A10. Cost and Benefits Summary

The goals of the Proposal are to increase regional self-sufficiency through water conservation and water reuse; more efficiently manage water supplies; improve water quality and ecosystem habitat; update flood and water resource infrastructure; and provide direct water supply benefits to disadvantaged communities (DACs). These goals are guided by regional objectives that are achieved by the Proposal projects. The region also has articulated six objectives to meet the overarching goal identified above. All the projects included in this proposal are multibenefit projects that achieve multiple IRWM Plan objectives. The regional objectives of the Santa Barbara County Region are as follows:

Reduce water demand by increasing water reuse and water conservation measures to increase and extend existing water supplies

Improve operational efficiency and supply reliability

Increase water supply in the most cost-efficient and reliable manner and utilize conjunctive use

Improve flood management to protect people, property, and ecosystems

Improve quality of groundwater, stormwater runoff, agricultural water runoff, and treated water discharges to regional water bodies

Practice resource stewardship by practicing water management that protects and restores ecosystems and wildlife habitat

EXHIBIT 10.0-1
IRWM Plan Objects Met by Projects

Project	IRWM Plan Objectives Met By Projects					
	Reduce Water Demand	**Improve Operational Efficiency and Supply Reliability**	**Increase Water Supply**	**Improve Flood Management**	**Improve Water Quality**	**Practice Resource Stewardship**
Project 1: City of Lompoc, Lompoc Valley Leak Detection and Repair Project	✓	✓	✓			
Project 2: City of Santa Maria, Untreated Water Landscape Irrigation Project	✓	✓	✓		✓	
Project 3: City of Santa Maria, LeakWatch Project	✓	✓	✓		✓	
Project 4: City of Goleta, San Jose Creek Capacity Improvement and Fish Passage Project			✓	✓	✓	✓
Project 5: Central Coast Water Authority (CCWA), Water Supply Reliability and Infrastructure Improvement Project		✓	✓			✓
Project 6: Goleta Sanitary District (GSD), Wastewater Treatment Plant Upgrade	✓	✓			✓	✓
Project 7: City of Guadalupe, Recycled Water Feasibility Study	✓		✓		✓	

Summary of Costs and Benefits

The overall Proposal benefit-to-cost ratio is greater than 1. The monetized Proposal benefits amount to greater than $64.2 million and are greater than the sum of the individual project costs, which is $60.4 million. A summary of the Proposal costs and benefits is presented in Table 20. In addition to the quantifiable benefits represented in these calculations, there are also significant non-monetary benefits from the projects that are discussed qualitatively throughout Attachments 7, 8, and 9. For example, several projects improve a significant area of high-quality steelhead trout habitat. Other projects reduce the quantity of carbon dioxide emission related to water treatment. The additional non-monetary benefits are expected to make the true benefit cost ratio significantly greater.

Each of the seven Projects included in this Proposal achieves significant benefits. However, because Project 7 is a feasibility study with no quantifiable benefits until implementation of potential distribution systems and tertiary treatment facilities following the feasibility study, Project 7 is not included in the economic analysis per DWR instructions.

Water Supply (Attachment 7)

Several projects included in this Proposal target local and regional water supply reliability. The monetized water supply benefits for the Proposal total $2.6 million (Table 20).

- ***Reduce water demand by increasing water reuse and water conservation measures to increase and extend existing water supplies -*** Project 1 conserves water by reducing system water loss through leak detection. Projects 2 and 3 also extend existing supplies through conservation. Project 6 increases the reliability of treated water available for tertiary treatment at the existing water reuse facility.
- ***Improve operational efficiency and supply reliability -*** Project 2 more efficiently uses local lower-quality groundwater supplies in order to free up imported SWP water for potable use in the region. It will water plants with hard, mineralized, and nitrate-affected groundwater so that the City will be able to apply its softer, less mineralized imported water supply (SWP water) to domestic use thereby, increasing supply reliability. Project 5 upgrades crucial segments of a water delivery system increasing supply reliability and operational efficiency. Projects 1 and 3 employ leak detection to increase operational efficiency and supply reliability. Project 6 increases the reliability of treated water available for tertiary treatment at the existing water reuse facility.
- ***Increase water supply in the most cost-efficient and reliable manner –*** Project 3, will save water through early detection and repair of leaks extending the existing water supply of the City. The City relies on imported high-quality high-cost SWP water that is blended with local lower-quality, lower-cost groundwater for its drinking

water needs. Saving water will conserve SWP water, which will assist the City in achieving statewide conservation goals. Project 1 also saves water through leak detection. Project 2 more efficiently uses local lower-quality groundwater supplies in order to free up imported SWP water for potable use in the region. Project 5 repairs and protects the pipeline to ensure continued operation of SWP water deliveries in the most cost-efficient and reliable manner. Project 7 studies the feasibility of recycling water that would extend water supplies.

Water Quality and Other Benefits (Attachment 8)

This Proposal includes water quality benefits and other benefits including improved air quality and reduced carbon footprint and other benefits specific to each Project. The monetized Proposal water quality and other benefits total $7.4 million (Table 20).

Water Quality

Several projects included in this Proposal improve water quality. Water quality benefits include:

- ***Improve quality of groundwater, stormwater runoff, agricultural water runoff, and treated water discharges to regional water bodies –*** The purpose of Project 6 is to upgrade GSD wastewater treatment facilities to full secondary level. The Project will decrease the amount of solids and oxygen demanding compounds entering the Pacific Ocean. The cleaner discharge will enhance the beneficial uses of the ocean waters in the vicinity of the discharge. The beneficial uses include: water contact and non-water contact recreation, aesthetic enjoyment of the ocean, commercial and sport fishing, fish migration, fish spawning, and marine habitat. Project 2 improves the quality of irrigation water returning to groundwater; it improves groundwater quality as it applies low-quality groundwater (high in nitrates) to landscaping. Project 4 includes an articulated concrete revetment bottom which will allow for natural filtration of runoff, especially during low-flow events. Because Project 4 will stop flood waters from washing over agricultural and industrial areas and flowing into the creek, overall contamination in the slough will be reduced. Project 7 may lead to the use of recycled water for groundwater recharge which would improve groundwater quality.

This Proposal also achieves the following specific benefits discussed in this economic analysis:

- Improving drinking water quality through management of local supply resources
- Improving wastewater quality by utilizing advanced treatment of wastewater
- Increasing compliance with water quality standards

Air Quality and Climate Change

Several projects respond to air quality and climate change issues by improving air quality and reducing carbon footprint. The Proposal reduces energy consumption with Project 6 replacing outdated equipment with new energy efficient equipment to treat wastewater, and with Projects 1 and 3 initiating a leak detection program to read water meters and detect leaks more efficiently. With Project 3, the fuel savings from reduced vehicle use will improve local air quality and reduce greenhouse gas emissions.

Other Benefits

Each of the projects includes other benefits in addition to air quality and water quality benefits previously discussed. Other benefits include the following:

- Avoided Landscaping Costs by irrigating landscape with nitrate-rich groundwater, reducing maintenance costs
- Avoided Staffing Costs by automating the meter reading process
- Aesthetics and improved visual appearance of the channel and surrounding creek banks
- Environmental enhancement of fish and wildlife, an opportunity for the City to promote environmental education, and restoration of the channel to remove an impediment to the migration of the endangered steelhead trout
- Economic Justice for the redevelopment area of the City of Goleta, which is a DAC
- Avoided Repair Costs by proactively repairing distribution pipelines before failure
- Avoided Operations Costs by replacing outdated infrastructure and equipment with new, more efficient facilities
- Avoided Water Quality Fines by meeting treatment requirements
- Avoided property damage, risk of lawsuits and insurance and legal fees as a result of reducing leaks in the water distribution system

Flood Damage (Attachment 9)

The Proposal contributes to the long-term reduction in flood damages. This will be accomplished through a project that reduces the potential for flood events to damage residential and commercial property, generate emergency response costs, and cause a loss in net income and revenue. The flood control project in this Proposal is located in the Old Town Goleta (a DAC). It gives the area improved flood protection, a more sustainable flood management system, an enhanced ecosystem, and improved wetlands and ocean water quality. The monetized Proposal flood damage reduction benefits total $54.3 million (Table 20).

- ***Improve flood management to protect people, property, and ecosystems –*** Project 4 is a multi-benefit project that will increase flood conveyance capacity, reduce flood hazard, and provide fish passage for migrating endangered steelhead trout.

Table 20, Proposal Project Costs and Benefits Summary
Proposal: Santa Barbara County Region Prop 84 IRWM Implementation Grant Application – Round 1
Agency: Santa Barbara County Water Agency

Project	Agency	Total Present Value Project Costs (1)	Total Present Value Project Benefits				B/C Ratio
			Water Supply (2)	Flood Damage Reduction (3)	Other (4)	Total	
(a)	(b)	(c)	(d)	(e)	(f)	(g) (d) + (e) + (f)	(h) (g) / (c)
Project 1: Lompoc Valley Leak Detection and Repair Project	City of Lompoc	$660,970	$1,142,380	$0	$0	$1,142,380	**1.7**
Project 2: Untreated Water Landscape Irrigation Project	City of Santa Maria	$1,042,416	$454,421	$0	$980,017	$1,434,438	**1.4**
Project 3: LeakWatch Project	City of Santa Maria	$1,993,716	$448,307	$0	$1,284,907	$1,733,214	**0.9**
Project 4: San Jose Creek Capacity Improvement and Fish Passage Project	City of Goleta	$22,774,512	$0	$54,252,000	$0	$54,252,000	**2.4**
Project 5: Water Supply Reliability and Infrastructure Improvement Project	Central Coast Water Authority	$610,571	$531,587	$0	$392,399	$923,986	**1.5**
Project 6: Wastewater Treatment Plant Upgrade	Goleta Sanitary District	$33,246,829	$0	$0	$4,758,407	$4,758,407	**0.1**
Project 7: Recycled Water Feasibility Study (5)	City of Guadalupe	$73,044	N/A	N/A	N/A	N/A	**N/A**
TOTAL		**$60,402,058**	**$2,576,695**	**$54,252,000**	**$7,415,730**	**$64,244,425**	**1.1**

(1) From Exhibit C, Table 11, column (i). Or from Exhibit #, Table 17, column (i). Study costs for Project 7 are only included in Table 20. The costs of constructing a project based on the Study are speculative at this time and are only discussed qualitatively in Attachment 7.

(2) From Exhibit C, Table 15, column (d)

(3) From Exhibit E, Table 19, row (e)

(4) From Exhibit D, Table 16, column (j)

(5) Although probable, the benefits of constructing a project based on the Study are speculative at this time; therefore, the benefits of Project 7 are only discussed qualitatively and monetary benefits were not considered.