notice of preparation (NOP) of a draft PEIR and filed the NOP with the State Clearinghouse. The 30-day public comment period on the NOP ended on July 22, 2010. A scoping meeting was held in Hollister on July 15, 2010, to solicit input on the scope of the draft PEIR from interested agencies, individuals, and organizations. The NOP and copies of the scoping comments provided to SBCWD during the scoping period are included in Appendix A.~~

~~In accordance with CEQA review requirements, this draft PEIR is being distributed for public and agency review and comment for a 45-day period, which ends on November 17, 2010. This distribution ensures that interested parties have an opportunity to express their views regarding the significant environmental effects of the project and ensures that information pertinent to permits and approvals is provided to the decision makers for SBCWD~~

~~and the CEQA responsible agencies. This document is available for review by the public during normal business hours at the SBCWD office at 30 Mansfield Road, Hollister, California 95024 and online at www.sbcwd.com.~~

~~A public meeting will be held during the comment period to receive input from agencies and the public on the draft PEIR. The meeting will be held on October 21, 2010 at 6:00 p.m. at the Veteran's Memorial Building, Room 218, 640 San Benito Street, Hollister, California. In addition, written comments from the public, reviewing agencies, and stakeholders will be accepted throughout the 45-day public comment period. Comments must be received by SBCWD **by 5:00 p.m. on November 17, 2010**, at the following address, fax number, or e-mail address:~~

~~Attn: Jeff Cattaneo, District Manager~~
~~San Benito County Water District~~
~~30 Mansfield Road~~
~~Hollister, CA 95023~~
~~Fax number: (831) 637-8218~~
~~E-mail address: jcattaneo@sbcwd.com~~

~~If comments are provided via e-mail, *please include the project title in the subject line, attach comments in MS Word format, and include the commenter's U.S. Postal Service mailing address.*~~

~~Following consideration of these comments, SBCWD will prepare written responses to comments on environmental issues, and prepare a final PEIR that will describe the disposition of any significant environmental issues raised in the comments on the draft PEIR. Written responses must be provided to public agencies on comments made by those agencies at least 10 days before the PEIR can be certified. Following this 10-day period, SBCWD will consider certifying the final PEIR if it is determined to be in compliance with CEQA, and will rely on the certified final PEIR when considering approval of the proposed Program.~~

Throughout preparation of the Master Plan and Coordinated Plan and continuing through preparation of the PEIR, the lead agency and responsible parties have conducted a transparent and open process informing elected officials and the public with regular updates at Board and City Council meetings, mailing notices to interested parties, and hosting a booth at the County Fair. In addition to these ongoing updates, the PEIR preparation process included a 30-day scoping period from June 22, 2010 to July 22, 2010 and a 45-day public review period for the Draft PEIR from October 4, 2010 through November 17, 2010. One letter was received during the scoping period and one letter was received during the Draft PEIR review period. Both letters were from SWRCB and concern Program funding. No other comments from the public or agencies were received on the PEIR. Chapter 9, "Public Review and Comment," provides SBCWD's response to the comments received from SWRCB.

Section 1.7, "~~Draft~~ PEIR Organization"

Page 1-12:

This ~~draft~~ PEIR is organized as follows:

- **Chapter 1, "Introduction,"** describes the purpose, context, and organization of the ~~draft~~ PEIR and the relevant conditions, circumstances, and history of water, wastewater, and recycled water planning and management.

- **Chapter 7, "Report Preparers and Reviewers,"** identifies the preparers and reviewers of this ~~draft~~ PEIR.

- **Chapter 9, "Public Review and Comment,"** describes public involvement in program development, PEIR scoping, PEIR preparation, and PEIR request for comment and the response to the comments received.

- **Chapter 10, "Errata—Edits to the PEIR,"** shows the text changes made to the draft PEIR since it was published in October 2010.

Chapter 3, "Environmental Setting, Impacts, and Mitigation Measures"

Section 2, "Water Resources"

Page 3.2-34:

The proposed Program anticipates that approximately 6 mgd of surface water treatment capacity would be needed in the HUA by 2015. This capacity would be divided between the Lessalt WTP and the new WTP to ~~optimizethe~~ optimize the supply of high quality water in the distribution system while reducing total project costs. The Lessalt WTP would be upgraded to allow the facility to operate at its originally intended capacity of 3 mgd. Therefore, the capacity of the new WTP is expected to be approximately 3 mgd. Determination of the exact location and capacity of this new treatment plant would be based on water supply availability and the results of facilities planning studies. Upgrades to the Lessalt WTP would be completed by 2013, and construction of the new surface WTP would be completed by 2014.

Section 12, "Noise"

Impact Analysis, page 3.12-15:

IMPACT 3.12-1	Expose Noise Sensitive Receptors to Temporary Short-Term Construction Noise Levels. *Short-term construction source noise levels could exceed applicable standards at nearby noise-sensitive receptors. In addition, if construction activities were to occur during more noise-sensitive hours, construction source noise levels could also result in annoyance and/or sleep disruption to occupants of noise-sensitive land uses and create a substantial temporary increase in ambient noise levels. ~~Less than significant with mitigation~~ Potentially Significant and Unavoidable.*

(Note: The edit above corrects a typographical error and does not represent a change in the impact conclusion. This noise impact was found to be potentially significant and unavoidable. It is shown correctly in the impact analysis text on page 3.12-17, in Table ES-3 Summary of Impacts and Mitigation Measures on page ES-33, in Table 5-3 Summary of Program Impact Levels before and after Mitigation on page 5-4, and in the summary of impacts on page 6-5. It is discussed correctly as a potentially significant and unavoidable impact in the discussion of residual significant noise impacts on page 3.12-22, in the discussion of significant and unavoidable impacts on page ES-6, and in the Cumulative Impacts chapter on page 4-15.)

Chapter 8, "References"

Page 8-20:

Chapter 9, "Public Review and Comment"

No references for this section.

Chapter 10. "Errata–Edits to the PEIR"

No references for this section.

Chapter 9, “Public Review and Comment”

Pages 9-1 and 9-2 are new text.

Chapter 10, “Errata – Edits to the PEIR”

Pages 10-1 through 10-5 are new text.

This page intentionally left blank.

APPENDIX A

Notice of Preparation and Comment Letters

San Benito County Water District

30 Mansfield Road • P.O. Box 899 • Hollister, CA 95024-0899
Phone: (831) 637-8218 • Fax: (831) 637-7267

DATE: June 22, 2010

TO: Governor's Office of Planning and Research/State Clearinghouse Unit, Responsible Agencies, Trustee Agencies, and Interested Parties

FROM: San Benito County Water District

SUBJECT: Notice of Preparation of a Programmatic Environmental Impact Report for the Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan, and Notice of Public Scoping Meeting

NOTICE OF PREPARATION PUBLIC REVIEW PERIOD: June 22 – July 22, 2010

PUBLIC SCOPING MEETING: July 15, 2010 at 6 p.m. at the Veteran's Memorial Building, Room 218, 640 San Benito Street, Hollister, CA 95023

The City of Hollister (City), San Benito County (County), San Benito County Water District (SBCWD), and Sunnyslope County Water District (SSCWD) (hereafter referred to as the Memorandum of Understanding [MOU] Parties) propose to implement a comprehensive water and wastewater program (Program) to meet the existing and future water resources reliability and water quality needs of the Hollister Urban Area. The proposed Program would implement recommendations from the 2008 Hollister Urban Area Water and Wastewater Master Plan and the Hollister Urban Area Coordinated Water Supply and Treatment Plan (2009), which updates the 2008 Master Plan water supply and treatment recommendations with respect to current conditions including Delta export pumping limits, the Hollister Conduit capacity, recycled water quality needs, slower growth in water demands, and the economic downturn.

As lead agency, SBCWD intends to prepare a programmatic environmental impact report (PEIR) in accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, §21000 et seq.; see also 14 CCR Sections 15220, 15222 [State CEQA Guidelines]) to evaluate the significance of potential environmental impacts that could result from Program implementation. The City, County, and SSCWD will be responsible agencies.

SBCWD has prepared this Notice of Preparation (NOP) in accordance with Section 15082 of the CEQA Guidelines to inform all responsible and trustee agencies and interested parties that a PEIR will be prepared. The purpose of this NOP is to provide sufficient information about the proposed Program and its potential environmental impacts to allow the Governor's Office of Planning and Research (OPR), responsible and trustee agencies, and interested parties with the opportunity to provide a meaningful response related to the scope and content of the PEIR, including significant environmental issues and reasonable alternatives and mitigation measures. As CEQA lead agency, SBCWD will receive and compile comments on this NOP and the PEIR. All four MOU Parties will work together closely on development, environmental review, and implementation of the Program as described in their MOU. SBCWD will convene a public scoping meeting on July 15, 2010

during the 30-day NOP public review period to allow agencies and the public to provide input on the scope and content of the PEIR. The scoping meeting shall satisfy the meeting requirement for projects of statewide, regional, or area-wide significance (see State CEQA Guidelines, Section 15082, subd. [c]). Comments on the NOP are due to SBCWD by 5:00 p.m. on July 22, 2010.

PROGRAM LOCATION

The Hollister Urban Area (HUA) is located in San Benito County, California, approximately 50 miles southeast of the City of San Jose and 40 miles east of Monterey Bay (Exhibit 1). The HUA includes the City of Hollister and adjacent unincorporated areas of San Benito County designated for urban development as shown in Exhibit 2. The objective of the master plan is to provide a comprehensive program of water and wastewater management actions and infrastructure improvements to meet the long-term needs of water resources in the HUA.

PROGRAM SUMMARY

The comprehensive Program developed by the MOU Parties is intended to meet the existing and future water supply, domestic water treatment, wastewater treatment, and recycled water needs of the HUA through 2023. The HUA has a diverse and complex water supply system that includes groundwater, local rivers and creeks, imported surface water, and opportunities for recycled water use. The comprehensive Program includes water and wastewater treatment facility improvements, groundwater management and treatment projects, and water management actions. Facilities and actions associated with the Program may include new and upgraded water treatment facilities, new groundwater wells, demineralization of existing groundwater wells, groundwater banking, new water storage facilities, improvements to wastewater treatment and collection, and additional recycled water facilities.

Program objectives are to:

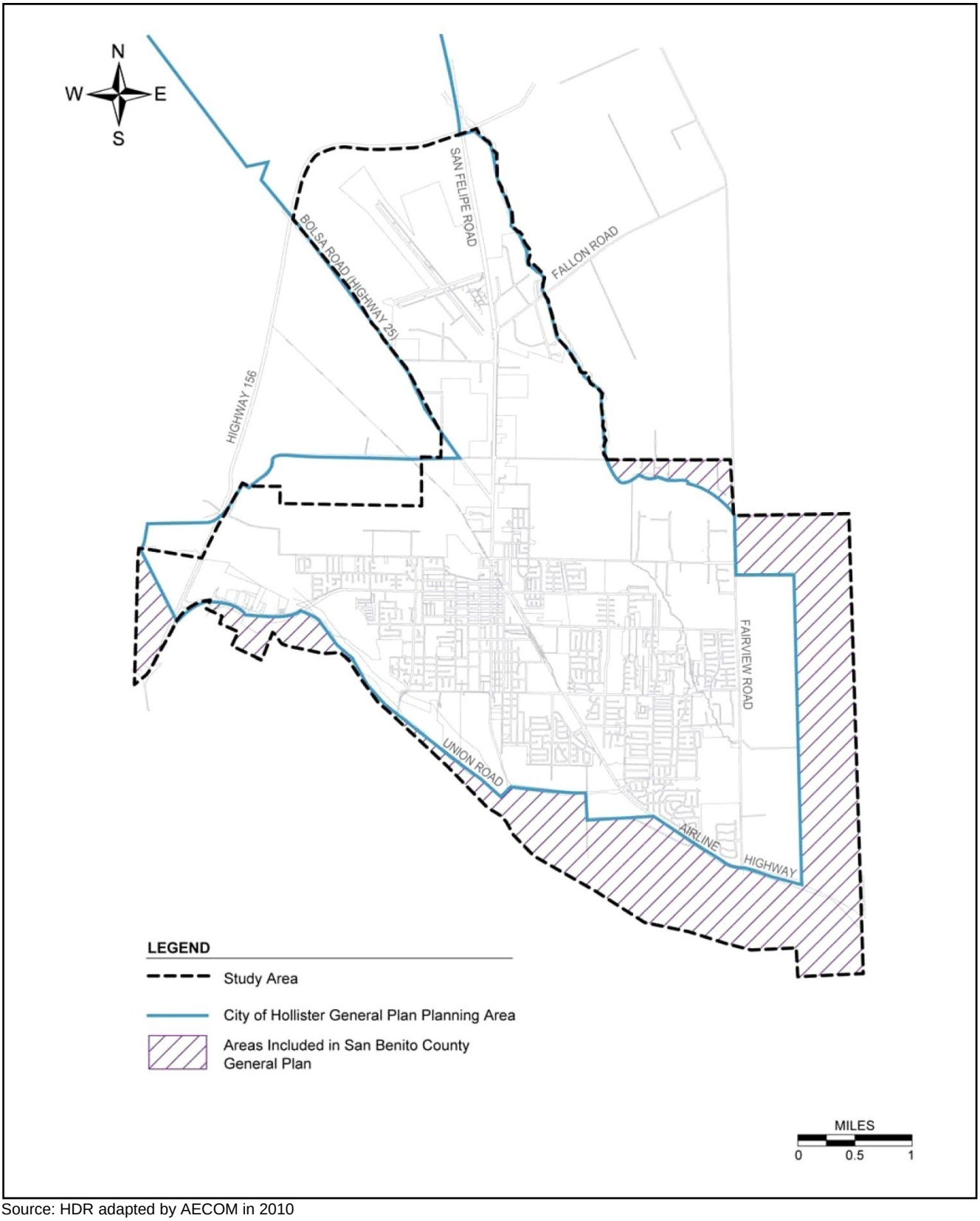
- Improve municipal, industrial, and recycled water quality
- Increase the reliability of the water supply
- Coordinate infrastructure improvements for water and wastewater systems
- Implement goals of the Groundwater Management Plan
- Integrate the Long-term Wastewater Management Program
- Support economic growth and development consistent with the City of Hollister and San Benito County General Plans and Policies
- Consider regional issues and solutions

PROGRAM BACKGROUND

This section describes the Program background and current conditions in the HUA for water supply, water treatment, wastewater, and recycled water in order to provide context for the proposed Program. Exhibit 3 shows the major existing water facilities, and Exhibit 4 shows the major existing wastewater facilities.

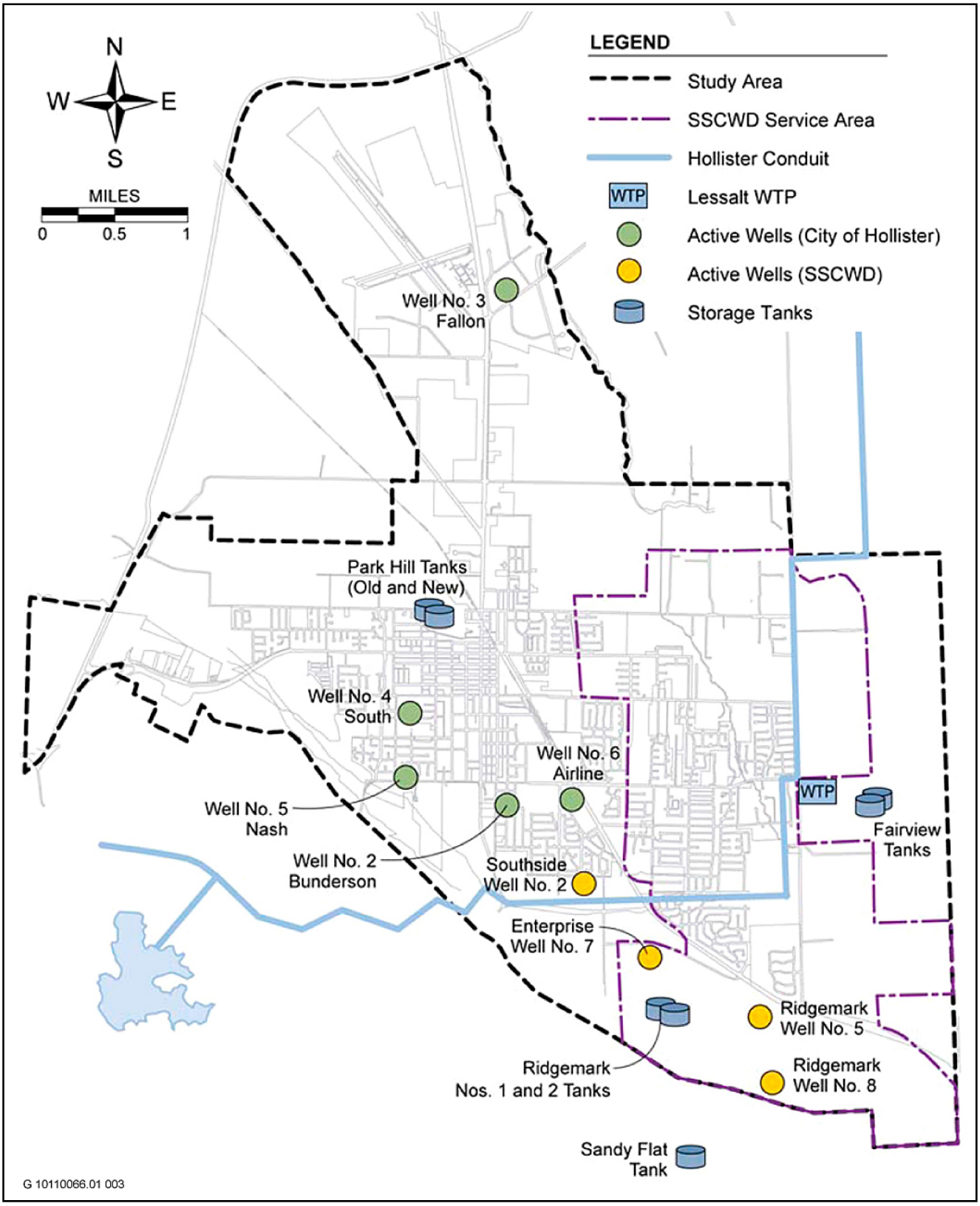
Source: HDR adapted by AECOM in 2010

Regional Context Map **Exhibit 1**



Source: HDR adapted by AECOM in 2010

Hollister Urban Area Program Area **Exhibit 2**



Source: HDR adapted by AECOM in 2010

Major Existing Water Facilities **Exhibit 3**

WATER SUPPLY

Municipal and industrial water supply in the HUA is served by a combination of local groundwater and imported surface water from the Federal Central Valley Project (CVP). Imported surface water is supplied to the HUA from the CVP through the San Luis Reservoir, the San Felipe Division facilities, and the Hollister Conduit. As a result of over-commitments of CVP supplies and pumping limitations imposed by environmental constraints, the reliability of imported CVP supplies has been reduced since surface water was first delivered to the County in 1987. For example, in critically dry years, agricultural deliveries may be reduced to less than 20 percent of contract entitlements, and municipal supplies may be reduced to approximately 60 percent of contract entitlements. In multiple dry-year conditions, such as the recent 3-year drought, agricultural supplies may not be available and municipal supplies may be reduced to 50 percent. Based on current trends, it is likely that the reliability of imported surface water supplies will continue to decline in the future as a result of pumping restrictions in the Delta to protect special-status fish species. Additional water needs are met using urban groundwater wells.

Water Treatment

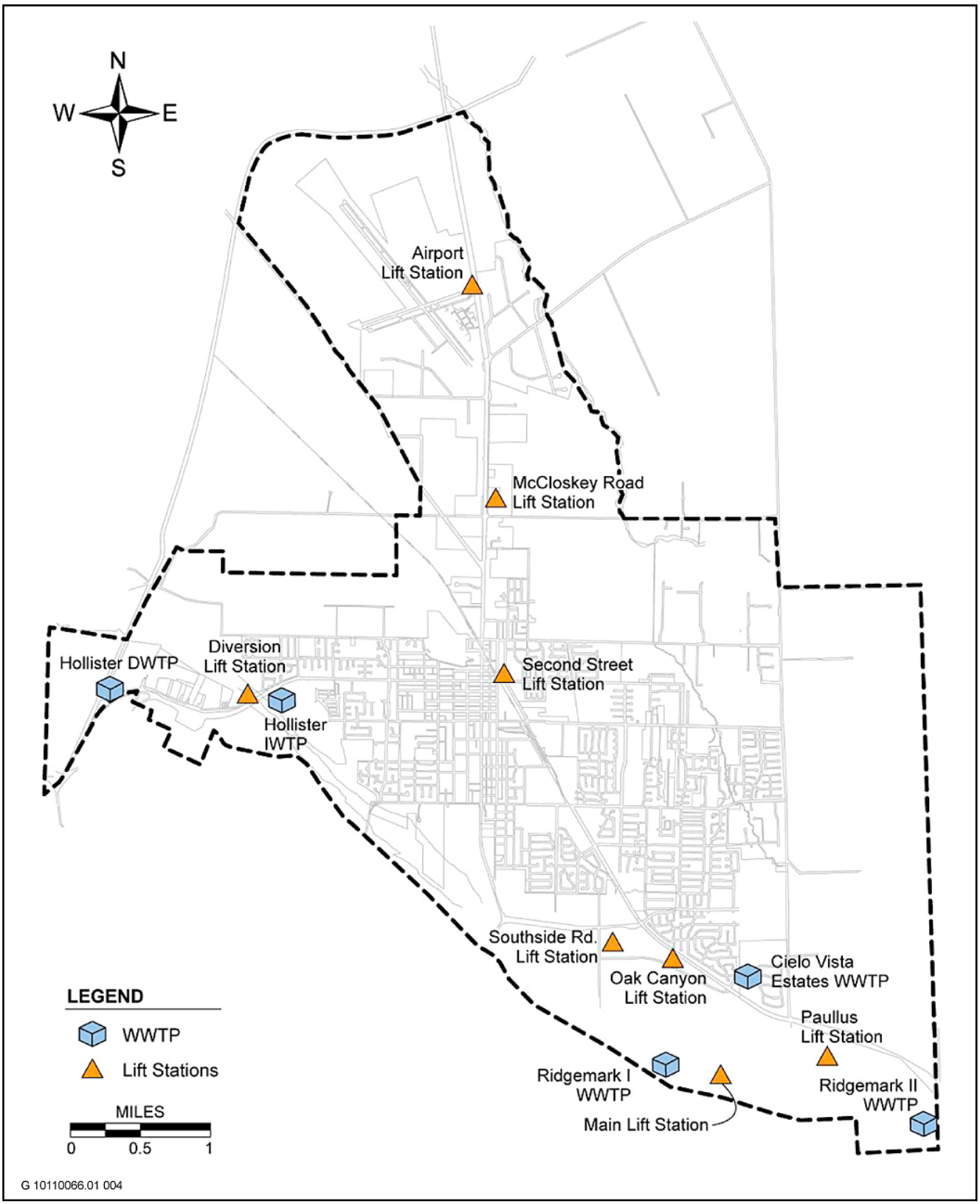
Significant differences between groundwater and imported surface water quality exist with regard to constituent concentrations such as total dissolved solids (TDS), hardness, and nitrates. Historically, TDS concentrations in the local groundwater range from 800 to 1,200 milligrams per liter (mg/L), and imported CVP surface water has TDS concentrations ranging from 250 to 300 mg/L. Total hardness concentrations in the groundwater have ranged from 340 to 480 mg/L as calcium carbonate ($CaCO_3$) and CVP sources have had a hardness concentration of approximately 110 mg/L as $CaCO_3$.

TDS is usually not a health concern, but can be a taste, odor, and color concern for drinking water. At levels over 500 mg/L, TDS can cause gastrointestinal irritation to consumers not used to these levels. Excess sodium may affect those restricted to low sodium diets or those suffering from toxemia. Other concerns include scaling on sinks and fixtures, leaving white spots on cars, deposits in and corrosion of hot water heaters and pipes, and reduced effectiveness of detergent and shampoo. The buildup in water-using appliances can shorten appliance life and increase costs to consumers. Preliminary estimates indicate that local groundwater supplies may reduce the life expectancy of residential appliances by up to 25 percent, as compared with a water supply having a TDS level of 500 mg/L. Other residential costs include home softeners, bottled water, and increased use of soap and detergents.

Wastewater

Five wastewater treatment plants treat the domestic, commercial, and industrial wastewater flows generated within the HUA. The County operates the Cielo Vista Estates Wastewater Treatment Plant. The City owns and operates the Water Reclamation Facility (WRF) south of the San Benito River and the industrial wastewater treatment plant (IWTP) located west of downtown Hollister. The WRF treats the City's domestic wastewater, consisting predominantly of residential, commercial, and industrial customers. The IWTP treats seasonal industrial wastewater from a single cannery and storm water.

The SSCWD operates the Ridgemark wastewater treatment system, consisting of two wastewater treatment plants that serve residential needs and a few commercial businesses located near the Ridgemark Golf Course. The Ridgemark wastewater treatment facilities exceed the salinity requirements set forth in a new waste discharge requirements permit effective January 30, 2010.



Source: HDR adapted by AECOM in 2010

Major Existing Wastewater Facilities **Exhibit 4**

Recycled Water

Historically, relatively high mineral content in wastewater produced within the HUA has limited both disposal and recycling options due to adverse impacts to groundwater and crops. The San Benito County Regional Recycled Water Project was initiated to investigate the feasibility of developing a regional recycled water supply in the northern area of San Benito County. In 2005, the San Benito County Regional Recycled Water Project Feasibility Study Report was released. This study was revisited and a Recycled Water Feasibility Study Update was completed in November 2008. The updated report identifies some new areas as potential locations for recycled water use and contains recommendations for phased implementation of recycled water projects.

The Master Plan MOU identifies 2015 as the target date for providing high quality (i.e., low salinity) recycled water for agricultural use. Prior to 2015, effluent management will include continued percolation and landscape irrigation. Phase 1 of the plan is currently being implemented. In May 2008, the City of Hollister certified the EIR for the City's Reclaimed Water Irrigation Project which included analysis of reclaimed water irrigation at five potential sites. Reclaimed water is now being conveyed from the City's Water Reclamation Facility to Riverside Park for irrigation of open space and landscaping. Reclaimed water facilities are also in place for delivery to spray fields at the Hollister Municipal Airport.

In 2010, SBCWD certified a supplemental EIR for a Reclaimed Water Demonstration Project that would use recycled water treated at the City's Water Reclamation Plan for agricultural irrigation on lands along Wright Road. Potential irrigation areas are located in the immediate vicinity of the Phase 1 recycled water transmission pipeline that extends to the Hollister Municipal Airport.

PROGRAM DESCRIPTION

The comprehensive Program integrates implementation of many components for the MOU Parties to meet the existing and future water needs of the HUA. The Program would be implemented in three phases. The first two phases, which together go through 2023, would be evaluated in the PEIR. The third phase, beyond 2023, is not sufficiently defined at this time to allow meaningful analysis. Some early components of the Program are already being implemented and have CEQA coverage under their own project-level documents. Projects already constructed and operating at the time of publication of this NOP will be discussed as part of the existing conditions in the PEIR. Projects not yet constructed but that have their own CEQA coverage will be considered in the cumulative analysis. To describe the Program, the components have been organized into three categories: (1) water, (2) wastewater, and (3) recycled water. The integrated approach to Program formulation and coordinated implementation is described followed by a discussion of the sequence and timing of phased implementation. Finally, the facilities and actions that would be implemented and evaluated in the PEIR are described.

Integrated Water Resources Approach

The Program was developed with an integrated water resources approach, meaning that the Program comprehensively addresses all aspects of water resources in the HUA including water supply (surface water and groundwater), wastewater, and recycled water. This strategy allows the Program to address the high mineral content of the water supply and future recycled water, the reliability and reduced delivery of imported CVP water during dry years and pumping limitations in the Delta, and the regional wastewater treatment and disposal needs of the HUA. The principal resource issues that the Program was developed to address included the following:

- Quality of drinking water and recycled water
- Reliability of water supply
- Coordination of water and wastewater system improvements
- Regional balance of water resources including high groundwater areas

Sequence and Timing of Implementation

The Program would be implemented in three phases (near-term, intermediate, and long-term). Exhibit 5 shows the timing of the phases and the projects that would occur in each phase of implementation.

Non-Structural Solutions

Master Plan non-structural solutions include water conservation, salinity education, a softener ordinance, and a requirement for dual distribution systems in new developments. These are ongoing activities being implemented by the MOU Parties and are intended to provide reductions in water demand, reduced salinity, and opportunities for the use of recycled water.

Long Term (Beyond 2023)

Phase 3 actions could include demineralization of additional urban wells, increased storage capacity, expansion of the Hollister Water Reclamation Facility, continued expansion of recycled water facilities, and long-term water supply management. The PEIR will only evaluate near-term and intermediate-term actions. The long-term actions will be generally described but not evaluated because they are not sufficiently defined at this time, and are too speculative, for meaningful analysis.

Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan

1. Water

Water Supply

Improved water supply reliability would be achieved through a combination of actions, some involving new construction and others involving coordination with Federal, State, and local agencies.

Purchases or Transfers of Imported Water Supplies

Water management actions may include purchases or transfers of imported water supplies. Water transactions in California are classified as permanent sales of water rights or entitlements, long-term transfers, or temporary transfers (spot market lasting less than 1 year). Out-of-basin groundwater banking is also used to facilitate transfers. Actual water deliveries are subject to the U.S. Bureau of Reclamation (USBR) Shortage Policy and have been curtailed due to drought and Delta pumping restrictions in recent years. Permanent sales and long-term transfers are permanent or temporary reallocation of water from agricultural to urban or environmental uses. These reallocations are often accomplished by temporary or long-term land fallowing. Spot market transfers are negotiated and implemented within a single year. Water is delivered from willing water suppliers north of the Delta using State Water Project (SWP) and CVP facilities. Transfers may also include South Delta contractors. Groundwater banking is accomplished in two ways, including in-lieu recharge and direct recharge. In-lieu recharge involves storing water by utilizing surface water in-lieu of pumping groundwater, thereby retaining or storing an equal amount in the groundwater basin. Direct recharge is accomplished by allowing

Notes:

(a) Non-structural solutions include water conservation, softener ordinance, salinity education, and requirement for dual distribution sytems for new development.

(b) Phase 1 Demineralization includes 3 MGD Capacity; Phase 2 includes expansion to 5 MGD. Need for later phases will be determined based on demand and system optimization.

(c) Potential environmental impacts from Phase 3 implementation will not be evaluated in the PEIR.

Source: HDR adapted by AECOM in 2010

Master Plan Program Phasing **Exhibit 5**

water to percolate directly into the groundwater basin. Each of these actions may trigger environmental review, either under CEQA, NEPA, or the California Water Code, at the location and in the service area of the transfers.

North County Groundwater Bank

Another opportunity for increasing long-term water supply reliability in the HUA would be development of a North County groundwater bank. Currently, there is a surplus of groundwater in the north area, which is creating high groundwater levels and artesian springs. Pumping would lower groundwater levels and could supplement existing surface water supplies. In addition to the North County groundwater bank, a lobe of good water between Pacheco Creek and Arroyo de las Viboras could be pumped. During surplus surface water years, water would be would be put back into the groundwater basin via percolation.

New Urban Wells

As demands increase near the end of Phase 2, additional supply capacity will be needed. This additional capacity could be provided by rehabilitating some of the existing inactive wells or drilling one or more new wells in HUA. The location of new or rehabilitation of existing urban wells would be based upon the results of additional modeling, final operational plans, and the actual rate of growth in water demand.

Water Treatment

To improve water quality in the HUA, the Program proposes to modify existing facilities and construct new water treatment facilities.

Lessalt Water Treatment Plant Upgrades

To maximize use of the Lessalt water treatment plant (WTP) in the near-term and long-term, hydraulic and process modifications would be constructed. The Lessalt WTP was designed with a capacity of 3.0 MGD, but has not realized this capacity due to hydraulic constraints. The Program includes hydraulic improvements to the Lessalt WTP to produce water at its design capacity of 3.0 million gallons per day (MGD).

In addition, water treatment process improvements would be implemented to meet the U.S. Environmental Protection Agency (EPA) Stage 2 Disinfectants and Disinfection Byproducts (D/DBP) Rule that goes into effect on October 1, 2013. Treatment improvements could include combinations of oxidation, coagulation, filtration, disinfection, or other processes as appropriate based on water quality, reliability, and cost.

Under current operation, the Lessalt WTP is shut down when water from the San Justo Reservoir is backfed to the Hollister Conduit. This shutdown is due to the inability of the existing process to treat San Justo Reservoir water iron and manganese concentrations. Process modifications would be installed to address iron and manganese concentrations.

New Surface Water Treatment Plant

A new surface water treatment plant would be located to provide high-quality water supply to the western area of the City, an area that currently receives groundwater. The location and capacity of the new water treatment plant would be determined based on water supply availability and the results of facilities planning studies.

Demineralization of Urban Wells

The water supply plan also includes phased demineralization of urban groundwater. The first phase would include a demineralization capacity of up to 3 MGD. Additional water distribution system modeling and economic analyses are required to optimize the location and operation of the demineralization facilities and determine whether one or multiple demineralization treatment plants would be constructed. These additional studies will be conducted as part of facilities planning and predesign. A concentrated byproduct is produced in the demineralization process that requires disposal. Several disposal options are under consideration. The options will be described and the environmental impacts that could result from disposal will be evaluated.

Water Distribution

With the Lessalt WTP upgrade, water service would be provided to the Ridgemark area of SSCWD. Providing treated water from the Lessalt WTP in combination with enforcing the softener ordinance would allow SSCWD to meet the Waste Discharge Requirements (WDR) requirements for the upgraded Ridgemark WTP. A new pipeline would be installed from the Lessalt WTP south along Fairview Road to provide treated water to the Ridgemark area. A new pump station would also be constructed at the Lessalt WTP.

To satisfy the need for new storage throughout the distribution system, approximately 11 million gallons of new storage would be constructed through the year 2023. The new storage could be provided with a single reservoir within a pressure zone or with a combination of reservoirs. The final location of new storage is dependent on the availability of appropriate land, land use and zoning, the availability of larger diameter piping, and other factors.

2. Wastewater

Management of wastewater would be comprised of three distinct components: treatment, collection, and disposal.

Treatment Plant Improvements

Treatment plant improvements would be implemented to meet the Regional Water Quality Control Board's (RWQCB's) WDR permits and orders. The City has completed improvements at its Water Reclamation Facility (WRF). Sunnyslope County Water District would upgrade and consolidate the two existing Ridgemark wastewater treatment facilities as part of the Program. The Master Plan provides for the future connection of Cielo Vista Estates to the City WRF.

Collection Improvements

Over the planning horizon of this Master Plan (to 2023), development of approximately 2,760 acres is envisioned throughout the HUA including residential, rural, commercial, and industrial properties. Wastewater would be collected in a combination of gravity systems, lift stations, and force mains. Future developments would be required to connect to the collection system and existing septic service areas may be connected to the City wastewater system in the future if water quality or operational problems develop.

Wastewater lift stations are usually located at the low point of the service area. Lift stations would only be used when gravity flow is not possible. Lift stations would be sited as far as practical from present or proposed residential areas to reduce community impacts.

Wastewater Disposal Improvements

Phase 1 interim improvements (for disposal from 2008 to 2015) from the City WRF include a combination of continued percolation at the existing WRF and IWTP disposal ponds, implementation of a partially-lined seasonal storage reservoir that facilitates percolation, and spray field/recycled water irrigation.

For the proposed Ridgemark Wastewater Treatment Plant (WWTP) upgrade, initial disposal would be by percolation. Future disposal would be by use of recycled water at the Ridgemark Golf Course.

3. Recycled Water

The MOU identifies 2015 as the target date for providing high quality (i.e., low salinity) recycled water for agricultural use. The period before 2015 is referred to as the Phase 1 Reclaimed Water Program. After 2015, the salinity content of the recycled water would be reduced to levels acceptable for agricultural use; this period is referred to as the Phase 2 Recycled Water Program.

The Phase 2 Recycled Water Program (for disposal from 2015 to 2023 and beyond) includes the addition of a recycled water distribution system to provide a high-quality water supply for primarily agricultural uses. However, service to other customers in the region including urban use such as park irrigation and golf course irrigation may also be provided. This second phase is contingent on recycled water salinity levels being reduced to meet crop and landscaping water quality requirements.

Recycled water would be distributed to agricultural users in the Wright Road/McCloskey Road corridor (Wright/McCloskey corridor). The Phase 1 transmission pipeline was constructed with sufficient capacity to also serve Phase 2. For Phase 2A, the Phase 1 transmission pipeline would be extended from the intersection of Wright Road and Briggs Road, east along McCloskey Road to Fairview Road.

As development in Wright/McCloskey corridor occurs and recycled water production exceeds irrigation demands within this area, Phase 2B would be implemented. The Phase 2A facilities would provide opportunities for future Phase 2B use in the Lone Tree area, Santa Ana Valley, the area east of Fairview Road, San Juan Valley, and other areas.

In addition to the Phase 1 and Phase 2 facilities which would deliver water from the City's WRF, the Ridgemark WWTP would also produce recycled water. SSCWD plans to pursue seasonal recycled water use at the Ridgemark Golf Course.

POTENTIAL ENVIRONMENTAL EFFECTS

The PEIR will identify, describe, and evaluate the significance of the potential environmental impacts associated with implementation of the Program as described. An initial study has not been prepared because the PEIR will address all of the potentially significant adverse environmental effects of the proposed Program. The PEIR will also include feasible mitigation measures and consideration of a reasonable range of alternatives to avoid or substantially reduce the proposed Program's significant adverse environmental effects. The program-level analysis will consider the broad environmental effects of implementing the Program.

The following environmental issues will be evaluated in the PEIR. Information regarding the probable environmental effects of the proposed Program is provided below as required by CEQA Guidelines Section 15082(a)(1)(C). It is assumed that implementation of the proposed Program would result in potential

environmental effects in all issue areas described below; however, the actual effects will be identified during the PEIR process. The PEIR will address direct, indirect, and cumulative effects in all issue areas. The PEIR will include feasible mitigation measures to reduce significant or potentially significant environmental impacts, where appropriate.

1. Air Quality, Global Climate Change, and Odors

The PEIR will describe regional and local air quality in the vicinity of the Program area and evaluate potential construction- and operations-related impacts to air quality. The contribution of the Program's emissions to global greenhouse gasses will be quantified and measures to reduce emissions will be proposed as necessary. Sensitive receptors will be identified and potential odor-generating aspects of the Program will be discussed relative to the sensitive receptors.

2. Biological Resources

Program implementation has the potential to affect groundwater and surface water levels both directly and indirectly. Changes to groundwater levels could change the hydrology in surface waters in the area, including in Pacheco Creek. Seasonal streamflow changes could adversely affect fish populations and other aquatic species. The PEIR will address potential impacts on fisheries and other biological resources, with an emphasis on any special-status fish, wildlife, or plant species, including steelhead trout in Pacheco Creek and downstream.

3. Cumulative Impacts

The PEIR will analyze the potential cumulative impacts of the proposed Program in conjunction with past, present, and reasonably foreseeable related projects as relevant to each of the environmental technical sections.

4. Cultural and Historic Resources

Implementation of the Program would result in the construction of new facilities and modifications to existing facilities. The PEIR will describe the procedures by which the lead and responsible agencies would document location of potential cultural and historic resources and the methods for reducing the significance of any potentially significant impacts on cultural resources.

5. Geology, Soils, Mineral Resources, and Paleontological Resources

The analysis and discussion in the PEIR for the implementation of the Program will pertain to the impact mechanisms that are applicable to the construction of projects relating to geologic hazards, soils, mineral resources, and potential paleontological resources.

6. Growth Inducement

The PEIR will analyze the potential for the proposed Program to induce additional growth on adjacent lands and in the region.

7. Hydrology and Water Quality

The PEIR will describe how implementation of the Program components could impact hydrology and water quality in the Program area including alteration of drainage patterns, erosion, storm water discharges, and potential flooding, including effects on Pacheco Creek streamflows.

8. Land Use and Planning

The PEIR will describe effects on land use planning and agricultural practices that could result from improved water quality and water management alternatives to improve reliability for agricultural and municipal and industrial land uses.

9. Noise

The PEIR will describe potential construction-related noise impacts that could result from implementation of the Program and will describe the methods for construction activities to comply with applicable noise thresholds.

10. Population, Employment, and Housing

The PEIR will evaluate the Program's effects on population, employment, and housing in the HUA, especially as they relate to improved water quality and reliability.

11. Public Health and Hazards

The PEIR will evaluate the impact mechanisms that could affect public health through exposure to hazards and hazardous materials. The means by which public health risks could be minimized during implementation of projects under the Program will be described.

12. Public Utilities, Services, and Recreation

The PEIR will describe current capacity of the water, wastewater, natural gas, and electrical systems and evaluate how implementation of elements of the Program could impact these systems. Potential impact to schools will be evaluated as it relates to population and housing growth that could occur from improved water quality and reliability. Potential effects of the use of recycled water at recreational facilities such as golf courses and public parks will be discussed.

13. Transportation and Traffic

The PEIR will evaluate the Program's potential impacts to regional and local transportation facilities based on the types of projects that would be constructed.

14. Visual Resources

The PEIR will identify existing scenic resources and will describe the elements of the Program that could modify these resources.

15. Water Supply and Availability

The PEIR will describe the potential effects that implementation of the Program could have on groundwater and surface water supplies. The possible effects of the use of recycled water on the availability of groundwater and surface water supplies will be evaluated.

DISCUSSION OF ALTERNATIVES

CEQA Guideline Section 15126.6(a) requires that an EIR describe a range of reasonable and potentially feasible alternatives to the proposed Program. The alternatives must feasibly attain most of the objectives of the proposed Program while also avoiding or substantially lessening at least one of the significant environmental effects of the proposed Program. The PEIR will identify alternatives to the Program, in part, by public comment received during the NOP comment period. To ensure that the full range of issues and alternatives related to the proposed Program are adequately addressed and that all significant issues are identified, comments and suggestions are invited from all interested parties. Potential alternatives under consideration for the PEIR include increases in imported surface water and more extensive demineralization of groundwater. The PEIR will also evaluate the required "No-Project" Alternative.

SCOPING MEETINGS

A scoping meeting will be held at 6:00 p.m. on Thursday July 15, 2010 to solicit input from public agencies and interested parties. The meeting will be held at:

Veteran's Memorial Building
Room 218
649 San Benito Street
Hollister, CA 95023

WRITTEN COMMENTS

Written comments concerning the PEIR must be directed to SBCWD's general manager at the following address no later than 5:00 p.m. on July 22, 2010. All comments must include full name and address for staff to respond appropriately. Please address all comments or questions to:

San Benito County Water District
c/o: Jeff Cattaneo, District Manager
30 Mansfield Road
Hollister, CA 95023
(831) 637-8218
jcattaneo@sbcwd.com

State Water Resources Control Board

Division of Financial Assistance
1001 I Street • Sacramento, California 95814 • (916) 341-5700 FAX (916) 341-5707
Mailing Address: P.O. Box 944212 • Sacramento, California • 94244-2120
Internet Address: http://www.waterboards.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

RECEIVED
JUL 16 2010
SAN BENITO COUNTY WATER DISTRICT

JUL 14 2010

Mr. Jeff Cattaneo
San Benito County Water District
30 Mansfield Road
Hollister, CA 95023

Dear Mr. Cattaneo:

NOTICE OF PREPARATION (NOP) FOR SAN BENITO COUNTY WATER DISTRICT (DISTRICT); HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN AND COORDINATED WATER SUPPLY AND TREATMENT PLAN (PROJECT); STATE CLEARINGHOUSE NO. 2010061069

Thank you for the opportunity to review the above document. We understand that the District is not currently pursuing Clean Water State Revolving Fund (CWSRF) financing for this Project. As a funding agency and a state agency with jurisdiction by law to preserve, enhance, and restore the quality of California's water resources, the State Water Resources Control Board (State Water Board) is providing comments on the California Environmental Quality Act (CEQA) document prepared for the Project.

The District may want to consider the CWSRF Program to provide funding for future construction. The State Water Board, Division of Financial Assistance, is responsible for administering CWSRF financing. The primary purpose for the CWSRF Program is to implement the Clean Water Act and various state laws by providing financial assistance for wastewater treatment facilities necessary to prevent water pollution, recycle water, correct nonpoint source and storm drainage pollution problems, and provide for estuary enhancement, thereby protecting and promoting health, safety and welfare of state inhabitants. The CWSRF Program provides low-interest funding equal to one-half the most recent State General Obligation Bond Rates with a 20-year term. Applications are accepted and processed continuously. For more information refer to the State Water Board's CWSRF website at: www.waterboards.ca.gov/waterissues/programs/grantsloans/srf/index.shtml.

The CWSRF Program is partially funded by the United States Environmental Protection Agency (USEPA) and requires additional "CEQA-Plus" environmental documentation and review. Four information sheets are included that further explain the environmental review process and additional federal requirements in the CWSRF Program. In addition, an environmental evaluation form is included for the District to submit should it pursue State Water Board funding. The State Water Board can consult directly with agencies responsible for implementing federal environmental laws and regulations. Any environmental issues raised by federal agencies or their representatives will need to be resolved prior to State Water Board approval of a CWSRF financing commitment. For further information on the CWSRF Program environmental compliance, please contact me at (916) 341-6983.

It is important to note that prior to a CWSRF financing commitment, projects are subject to the provisions of the federal Endangered Species Act and must obtain approval from the United States Fish and Wildlife Service (USFWS), and/or National Marine Fisheries Service (NMFS) for any potential effects to special status species.

Please be advised that the State Water Board can consult with the USFWS, and/or NMFS on behalf of the District regarding all federal special status species the Project has the potential to impact if the Project is to be funded under the CWSRF Program.

In addition, CWSRF projects must comply with federal laws pertaining to cultural resources, specifically Section 106 of the National Historic Preservation Act. The State Water Board has been delegated responsibility for carrying out the requirements of Section 106 under a Nationwide Programmatic Agreement executed for the CWSRF Program by the USEPA, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers.

As stated above, the State Water Board has responsibility for ensuring compliance with Section 106 and the State Water Board Cultural Resources Officer (CRO) consults directly with the California State Historic Preservation Officer (SHPO). SHPO consultation is initiated when sufficient information is provided by the CWSRF applicant for projects having potential impacts to cultural resources. Please contact the State Water Board CRO Ms. Cookie Hirn at 916-341-5690, to find out more about the requirements and questions on how to begin the Section 106 compliance process. Note that the District will need to identify the Area of Potential Effects (APE), including construction areas, staging areas, and depth of any excavation.

If the District pursues State Water Board funding, provide the CRO with a copy of a current Records Search for the Project area, including maps that show all recorded sites and surveys in relation to the APE for the Project. The APE is three-dimensional and includes all areas that may be affected by the Project. The APE includes the surface area and extends below ground to the depth of any Project excavations. The Records Search request should be made for an area larger than the APE. The appropriate area varies for different projects but should be drawn large enough to provide information on what types of sites may exist in the vicinity. Specifically, please send copies of the Records Search maps with all sites and surveys mapped in relation to the pipeline routes, and copies of Native American consultation including documentation of follow-up phone calls. Additionally, the Project archeologist will need to provide the CRO with a map delineating the areas deemed sensitive for buried resources, and a rationale for the designations.

Native American and Interested Party Consultation are required for Section 106 compliance:

- A Project description and map should be sent to the Native American Heritage Commission (NAHC). The NAHC will provide a list of Native American tribes and individuals that are culturally affiliated with your Project area and recommend that they all be contacted
- A Project description and map should be sent to everyone on the list provided by the NAHC, asking for information on the Project area

- Similar letters should be sent to local historical organizations
- Follow-up contact should be made by phone, if possible, and a phone log should be included

Comments from the NAHC, local tribes, and historical organizations affiliated with the Project area, as well as the District's response to these comments should be included in the submittal to the CRO.

The NAHC can be contacted at:

915 Capitol Mall, Room 364
Sacramento, CA 95814
(916) 653-4082

Thank you once again for the opportunity to review the NOP. We have no further comments at this time. If you have any questions or concerns about the State Water Board environmental compliance process please feel free to contact me at (916) 341-6983, or by email at MLobo@waterboards.ca.gov. For all other comments or questions, please contact Parker Thaler at (916) 341-7388, or PThaler@waterboards.ca.gov.

Sincerely,

Michelle Lobo
Environmental Scientist

Enclosures (5)

cc: State Clearinghouse (w/o enclosures)
(Re: SCH# 2010061069)
P. O. Box 3044
Sacramento, CA 95812-3044

APPENDIX B

Noise Modeling Results

Appendix B

Project-Generated Construction Source Noise Prediction Model

Hollister Urban Area Water/Wastewater Master Plan

Construction Operations

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	2,111	50.0
	50	90.6
	50	90.6
	50	90.6
	50	90.6
	50	90.6
	50	90.6
	50	90.6
	50	90.6
	50	90.6
	50	90.6
	50	90.6
	50	90.6
	50	90.6
	50	90.6

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Clam Shovel (dropping)	93	0.2
Scraper	85	0.4
Impact Pile Driver	95	0.2

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor	0.63

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Clam Shovel (dropping)	86.0
Scraper	81.0
Impact Pile Driver	88.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
90.6

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Appendix B

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

AECOM

Project Name : Hollister Urban Water/Wastewater Master Plan
Project Number : 10110066.01
Modeling Condition : Existing
Ground Type : Hard
K Factor :
Metric (L_{eq}, L_{dn}, CNEL) : Ldn
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Highway 25	4th Street	Bolsa Road	21000	55	100	83.3	9.8	6.9	70		30	
2	Highway 25	4th Street	Nash Road	14000	55	100	83.3	9.8	6.9	70		30	
3	Highway 156	Highway 25	Mitchell Road	13800	55	100	85.8	4.5	9.7	70		30	
4	Highway 156	Highway 25	Fairview Road	11600	55	100	85.8	4.5	9.7	70		30	

Appendix B

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : Hollister Urban Water/Wastewater Master Plan
Project Number : 10110066.01
Modeling Condition : Existing
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Highway 25	4th Street	Bolsa Road	71.2	69.0	71.5	75.5	353	1118	3535	11177	35346
2	Highway 25	4th Street	Nash Road	69.5	67.3	69.7	73.7	236	745	2356	7452	23564
3	Highway 156	Highway 25	Mitchell Road	69.5	63.8	71.1	73.9	244	771	2437	7707	24371
4	Highway 156	Highway 25	Fairview Road	68.8	63.1	70.4	73.1	205	648	2049	6478	20485

Appendix B

Project-Generated Construction Source Vibration Prediction Model

Hollister Urban Area Water/Wastewater Master Plan

Location	Distance to Nearest Receiver in feet	Predicted Vibration Level (PPV)	Predicted Vibration Level (VdB)	Equipment	Reference Distance	PPV at 25 feet (in/sec)[1]	Approximate Lv (VdB) at 25 feet[2]
XXXX	100	0.190	93.5	Pile Driver (impact)	25	1.518	112
	140	0.115	89.1				
	740	0.009	67.4				
	460	0.019	73.6				
	100	0.190	93.5				
	375	0.026	76.3				
	285	0.039	79.9				
	1,000	0.006	63.5				
	1,575	0.003	57.6				
	380	0.026	76.1				
	8,000	0.000	36.4				
	3,800	0.001	46.1				

Sources:

[1] Where PPV is the peak particle velocity

[2] Where Lv is the RMS velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.

Source: Caltrans 2002, FTA 2006

APPENDIX C

Proof of Publication of Scoping Ad

NOC with Clearinghouse Stamp

County Fair Flyer

Mailing List

Proof of Publication of Draft PEIR Public Hearing Ad

SBCWD Website Screen Capture

Meeting Sign-in Sheet

Letter from SWRCB on DEIR

Letter from State Clearinghouse Confirming One Response Letter

PROOF OF PUBLICATION
(2015.5 C.C.P.)
STATE OF CALIFORNIA
County of San Benito

I am a citizen of the United States and a resident of the County aforesaid. I am over the age of eighteen years, and not a party to or interested in the above entitled matter.

I am the printer and principal clerk of the publisher of the **Pinnacle Newspaper**, printed and published in the **CITY OF HOLLISTER, COUNTY OF SAN BENITO, AND STATE OF CALIFORNIA. FRIDAYS AND ON LINE** for which said newspaper has been adjudicated a newspaper of general circulation by the **SUPERIOR COURT OF THE COUNTY OF SAN BENITO, STATE OF CALIFORNIA**, under the date of November 7, 1989, Action Number 16679, that the notice of which the annexed is a printed copy had been published in each issue thereof and not in any supplement thereof on the following date(s), to **wit :**
June 25, 2010

I certify (or declare) under penalty of perjury that the foregoing is true and correct and that this declaration **June 17, 2010 was** executed in the
The Weekend Pinnacle
350 Sixth Street
Hollister, Ca 95023

Leyna Smith

/S/ Leyna Smith
Legal Publications Specialist
and Classified Advertising
Hollister Free Lance, Pinnacle,
Gilroy Dispatch, Morgan Hill Times,
Phone # (408) 842-5079
Fax # (408) 842-3817
E-mail legals@svnewspapers.com
Website: www.pinnaclenews.com

The City of Hollister, San Benito County, San Benito County Water District (SBCWD), and Sunnyslope County Water District propose to implement a comprehensive water and wastewater program to meet the existing and future water resources needs of the Hollister Urban Area. The proposed Program would implement a variety of projects for water, wastewater, and recycled water facilities and management actions. As lead agency, SBCWD intends to prepare a programmatic environmental impact report (PEIR) in accordance with the California Environmental Quality Act (CEQA) to evaluate the significance of potential environmental impacts that could result from Program implementation.

SBCWD has prepared a Notice of Preparation (NOP) in accordance with Section 15082 of the CEQA Guidelines to inform all responsible and trustee agencies and interested parties that a PEIR will be prepared. The purpose of this NOP is to provide sufficient information about the proposed Program and its potential environmental impacts to allow interested parties the opportunity to provide a meaningful response related to the scope and content of the PEIR, including significant environmental issues and reasonable alternatives and mitigation measures. The NOP is available for review at the SBCWD office located at 30 Mansfield Road, Hollister, CA 95023 and at its website: sbcwd.com. SBCWD requests written comments on the NOP, which are due to SBCWD by 5:00 p.m. on July 22, 2010.

The SBCWD will convene a public scoping meeting at 6pm on Thursday, July 15, 2010 to allow agencies and the public to provide input on the scope and content of the PEIR. The meeting will be held at Veteran's Memorial Building, Room 218, 649 San Benito Street, Hollister, CA 95023.
Publish: Free Lance - June 22, 2010
Publish: Pinnacle - June 25, 2010
H/11535428

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #2010061069

Project Title: Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan
Lead Agency: San Benito County Water District — Contact Person: Jeff Cattaneo
Mailing Address: 30 Mansfield Road — Phone: 831-637-8218
City: Hollister — Zip: 95024 — County: San Benito

Project Location: County: San Benito — City/Nearest Community: City of Hollister.
Cross Streets: State Route 25, State Route 156, San Juan Road/Fourth Street, Wright Road/McCloskey — Zip Code: 95024
Longitude/Latitude (degrees, minutes and seconds): 36 ° 51 ' 32 " N / 121 ° 24 ' 04 " W — Total Acres: 35,294
Assessor's Parcel No.: Multiple parcels — Section: 27 — Twp.: 12 S — Range: 5 E — Base: Mt. Diablo
Within 2 Miles: State Hwy #: SR 25 & SR 156 — Waterways: San Benito River, Pacheco Creek, Arroyo dos Pichacos
Airports: Hollister Municipal Airport — Railways: Union Pacific Railroad — Schools: Multiple Schools

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec
☑ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) Other:
NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI
Other: ☐ Joint Document ☐ Final Document ☐ Other:

RECEIVED
OCT 04 2010
STATE CLEARING HOUSE

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☑ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other:

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational:
☐ Recreational:
☑ Water Facilities: Type Treatment/storage MGD
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type MW
☑ Waste Treatment: Type Reclamation MGD
☐ Hazardous Waste: Type
☐ Other: Recycled Water Facilities

Project Issues Discussed in Document:

☑ Aesthetic/Visual
☑ Agricultural Land
☑ Air Quality
☑ Archeological/Historical
☑ Biological Resources
☐ Coastal Zone
☑ Drainage/Absorption
☑ Economic/Jobs
☐ Fiscal
☑ Flood Plain/Flooding
☐ Forest Land/Fire Hazard
☑ Geologic/Seismic
☑ Minerals
☑ Noise
☐ Population/Housing Balance
☑ Public Services/Facilities
☑ Recreation/Parks
☐ Schools/Universities
☑ Septic Systems
☑ Sewer Capacity
☑ Soil Erosion/Compaction/Grading
☑ Solid Waste
☑ Toxic/Hazardous
☑ Traffic/Circulation
☑ Vegetation
☑ Water Quality
☑ Water Supply/Groundwater
☑ Wetland/Riparian
☑ Growth Inducement
☑ Land Use
☑ Cumulative Effects
☐ Other:

Present Land Use/Zoning/General Plan Designation:
Residential, Commercial, Agricultural, Industrial, Mixed-use, Airport, Public, and Open Space

Project Description: *(please use a separate page if necessary)*
The City of Hollister, San Benito County, San Benito County Water District (SBCWD), and Sunnyslope County Water District propose to implement a comprehensive water and wastewater program to meet the existing and future water resources needs of the Hollister Urban Area. The proposed Program would implement a variety of projects for water, wastewater, and recycled water facilities and management actions. Facilities would include a new water treatment plant, upgrades to the existing Lessalt water treatment plant, water storage, demineralization of urban wells, the North County Groundwater Bank, upgrades to the Ridgemark Wastewater Treatment Plant, expansion of the City of Hollister Water Reclamation Facility, connection of the Ciello Estates to the City's water reclamation facility, and various facilities for the use of recycled water.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

X Air Resources Board
___ Boating & Waterways, Department of
___ California Highway Patrol
___ Caltrans District #___
___ Caltrans Division of Aeronautics
___ Caltrans Planning
___ Central Valley Flood Protection Board
___ Coachella Valley Mtns. Conservancy
___ Coastal Commission
___ Colorado River Board
___ Conservation, Department of
___ Corrections, Department of
___ Delta Protection Commission
___ Education, Department of
___ Energy Commission
X Fish & Game Region #4
___ Food & Agriculture, Department of
___ Forestry and Fire Protection, Department of
___ General Services, Department of
___ Health Services, Department of
___ Housing & Community Development
___ Integrated Waste Management Board
___ Native American Heritage Commission

___ Office of Emergency Services
___ Office of Historic Preservation
___ Office of Public School Construction
___ Parks & Recreation, Department of
___ Pesticide Regulation, Department of
___ Public Utilities Commission
X Regional WQCB #3
X Resources Agency
___ S.F. Bay Conservation & Development Comm.
___ San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
___ San Joaquin River Conservancy
___ Santa Monica Mtns. Conservancy
___ State Lands Commission
___ SWRCB: Clean Water Grants
X SWRCB: Water Quality
___ SWRCB: Water Rights
___ Tahoe Regional Planning Agency
___ Toxic Substances Control, Department of
___ Water Resources, Department of

___ Other: ___
___ Other: ___

Local Public Review Period (to be filled in by lead agency)

Starting Date ___ Ending Date ___

Lead Agency (Complete if applicable):

Consulting Firm: AECOM
Address: 2020 L Street, Suite 400
City/State/Zip: Sacramento, CA 95811
Contact: Samantha Salvia
Phone: 415-955-2800

Applicant: San Benito County Water District
Address: 30 Mansfield Road
City/State/Zip: Hollister, CA 95024
Phone: 831-637-8218

Signature of Lead Agency Representative: ___ **Date:** 9/28/10

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

NOTICE OF PUBLIC HEARING

HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN
AND COORDINATED WATER SUPPLY AND TREATMENT PLAN
PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT

October 21, 2010 at 6 p.m.

Veteran's Memorial Building

Room 218

649 San Benito Street

Hollister, CA 95023

The City of Hollister, County of San Benito, San Benito County Water District, and Sunnyslope County Water District invite you to a public hearing to discuss the Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan Programmatic Environmental Impact Report. The comprehensive water and wastewater program (Program) evaluated in the Programmatic Environmental Impact Report would meet the existing and future water resources reliability and water quality needs of the Hollister Urban Area.

The overall purpose of the Program is to:

- Improve the quality of municipal drinking water, industrial supply, and recycled water for urban and agricultural irrigation users.
- Provide a reliable and sustainable water supply to meet the current and future demands of the Hollister Urban Area (HUA).
- Implement goals for the Hollister Water Reclamation Facility to be the primary wastewater treatment plant for incorporated and unincorporated lands in the HUA to protect groundwater quality and public health.

Interested Party Mailing Labels for Notice of Availability, September 2010

John Tobias
6344 Pacheco Pass Highway
Hollister, CA 95023

Hollister Downtown Association
455 San Benito Street, Suite 21
Hollister, CA 95023

Scott Morgan
Business Council
2451 Bert Drive
Hollister, CA 95023

Frank Bettencourt
P.O. Box 2408
Hollister, CA 95024

Chamber of Commerce
650 San Benito Street, Suite 130
Hollister, CA 95023

Graham Mackie
Business Council
31 Wright Road
Hollister, CA 95023

Jeff Cattaneo
SBCWD

Hollister School District
2690 Cienega Road
Hollister, CA 95023

Joe Morris
Vision San Benito
500 Mission Vineyard Road
San Juan Bautista, CA 95045

Sara Singleton
SBCWD

San Benito Joint Union High School
1220 Monterey Street
Hollister, CA 95023

San Benito County Farm Bureau
530 San Benito Street, Suite 201
Hollister, CA 95023

Harry Blohm

Sierra Club
P.O. Box 745
Hollister, CA 95024

Nenette Corotto
291 Blossom Lane
Hollister, CA 95023

Pat Loe
SBC Board of Supervisors
481 Fourth Street
Hollister, CA 95023

San Benito Foods
Attn: Steve Arnoldy
P.O. Box 100
Hollister, CA 95024

SBC Cattlemen's Association
P.O. Box 820
Hollister, CA 95024

Margie Barrios
SBC Board of Supervisors
380 Mansfield Road
Hollister, CA 95023

SBC Cattlewomen's Association
P.O. Box 539
Tres Pinos, CA 95075

Kollin Kosmicki, Editor
Hollister Free Lance Newspaper
350 Sixth Street, Suite 101
Hollister, CA 95023

Susan Thompson
County Administrative Officer
481 Fourth Street
Hollister, CA 95023

Economic Development Corporation
1131 San Felipe Road
Hollister, CA 95023

Melissa Flores, Editor
The Pinnacle
350 Sixth Street, Suite 102
Hollister, CA 95023

Art Henriques
SBC Planning Dept.
3224 Southside Road
Hollister, CA 95023

Marvin Jones
425 South Street
Hollister, CA 95023

Jim Conklin
4115 Fort Donnelson Drive
Stockton, CA 95219

Steve Wittry
SBC Public Works
3220 Southside Road
Hollister, CA 95023

Lewis Engineering
P.O. Box 1096
Hollister, CA 95024

Scott Fuller
San Juan Oaks
3825 Union Road
Hollister, CA 95023

Interested Party Mailing Labels for Notice of Availability, September 2010

Victor Gomez
City Councilmember
2311 Paradise Court
Hollister, CA 95023

Doug Emerson
City Councilmember
1995 Serene Drive
Hollister, CA 95023

Eugenia Sanchez
City Councilmember
601 Chaparral Court
Hollister, CA 95023

Clint Quilter
City Manager
375 Fifth Street
Hollister, CA 95023

Bryan Yamaoka
Sunnyslope Cty. Water District
3570 Airline Highway
Hollister, CA 95023

Doug Keck
Sunnyslope Cty. Water District
1371 El Cerro Drive
Hollister, CA 95023

Marshel Nelson
Sunnyslope Cty. Water District
361 Donald Drive
Hollister, CA 95023

Ken Girourd
Sunnyslope Cty. Water District
3570 Airline Highway
Hollister, CA 95023

Stephen Hailstone
1890 Village Court
Hollister, CA 95023

Jorge Duran
Ruggeri-Jensen-Azar & Associates
8055 Camino Arroyo
Gilroy, CA 95020

San Benito Engineering
502 Monterey Street
Hollister, CA 95023

Cecile DeMartini
CA Regional Water
Quality Control Board
895 Aerovista Place Ste. 101
San Luis Obispo, CA 93401

DMB Associates
P.O. Box 1863
Hollister, CA 95024

SBC Contractors Association
P.O. Box 1985
Hollister, CA 95024

Jeff Culler
SBC Planning Commission
481 Fourth Street
Hollister, CA 95023

Gordon Machado
SBC Planning Commission
481 Fourth Street
Hollister, CA 95023

Robert Scattini
SBC Planning Commission
481 Fourth Street
Hollister, CA 95023

Chris Alvarez
Hollister Planning Commission
340 Mapleton Avenue
Hollister, CA 95023

Helen Ross
Hollister Planning Commission
670 Fifth Street
Hollister, CA 95023

Richard Ferreira
P.O. Box 742
Hollister, CA 95024

Chris Perez
P.O. Box 2226
Hollister, CA 95024

San Benito County Bar Assn.
440 Fifth Street, Room 206
Hollister, CA 95023

SBC Association of Realtors
330 Tres Pinos Rd. #C-6
Hollister, CA 95023

San Benito Health Care District
911 Sunset Drive
Hollister, CA 95023

Dan DeVries
SBC Planning Commission
481 Fourth Street
Hollister, CA 95023

Richard Bettencourt
SBC Planning Commission
481 Fourth Street
Hollister, CA 95023

Gabriel Torres
Hollister Planning Commission
1120 Mulberry Street
Hollister, CA 95023

Charles Scott
Hollister Planning Commission
471 Haydon Street
Hollister, CA 95023

David Huboi
Hollister Planning Commission
910 Monterey Street
Hollister, CA 95023

Attn: Jordan Smith
EIP Associates
1200 2nd Street, Suite 200
Sacramento, CA 95814

Interested Party Mailing Labels for Notice of Availability, September 2010

Basin Water, Inc.
Rob Haney
816 Porter Way
Fallbrook, CA 92028

Cameron Doyd
2271 Lava Ridge, #220
Roseville, CA 95661

Jerry Gabe
70 Rob Court
Hollister, CA 95023

Richard Bettencourt
4140 Southside Road
Hollister, CA 95023

Ruth Erickson
1430 Alright Drive
Hollister, CA 95023

Mike Smith
771 Las Palmas Drive
Hollister, CA 95023

Shawn Novack
SBCWD

Bradley Miller
850 Clearwater Drive
Hollister, CA 95023

Wendy Elliot
Pulte Homes
4 Rossi Circle
Salinas, CA 93907

John Ucovich
1205 Quail Ridge Way
Hollister, CA 95023

Katherine Vais-Bedolla
390 Tina Drive
Hollister, CA 95023

John & Roberta Bessa
1650 Sonny's Way
Hollister, CA 95023

James Pickworth
711 Sally Street
Hollister, CA 95023

PROOF OF PUBLICATION
(2015.5 C.C.P.)
STATE OF CALIFORNIA
County of San Benito

I am a citizen of the United States and a resident of the County aforesaid. I am over the age of eighteen years, and not a party to or interested in the above entitled matter.

I am the printer and principal clerk of the publisher of the **Pinnacle Newspaper,** printed and published in the **CITY OF HOLLISTER, COUNTY OF SAN BENITO, AND STATE OF CALIFORNIA. FRIDAYS AND ON LINE** for which said newspaper has been adjudicated a newspaper of general circulation by the **SUPERIOR COURT OF THE COUNTY OF SAN BENITO, STATE OF CALIFORNIA,** under the date of November 7, 1989, Action Number 16679, that the notice of which the annexed is a printed copy had been published in each issue thereof and not in any supplement thereof on the following date(s),

October 15, 2010

I certify (or declare) under penalty of perjury that the foregoing is true and correct and that this declaration **October 7, 2010 was** executed in the
The Weekend Pinnacle
350 Sixth Street
Hollister, Ca 95023

Leyna Smith

/S/ Leyna Smith
Legal Publications Specialist
and Classified Advertising
Hollister Free Lance, Pinnacle,
Gilroy Dispatch, Morgan Hill Times,
Phone # (408) 842-5079
Fax # (408) 842-3817
E-mail legals@svnewspapers.com
Website: www.pinnaclenews.com

Public Notice

THE CITY OF HOLLISTER, SAN BENITO COUNTY, SAN BENITO COUNTY WATER DISTRICT (SBCWD), AND SUNNYSLOPE COUNTY WATER DISTRICT PROPOSE TO IMPLEMENT A COMPREHENSIVE WATER AND WASTEWATER PROGRAM TO MEET THE EXISTING AND FUTURE WATER RESOURCES NEEDS OF THE HOLLISTER URBAN AREA. THE PROPOSED PROGRAM WOULD IMPLEMENT A VARIETY OF PROJECTS FOR WATER, WASTEWATER, AND RECYCLED WATER FACILITIES AND MANAGEMENT ACTIONS. AS LEAD AGENCY, SBCWD HAS PREPARED A PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT (PEIR) IN ACCORDANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) TO EVALUATE THE SIGNIFICANCE OF POTENTIAL ENVIRONMENTAL IMPACTS THAT COULD RESULT FROM PROGRAM IMPLEMENTATION. THE PEIR IS AVAILABLE FOR PUBLIC REVIEW AT THE SBCWD OFFICE LOCATED AT 30 MANSFIELD ROAD, HOLLISTER, CA 95023 AND AT ITS WEBSITE: SBCWD.COM. WRITTEN COMMENTS ON THE PEIR ARE DUE TO SBCWD BY 5:00 P.M. ON NOVEMBER 17, 2010.

THE SBCWD WILL CONVENE A PUBLIC HEARING TO ALLOW AGENCIES AND THE PUBLIC TO COMMENT ON THE PEIR. THE MEETING WILL BE HELD AT 6PM ON THURSDAY, OCTOBER 21, 2010 AT THE VETERAN'S MEMORIAL BUILDING, ROOM 218, 649 SAN BENITO STREET, HOLLISTER, CA 95023.

PROOF OF PUBLICATION
(2015.5 C.C.P.)
STATE OF CALIFORNIA
County of San Benito

I am a citizen of the United States and a resident of the County aforesaid. I am over the age of eighteen years, and not a party to or interested in the above entitled matter.

I am the printer and principal clerk of the publisher of the Free Lance, published on line, printed and published in the city of Hollister, County of San Benito, State of California. Printed and Published **TUESDAY AND ON LINE** for which said newspaper has been adjudicated a newspaper of general circulation by the **Superior Court of the County of San Benito, State of California, under the date of June 19, 1952, Action Number 5330,** that the notice of which the annexed is a printed copy had been published in each issue. Thereof and not in any supplement on the following dates:
October19, 2010

I, under penalty of perjury that the foregoing is true and correct. This declaration has been executed **ON October 7, 2010**
HOLLISTER FREE LANCE
350 Sixth Street,
Hollister CA 95023

Lori Holcomb

/S/ Lori Holcomb
Legal Publications Specialist
Classified Advertising
Hollister Free Lance, Pinnacle,
Gilroy Dispatch, Morgan Hill Times,
Phone # (408) 842-5079
Fax # (408) 842-3817
E-mail legals@svnewspapers.com
Website: www.freelancenews.com

Public Notice

THE CITY OF HOLLISTER, SAN BENITO COUNTY, SAN BENITO COUNTY WATER DISTRICT (SBCWD), AND SUNNYSLOPE COUNTY WATER DISTRICT PROPOSE TO IMPLEMENT A COMPREHENSIVE WATER AND WASTEWATER PROGRAM TO MEET THE EXISTING AND FUTURE WATER RESOURCES NEEDS OF THE HOLLISTER URBAN AREA. THE PROPOSED PROGRAM WOULD IMPLEMENT A VARIETY OF PROJECTS FOR WATER, WASTEWATER, AND RECYCLED WATER FACILITIES AND MANAGEMENT ACTIONS. AS LEAD AGENCY, SBCWD HAS PREPARED A PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT (PEIR) IN ACCORDANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) TO EVALUATE THE SIGNIFICANCE OF POTENTIAL ENVIRONMENTAL IMPACTS THAT COULD RESULT FROM PROGRAM IMPLEMENTATION. THE PEIR IS AVAILABLE FOR PUBLIC REVIEW AT THE SBCWD OFFICE LOCATED AT 30 MANSFIELD ROAD, HOLLISTER, CA 95023 AND AT ITS WEBSITE: SBCWD.COM. WRITTEN COMMENTS ON THE PEIR ARE DUE TO SBCWD BY 5:00 P.M. ON NOVEMBER 17, 2010.

THE SBCWD WILL CONVENE A PUBLIC HEARING TO ALLOW AGENCIES AND THE PUBLIC TO COMMENT ON THE PEIR. THE MEETING WILL BE HELD AT 6PM ON THURSDAY, OCTOBER 21, 2010 AT THE VETERAN'S MEMORIAL BUILDING, ROOM 218, 649 SAN BENITO STREET, HOLLISTER, CA 95023.
H/11536939

- About SBCWD
- Employment
- Board of Directors
- Customer Service
- Publications
- Web Links
- News

Document Resources

Document Resources 2006

Annual_GW_report_2006.pdf
2005-06 Audited Financial Statement.pdf

Document Resources 2007

Annual_GW_report_2007.pdf
2006-07 Audited Financial Statement.pdf

Document Resources 2008

Annual_GW_report_2008.pdf
Hollister_Area_UWMP_Public_review_Draft_091708_.pdf
NOP_Supplement_EIR(revised).pdf
2007-08 Audited Financial Statement.pdf
Fall 2008 Sbcwd Newsletter.pdf

Document Resources 2009

Annual_GW_report_2009.pdf
2008-09 Audited Financial Statement.pdf
Hollister Urban Area Water & WasteWater Master Plan 110308.pdf
SBCWD Recycled Water Demonstration Project_SEIR.pdf

Document Resources 2010

Coordinated Water Supply and Treatment Plan, Final 010110.pdf
Hollister_PEIR_NOP_062210.pdf
2010-2011 Capital Budget.pdf
2010-2011 Operating Budget.pdf
HUAMP_NOC-DateStamped_20101004.pdf
Hollister_Master_Plan_Public_DEIR_100410.pdf

Copyright © 2010 San Benito County Water District, All Rights Reserved.
Web design by Morgan Hill Web Works, Inc.

HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN AND
COORDINATED WATER SUPPLY AND TREATMENT PLAN
Public Hearing for the Draft Program Environmental Impact Report
October 21, 2010

ATTENDEES

(Please print)

	Name	Address	Email Address
1	GARY ARMSTRONG	3224 SOUTHSIDE RD.	garmstrong@cosb.us
2	Mary Paxton	375 Fifth Street	mary.paxton@hollister.ca.gov
3			
4			
5			
6			
7			
8			
9			
10			

State Water Resources Control Board

Division of Financial Assistance
1001 I Street • Sacramento, California 95814 • (916) 341-5700 FAX (916) 341-5707
Mailing Address: P.O. Box 944212 • Sacramento, California • 94244-2120
Internet Address: http://www.waterboards.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

NOV - 3 2010

RECEIVED
NOV 08 2010
SAN BENITO COUNTY WATER DISTRICT

Mr. Jeff Cattaneo
San Benito County Water District
30 Mansfield Road
Hollister, CA 95024

Dear Mr. Cattaneo:

DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT (PEIR) FOR SAN BENITO COUNTY WATER DISTRICT (DISTRICT); HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN AND COORDINATED WATER SUPPLY AND TREATMENT PLAN (PROJECT); STATE CLEARINGHOUSE NO. 2010061069

Thank you for the opportunity to review the above document. We understand that the District is not currently pursuing Clean Water State Revolving Fund (CWSRF) financing for this Project. As a funding Agency and a state Agency with jurisdiction by law to preserve, enhance, and restore the quality of California's water resources, the State Water Resources Control Board (State Water Board) is providing comments on the California Environmental Quality Act (CEQA) document prepared for the Project.

The District may want to consider the CWSRF Program to provide funding for future construction. The State Water Board, Division of Financial Assistance, is responsible for administering CWSRF financing. The primary purpose for the CWSRF Program is to implement the Clean Water Act and various state laws by providing financial assistance for wastewater treatment facilities necessary to prevent water pollution, recycle water, correct nonpoint source and storm drainage pollution problems, and provide for estuary enhancement, thereby protecting and promoting health, safety and welfare of state inhabitants. The CWSRF Program provides low-interest funding equal to one-half the most recent State General Obligation Bond Rates with a 20-year term. Applications are accepted and processed continuously. For more information refer to the State Water Board's CWSRF website at: www.waterboards.ca.gov/waterissues/programs/grantsloans/srf/index.shtml.

The CWSRF Program is partially funded by the United States Environmental Protection Agency (USEPA) and requires additional "CEQA-Plus" environmental documentation and review. Three information sheets are included that further explain the environmental review process and additional federal requirements in the CWSRF Program. In addition, an environmental evaluation form is included for the District to submit should it pursue State Water Board funding. The State Water Board can consult directly with agencies responsible for implementing federal environmental laws and regulations. Any environmental issues raised by federal agencies or their representatives will need to be resolved prior to State Water Board approval of a CWSRF financing commitment. For further information on the CWSRF Program environmental review requirements please contact Ms. Michelle Lobo at (916) 341-6983.

It is important to note that prior to a CWSRF financing commitment, projects are subject to the provisions of the Federal Endangered Species Act and must obtain approval from the United States Fish and Wildlife Service (USFWS), and/or National Marine Fisheries Service (NMFS) for any potential effects to special status species.

Please be advised that the State Water Board can consult with the USFWS, and/or NMFS on behalf of the District regarding all federal special status species the Project has the potential to impact if the Project is to be funded under the CWSRF Program.

In addition, CWSRF projects must comply with federal laws pertaining to cultural resources, specifically Section 106 of the National Historic Preservation Act. The State Water Board has been delegated responsibility for carrying out the requirements of Section 106 under a Nationwide Programmatic Agreement executed for the CWSRF Program by the USEPA, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers.

As stated above, the State Water Board has responsibility for ensuring compliance with Section 106 and the State Water Board Cultural Resources Officer (CRO) consults directly with the California State Historic Preservation Officer (SHPO). SHPO consultation is initiated when sufficient information is provided by the CWSRF applicant for projects having potential impacts to cultural resources. Please contact the State Water Board CRO Ms. Cookie Hirn at 916-341-5690, to find out more about the requirements and questions on how to begin the Section 106 compliance process.

The State Water Board has no further comments on the draft PEIR at this time. Thank you for the opportunity to review the District's environmental document. If you have any questions or concerns, please feel free to contact me at (916) 327-9401, or contact Ms. Justine Herrig at (916) 327-9117.

Sincerely,

Lisa Lee
Environmental Scientist

Enclosures (4)

cc: State Clearinghouse w/o enclosures
(Re: SCH# 2010061069)
P. O. Box 3044
Sacramento, CA 95812-3044

INSTRUCTIONS AND GUIDANCE FOR
"ENVIRONMENTAL COMPLIANCE INFORMATION"

Introduction:

Detailed information, including statutes and guidelines on the California Environmental Quality Act (CEQA), can be obtained at http://ceres.ca.gov/ceqa. A CEQA Process Flowchart that shows interaction points between lead and responsible agencies can be found at http://ceres.ca.gov/topic/env_law/ceqa/flowchart/index.html. In addition, State Water Board environmental staff is available to answer questions about the CEQA process. Please contact your assigned Project Manager to be directed to an appropriate environmental staff person for further clarification.

CEQA Checklist:

All projects coming to the State Water Board for funding are considered "projects" under CEQA because the State Water Board is providing discretionary approval for that funding.

The types of CEQA documents that might apply to an applicant's project include one of the following: 1. Notice of Exemption; 2. Initial Study/Negative Declaration (or Mitigated Negative Declaration with a Mitigation Monitoring and Reporting Program [MMRP]); or 3. Environmental Impact Report (EIR) with an MMRP. The applicant must determine the appropriate document for its project and submit the additional supporting information listed under the applicable section of the CEQA Checklist. Please submit two copies of all documents. If the applicant is using a CEQA document that is older than five years, the applicant must re-evaluate environmental and project conditions, and develop and submit an updated document based on the results of that re-evaluation.

The applicant must ensure the CEQA document is specific to the project for which funding is being requested. Tier I CEQA documents, such as Program or Master Plan EIRs, may not be suitable for satisfying State Water Board requirements if these documents are not project-specific. Instead, the applicant should be submitting a Tier II CEQA document that is project-specific. If this Tier II CEQA document references pertinent environmental and mitigation information contained in the Tier I CEQA document, then the applicant must submit both documents. *[NOTE: Tier I and Tier II documents refer to documents as defined under CEQA. Although the same terminology is used, these documents do not relate to the Tier I and Tier II level of reviews under the CWSRF Program.]*

Each applicant, if it is a public agency, is responsible for approving the CEQA documents it uses regardless of whether or not it is a lead agency under CEQA. Non-profit organizations, however, shall only be responsible for approving the applicable project mitigation measures identified in the MMRP. For purposes of State Water Board funding, all public agencies applying for this funding shall file either a Notice of Exemption or a Notice of Determination with the Governor's Office of Planning and Research (State Clearinghouse). Stamped copies of these notices shall be submitted with the rest of the environmental documents.

If the CEQA document is linked to a National Environmental Policy Act (NEPA) document (such as an Environmental Assessment or an Environmental Impact Statement), then the applicant shall submit the additional corresponding NEPA items with either a Finding of No Significant Impact, or a Record of Decision made by the lead agency under NEPA.

Note that additional information may be requested from the applicant after review of all the environmental documents to ensure the State Water Board can complete its own CEQA compliance.

Federal Information:

CEQA requires full disclosure of all aspects of the project, including impacts and mitigation measures that are not only regulated by state agencies, but also by federal agencies. Early consultation with state and federal agencies in the CEQA process will assist in minimizing changes to the project when funding is being requested from the State Water Board. For the items that follow the CEQA Checklist, the applicant shall provide the information and/or reference any applicable sections from the documents being submitted to assist with environmental staff's CEQA review, as well as to provide applicant guidance on any potential concerns, and to assist with federal coordination as needed.

1. Federal Endangered Species Act (ESA), Section 7:

For further information on the federal ESA relating to law, regulation, policy, and notices, go to http://www.fws.gov/endangered/policy/index.html and http://www.nmfs.noaa.gov/pr/laws/esa/. Note that compliance with both state and federal ESA is required of projects having the potential to impact special status species. Although overlap exists between the federal and state ESAs, there might be additional or more restrictive state requirements. For further information on the state ESA, go to http://www.dfg.ca.gov/habcon/cesa/.

2. National Historic Preservation Act, Section 106:

The NHPA focuses on federal compliance. In addition, CEQA requires that impacts to cultural and historic resources be analyzed. The "CEQA and Archeological Resources" section from the Governor's Office of Planning and Research CEQA Technical Advice Series states that the lead agency obtains a current records search from the appropriate California Historical Resources File System Information Center. In addition, the Native American Heritage Commission (NAHC) will provide a list of Native American tribes to be contacted and that are culturally affiliated with a project area.

The NAHC can be contacted at:

915 Capitol Mall, Room 364
Sacramento, CA 95814
(916) 653-4082

3. Clean Air Act:

For CWSRF financed projects, we recommend including a general conformity section in the CEQA documents so that another public review process will not be needed, should a conformity determination be required. The applicant should check with its air quality management district and review the State Air Resources Board California air emissions map for information on the State Implementation Plan. For information on the analysis steps involved in evaluating conformity, please contact the environmental staff person through the assigned Project Manager.

4. Coastal Zone Management Act:

For affected areas, refer to http://coastalmanagement.noaa.gov/mystate/docs/StateCZBoundaries.pdf. For additional information please refer to http://www.coastal.ca.gov/ccatc.html and/or http://www.bcdc.ca.gov/.

5. Farmland Protection Policy Act:

The Natural Resources Conservation Service provides information on the Farmland Protection Policy Act at http://www.nrcs.usda.gov/programs/fppa. Please see the following website regarding the Williamson Act http://www.consrv.ca.gov/dlrp/lca.

6. Floodplain Management - Executive Order 11988:

Each agency shall provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities. Before taking an action, each agency shall determine whether the proposed action will occur in a floodplain. The generally established standard for risk is the flooding level that is expected to occur every 100 years. If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain. The agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. For further information, please consult the following web link: http://www.epa.gov/owow/wetlands/regs/eo11988.html.

7. Migratory Bird Treaty Act (MBTA):

The MBTA, along with subsequent amendments to this Act, provides legal protection for almost all breeding bird species occurring in the United States and must be addressed in CEQA. The MBTA restricts the killing, taking, collecting and selling or purchasing of native bird species or their parts, nests, or eggs. The treaty allows hunting of certain game bird species, for specific periods, as determined by federal and state governments. In the CEQA document, each agency must make a finding that a project will comply with the MBTA. For further information, please consult the following web link: http://www.fws.gov/laws/lawsdigest/migtrea.html.

8. Protection of Wetlands – Executive Order 11990:

Projects, regardless of funding, must get approval for any temporary or permanent disturbance to federal and state waters, wetlands, and vernal pools. The permitting process is usually through the

U.S. Army Corps of Engineers (USACOE), can be lengthy and may ultimately require project alterations to avoid wetlands. Applicants must consult with USACOE early in the planning process if any portion of the project site contains wetlands, or other federal waters. The USACOE Wetland Delineation Manual is available at: http://www.wetlands.com/regs/tlpge02e.htm. Also note that the Water Boards are involved in providing approvals through a 401 Water Quality Certification and/or Waste Discharge Requirements (http://www.waterboards.ca.gov/water_issues/programs/cwa401/index.shtml).

9. Wild and Scenic Rivers Act:

There are construction restrictions or prohibitions for projects near or on a "wild and scenic river." A listing of designated "wild and scenic rivers" can be obtained at http://www.rivers.gov/wildriverslist.html . Watershed information can be obtained through the "Watershed Browser" at: http://cwp.resources.ca.gov/map_tools.php.

10. Source Water Protection:

For more information, please visit: http://epa.gov/region09/water/groundwater/ssa.html.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
CHECKLIST FOR THE APPLICANT
What to Submit to your State Water Board's Project Manager

If project is covered under a **CEQA Categorical or Statutory Exemption**, submit a copy of the following:

- ❑ **Notice of Exemption (filed with the Governor's Office of Planning and Research)**
- ❑ **List of Best Management Practices (BMPs) and their locations, if project implements BMPs**
- ❑ **Map of the project area**

If project is covered under a **Negative Declaration**, submit a copy of the following:

- ❑ **Draft and Final Initial Study/Negative Declaration**
  (or Mitigated Negative Declaration, if applicable)
  - ❑ Comments and Responses to the Draft
  - ❑ Mitigation Monitoring and Reporting Program (if using a Mitigated Negative Declaration)
- ❑ **Resolution approving the CEQA documents**
  - ❑ Adopting the Negative Declaration
  - ❑ Making CEQA Findings
- ❑ **Notice of Determination (filed with the Governor's Office of Planning and Research)**

If project is covered under an **Environmental Impact Report (EIR)**, submit a copy of the following:

- ❑ **Draft and Final EIR**
  - ❑ Comments and Responses to the Draft
  - ❑ Mitigation Monitoring and Reporting Program (MMRP)
- ❑ **Resolution approving the CEQA documents**
  - ❑ Certifying the EIR and adopting the MMRP
  - ❑ Making CEQA Findings
  - ❑ Adopting a Statement of Overriding Considerations for any adverse impact(s) that cannot be avoided or fully mitigated if project is implemented
- ❑ **Notice of Determination (filed with the Governor's Office of Planning and Research)**

If EIR is a joint CEQA/National Environmental Policy Act document (EIR/Environmental Impact Statement or EIR/Environmental Assessment), submit the applicable Record of Decision and/or Finding of No Significant Impact.

State Water Resources Control Board (State Water Board)
Clean Water State Revolving Fund Program

Evaluation Form for Environmental Review and Federal Coordination

1. **Federal Endangered Species Act:**
Does the project involve any direct effects from construction activities, or indirect effects such as growth inducement that may affect federally listed threatened or endangered species that are known, or have a potential, to occur on-site, in the surrounding area, or in the service area?

☐ No. Discuss why the project will not impact any federally listed special status species:

_____
_____
_____
_____
_____
_____

☐ Yes. Include information on federally listed species that could potentially be affected by this project and any proposed avoidance and compensation measures so that the State Water Board can initiate informal/formal consultation with the applicable federally designated agency. Document any previous ESA consultations that may have occurred with the project.

Attach project-level biological surveys, evaluations analyzing the project's direct and indirect effects on special-status species, and a current species list for the project area.

2. **National Historic Preservation Act:**
Identify the Area of Potential Effects (APE), including construction, staging areas, and depth of any excavation. (Note that the APE is three dimensional and includes all areas that may be affected by the project, including the surface area and extending below ground to the depth of any project excavations.)

_____
_____
_____
_____
_____
_____
_____
_____

Attach a current records search with maps showing all sites and surveys drawn in relation to the project area, and records of Native American consultation.

3. **<u>Clean Air Act:</u> Is the project subject to a State Implementation Plan (SIP) conformity determination?**

☐ No. The project is in an attainment or unclassified area.

☐ Yes. The project is in a nonattainment area or attainment area subject to maintenance plans. Include information to indicate the nonattainment designation (e.g. moderate, serious or severe), if applicable. If estimated emissions (below) are above the federal de minimis levels, but the project is sized to meet only the needs of current population projections that are used in the approved SIP for air quality, then quantitatively indicate how the proposed capacity increase was calculated using population projections.

Air Basin Name: _____

Provide the estimated project construction and operational air emissions (in tons per year) in the chart below, and attach supporting calculations.

Attach any air quality studies that may have been done for the project.

Pollutant	Status (Attainment, Nonattainment or Unclassified)	Threshold of Significance for the Area (if applicable)	Construction Emissions (Tons/Year)	Operation Emissions (Tons/Year)
Carbon Monoxide (CO)				
Ozone (O_3)				
Oxides of Nitrogen (NO_x)				
Particulate Matter ($PM_{2.5}$)				
Particulate Matter (PM_{10})				
Reactive Organic Gases (ROG)				
Sulfur Dioxide (SO_2)				
Volatile Organic Compounds (VOC)				

4. **<u>Coastal Zone Management Act:</u>**
Is any portion of the project site located within the coastal zone?

☐ No. The project is not within the coastal zone.

☐ Yes. Describe the project location with respect to coastal areas, and the status of the coastal zone permit:

_____
_____
_____
_____
_____
_____

5. **Farmland Protection Policy Act:**
Is any portion of the project site located on important farmland?

☐ No. The project will not impact farmland.

☐ Yes. Include information on the acreage that would be converted from important farmland to other uses. Indicate if any portion of the project site is located within Williamson Act control and the amount of affected acreage:

_____
_____
_____
_____
_____
_____

6. **Flood Plain Management:**
Is any portion of the project site located within a 100-year floodplain as depicted on a floodplain map or otherwise designated by the Federal Emergency Management Agency?

☐ No. Provide a description of the project location with respect to streams and potential floodplains:

_____
_____
_____

☐ Yes. Describe the floodplain, and include a floodplain map and a floodplains/wetlands assessment. Describe any measures and/or project design modifications that would minimize or avoid flood damage by the project:

_____
_____
_____
_____

7. **Migratory Bird Treaty Act:**
Will the project affect protected migratory birds that are known, or have a potential, to occur on-site, in the surrounding area, or in the service area?

☐No.

☐Yes. Discuss the impacts (such as noise and vibration impacts, modification of habitat) to migratory birds that may be directly or indirectly affected by the project and mitigation measures to reduce or eliminate these impacts. Include a list of all migratory birds that could occur where the project is located:

_____
_____
_____

8. **Protection of Wetlands:**
Does any portion of the project area contain areas that should be evaluated for wetland delineation or require a permit from the U.S. Army Corps of Engineers?

☐ No. Provide the basis for such a determination:

_____
_____
_____

☐ Yes. Describe the impacts to wetlands, potential wetland areas, and other surface waters, and the avoidance, minimization, and mitigation measures to reduce such impacts. Provide the status of the permit and information on permit requirements:

_____
_____
_____
_____
_____
_____

9. **Wild and Scenic Rivers Act:**
Is any portion of the project located within a wild and scenic river?

☐ No. The project will not impact a wild and scenic river.

☐ Yes. Identify the wild and scenic river watershed and project location relative to the affected wild and scenic river:

_____
_____
_____
_____
_____
_____

Identify watershed where the project is located:_____

10. **Source Water Protection:**
Is the project located in an area designated by the U.S. Environmental Protection Agency, Region 9, as a Sole Source Aquifer?

☐ No. The project is not within the boundaries of a sole source aquifer.

☐ Yes. Identify the aquifer (e.g., Santa Margarita Aquifer, Scott's Valley, the Fresno County Aquifer, the Campo/Cottonwood Creek Aquifer or the Ocotillo-Coyote Wells Aquifer):

_____

BASIC CRITERIA FOR CULTURAL RESOURCES REPORTS

FOR SECTION 106 CONSULTATION WITH THE STATE HISTORIC PRESERVATION OFFICER (SHPO) UNDER THE NATIONAL HISTORIC PRESERVATION ACT (NHPA)

CURRENT RECORDS SEARCH INFORMATION

- A current (less than a year old) records search from the appropriate Information Center is necessary. The records search should include maps that show all recorded sites and surveys in relation to the area of potential effects (APE) for the project.

- The APE is three-dimensional and includes all areas that may be affected by the project. It includes the surface area and extends below ground to the depth of any project excavations.

- The records search request should be made for an area larger than the APE. The appropriate area varies for different projects but should be drawn large enough to provide information on what types of sites may exist in the vicinity.

NATIVE AMERICAN AND INTERESTED PARTY CONSULTATION

- Native American and interested party consultation should be initiated at the beginning of any cultural resource investigations. The purpose is to gather information from people with local knowledge that may be used to guide research.

- A project description and map should be sent to the Native American Heritage Commission (NAHC) requesting a check of their Sacred Lands Files. The Sacred Lands Files include religious and cultural places that are not recorded at the information centers.

- The NAHC will include a list of Native American groups and individuals with their response. A project description and maps should be sent to everyone on the list asking for information on the project area.

- Similar letters should be sent to local historical organizations.

- Follow-up contact should be made by phone if possible and a phone log should be included in the report.

REPORT TERMINOLOGY

- A cultural resources report used for Section 106 consultation should use terminology consistent with the NHPA.

- This doesn't mean that the report needs to "filled" with passages and interpretations of the regulations, the SHPO reviewer already knows the law.

- If "findings" are made they must be one of the four "findings" listed in Section 106. These include:

  "No historic properties affected" (no properties are within the APE, including the below ground APE).

  "No effect to historic properties" (properties may be near the APE but the project will not impact them).

  "No adverse effect to historic properties" (the project may affect historic properties but the impacts will not be adverse)

  "Adverse effect to historic properties". *Note: the SHPO must be consulted at this point. If your consultant proceeds on his own, his efforts may be wasted.*

WARNING PHRASES IN ALREADY PREPARED CEQA REPORTS

- A finding of **"no known resources"**, this doesn't mean anything. The consultant's job is to find out if there are resources within the APE or to explain why they are not present.

- **"The area is sensitive for buried archaeological resources",** followed by a statement that **"monitoring is recommended as mitigation".** Monitoring is not an acceptable mitigation. A reasonable effort should be made to find out if buried resources are present in the APE.

- **"The area is already disturbed by previous construction",** this may be true, but documentation is still needed to show that the new project will not affect cultural resources. As an example, an existing road can be protecting a buried archaeological site. Or, previous construction may have impacted an archaeological site that was never documented.

- No mention of **"Section 106"**, a report that gives adequate information for CEQA may not be sufficient to comply with Section 106.

Please contact me with any questions.

Cookie Hirn
SWRCB
Cultural Resources Officer
916-341-5690
Mhirn@waterboards.ca.gov

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Arnold Schwarzenegger
Governor

Cathleen Cox
Acting Director

RECEIVED

NOV 22 2010

SAN BENITO COUNTY
WATER DISTRICT

November 18, 2010

Jeff Cattaneo
San Benito County Water District
30 Mansfield Road
Hollister, CA 95024

Subject: Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan
SCH#: 2010061069

Dear Jeff Cattaneo:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on November 17, 2010, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2010061069
Project Title Hollister Urban Area Water and Wastewater Master Plan and Coordinated Water Supply and Treatment Plan
Lead Agency San Benito County Water District

Type EIR Draft EIR

Description The City of Hollister, San Benito County Water District (SBCWD), and Sunnyslope County Water District propose to implement a comprehensive water and wastewater program to meet the existing and future water resources needs of the Hollister Urban Area. The proposed Program would implement a variety of projects for water, wastewater, and recycled water facilities and management actions. Facilities would include a new water treatment plant, upgrades to the existing Lessalt water treatment plant, water storage, demineralization of urban wells, the North County Groundwater Bank, upgrades to the Ridgemark Wastewater Treatment Plant, expansion of the City of Hollister Water Reclamation Facility, connection of the Ciello Estates to the City's water reclamation facility, and various facilities for the use of recycled water.

Lead Agency Contact

Name Jeff Cattaneo
Agency San Benito County Water District
Phone 831 637-8218 **Fax**
email jcattaneo@sbcwd.com
Address 30 Mansfield Road **State** CA **Zip** 95024
City Hollister

Project Location

County San Benito
City Hollister
Region
Lat / Long 36° 51' 32" N / 121° 24' 04" W
Cross Streets SR-25, SR-156, San Juan Rd/Fourth Street, Wright Rd/McCloskey
Parcel No. Multiple Parcels
Township 12S **Range** 5E **Section** 27 **Base** MDB&M

Proximity to:

Highways SR-25 & SR 156
Airports Hollister Municipal
Railways UPRR
Waterways San Benito River, Pacheco Creek and Arroyo dos Pichacos
Schools Mutliple Schools
Land Use Residential, Commercial, Agricultural, Industrial, Mixed-use, Airport, Public, and Open Space

Project Issues Biological Resources; Cumulative Effects; Archaeologic-Historic; Geologic/Seismic; Minerals; Growth Inducing; Water Quality; Landuse; Noise; Population/Housing Balance; Public Services; Toxic/Hazardous; Traffic/Circulation; Aesthetic/Visual; Water Supply; Agricultural Land; Air Quality; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Recreation/Parks; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Vegetation; Wetland/Riparian

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 4; Department of Parks and Recreation; Department of Water Resources; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 5; CA Department of Public Health; State Water Resources Control Board, Divison of Financial Assistance; Regional Water Quality Control Board, Region 3; Native American Heritage Commission; Public Utilities Commission

Date Received 10/04/2010 **Start of Review** 10/04/2010 **End of Review** 11/17/2010

Note: Blanks in data fields result from insufficient information provided by lead agency.

State Water Resources Control Board

Division of Financial Assistance
1001 I Street • Sacramento, California 95814 • (916) 341-5700 FAX (916) 341-5707
Mailing Address: P.O. Box 944212 • Sacramento, California • 94244-2120
Internet Address: http://www.waterboards.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

NOV - 3 2010

Mr. Jeff Cattaneo
San Benito County Water District
30 Mansfield Road
Hollister, CA 95024

Clear
11-17-10
e

RECEIVED
NOV 04 2010
STATE CLEARING HOUSE

Dear Mr. Cattaneo:

DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT (PEIR) FOR SAN BENITO COUNTY WATER DISTRICT (DISTRICT); HOLLISTER URBAN AREA WATER AND WASTEWATER MASTER PLAN AND COORDINATED WATER SUPPLY AND TREATMENT PLAN (PROJECT); STATE CLEARINGHOUSE NO. 2010061069

Thank you for the opportunity to review the above document. We understand that the District is not currently pursuing Clean Water State Revolving Fund (CWSRF) financing for this Project. As a funding Agency and a state Agency with jurisdiction by law to preserve, enhance, and restore the quality of California's water resources, the State Water Resources Control Board (State Water Board) is providing comments on the California Environmental Quality Act (CEQA) document prepared for the Project.

The District may want to consider the CWSRF Program to provide funding for future construction. The State Water Board, Division of Financial Assistance, is responsible for administering CWSRF financing. The primary purpose for the CWSRF Program is to implement the Clean Water Act and various state laws by providing financial assistance for wastewater treatment facilities necessary to prevent water pollution, recycle water, correct nonpoint source and storm drainage pollution problems, and provide for estuary enhancement, thereby protecting and promoting health, safety and welfare of state inhabitants. The CWSRF Program provides low-interest funding equal to one-half the most recent State General Obligation Bond Rates with a 20-year term. Applications are accepted and processed continuously. For more information refer to the State Water Board's CWSRF website at: www.waterboards.ca.gov/waterissues/programs/grantsloans/srf/index.shtml.

The CWSRF Program is partially funded by the United States Environmental Protection Agency (USEPA) and requires additional "CEQA-Plus" environmental documentation and review. Three information sheets are included that further explain the environmental review process and additional federal requirements in the CWSRF Program. In addition, an environmental evaluation form is included for the District to submit should it pursue State Water Board funding. The State Water Board can consult directly with agencies responsible for implementing federal environmental laws and regulations. Any environmental issues raised by federal agencies or their representatives will need to be resolved prior to State Water Board approval of a CWSRF financing commitment. For further information on the CWSRF Program environmental review requirements please contact Ms. Michelle Lobo at (916) 341-6983.

It is important to note that prior to a CWSRF financing commitment, projects are subject to the provisions of the Federal Endangered Species Act and must obtain approval from the United States Fish and Wildlife Service (USFWS), and/or National Marine Fisheries Service (NMFS) for any potential effects to special status species.

Please be advised that the State Water Board can consult with the USFWS, and/or NMFS on behalf of the District regarding all federal special status species the Project has the potential to impact if the Project is to be funded under the CWSRF Program.

In addition, CWSRF projects must comply with federal laws pertaining to cultural resources, specifically Section 106 of the National Historic Preservation Act. The State Water Board has been delegated responsibility for carrying out the requirements of Section 106 under a Nationwide Programmatic Agreement executed for the CWSRF Program by the USEPA, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers.

As stated above, the State Water Board has responsibility for ensuring compliance with Section 106 and the State Water Board Cultural Resources Officer (CRO) consults directly with the California State Historic Preservation Officer (SHPO). SHPO consultation is initiated when sufficient information is provided by the CWSRF applicant for projects having potential impacts to cultural resources. Please contact the State Water Board CRO Ms. Cookie Hirn at 916-341-5690, to find out more about the requirements and questions on how to begin the Section 106 compliance process.

The State Water Board has no further comments on the draft PEIR at this time. Thank you for the opportunity to review the District's environmental document. If you have any questions or concerns, please feel free to contact me at (916) 327-9401, or contact Ms. Justine Herrig at (916) 327-9117.

Sincerely,

Lisa Lee
Environmental Scientist

RECEIVED
NOV 04 2010
STATE CLEARING HOUSE

Enclosures (4)

cc: State Clearinghouse w/o enclosures
(Re: SCH# 2010061069)
P. O. Box 3044
Sacramento, CA 95812-3044