

CHAPTER 2

Goals and Objectives

The purpose of this chapter is to discuss the Goals and Objectives of the IRWMP. The following related topics are presented:

- Development Process
- Ranking
- Goals and Objectives
- Narrative for Water Supply Reliability (Goal #1)
- Narrative for Flood Protection and Planning (Goal #2)
- Narrative for Water Quality Protection and Enhancement (Goal #3)
- Narrative for Watershed Protection and Management (Goal #4)
- Narrative for Integrated Regional Water Management (Goal #5)
- Narrative for Public Education and Information (Goal #6)

These topics are discussed in detail below.

2.1 DEVELOPMENT PROCESS

The IRWMP was developed in three phases: Phase 1 centered on developing the goals and objectives for the region; Phase 2 focused on developing and prioritizing projects; and Phase 3 focused on drafting, and public review of, the IRWMP.

Phase 1 of the NSV IRWMP process focused on identifying the region's needs, issues, and aspirations, and then developing goals and objectives for the region consistent with the region's identified needs, issues, and aspirations. The Phase 1 stakeholder workshops, held in Oroville, Red Bluff and Colusa, on January 18, and 19, 2012, focused on soliciting input from a wide-range of stakeholders in the region. In early February 2012, the consultant team reviewed public comments collected from November 29, 2011, through January 31, 2012, and developed preliminary draft goals and objectives to initiate and stimulate the NSV IRWM TAC and NSV Board discussion. The consultant team developed five broad goal categories, based on the issues and concerns raised in the public comments. From these issues and concerns, the consultant team developed specific objectives for each goal based on DWR IRWM Guidelines, the general water resource-related needs of the region, geography, specific public concerns, and measurability.

Following the discussion of the preliminary draft goals and objectives at the February 16, 2012, TAC meeting, a TAC Subcommittee was formed to further refine the draft goals and objectives. The Subcommittee consisted of one TAC member from each of the six participating counties, either the staff or landowner appointee. The TAC Subcommittee meetings also included participation from the NSV Board Chair and Vice Chair in an effort to bring about a smooth transition of concepts to the NSV Board. This Subcommittee met several times between February and June 2012 to develop the objectives recommended to, and ultimately adopted by, the NSV Board in June 2012. Having objectives firmly established prior to commencing Phase 2 was critical to effectively identify and review potential projects and programs submitted for

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evaluation and prioritization by project proponents during Phase 2 of the IRWMP development process.

Updated draft goals and objectives were brought forward by the Subcommittee to the TAC at their March 15, 2012, meeting. The TAC and members of the public provided comments on the draft goals and objectives – specifically related to Goals #1 and #2 - at that meeting. Subsequently, the TAC Subcommittee met with the consultant team on March 23, 2012, and independently met on April 11, 2012, to discuss further changes to the draft goals and objectives based on TAC input and public comments received through April 10, 2012. The TAC Subcommittee then brought forward revised draft goals and objectives for discussion at the April 19, 2012, TAC meeting. The TAC, and members of the public, provided comments on the draft goals and objectives – primarily related to Goals #3, #4, and #5 - at the April 19, 2012, TAC meeting.

The first phase of written public comments on Goals #1 and #2 closed on March 2, 2012. These comments were brought forward as part of the TAC's discussion for the first revision of the draft goals and objectives at its March 15, 2012, meeting. The second phase of written public comments on the draft goals and objectives closed on April 10, 2012. This next round of comments was brought forward as part of the TAC's discussion for the second revision of the draft goals and objectives at its April 19, 2012 meeting. Copies of all written comments received were made available on the website and in TAC and NSV Board meeting agenda packets.

At the April 19, 2012, TAC meeting, the TAC forwarded their recommendation to the NSV Board on goals and objectives by consensus vote after significant discussion, public comment, and modification. On May 7, 2012, the NSV Board reviewed and discussed the TAC recommendations, made several revisions and heard extensive public comment. The NSV Board decided in concept, to adopt the goals and objectives. However, the NSV Board asked that the TAC refine the preamble to the goals and objectives, which was written to provide context for the goals and objectives to provide more clarity, and also requested the TAC to add and/or revise definitions for a number of terms in the goals and objectives, and provide the NSV Board with a draft narrative to explain the thought process behind the development of the recommended goals and objectives.

The TAC then further refined the preamble and definitions and revised the goals and objectives based on the NSV Board's comments at the May 17, 2012 TAC meeting. The major change made to the recommended goals and objectives was the addition of a sixth goal (Public Education and Information Dissemination), populated with various related objectives that had been listed under the previous five goals. The TAC decided to recommend its revised preamble and goals and objectives to the NSV Board for adoption on May 17, 2012. Due to a tight turnaround time, the TAC Subcommittee meanwhile drafted the draft narrative for the NSV Board's reference at its June 2012 meeting.

The NSV Board re-considered, and ultimately adopted, the goals and objectives, at its June 4, 2012, meeting along with the introductory text, as refined by the TAC at the May 17, 2012, TAC meeting. The NSV Board reviewed draft IRWMP definitions and a draft narrative at this same meeting. The NSV Board wanted to define any terms that were subject to interpretation or could

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be perceived as controversial to alleviate potential confusion. These terms now reside in the NSV IRWMP Glossary.

The introductory text to the goals and objectives was developed to set the context and framework for the goals and objectives. The introductory text includes the statement of intent which was specifically developed to clarify that local agencies would be implementing the IRWMP for the benefit of the people and resources in the region. This introductory text is provided at the beginning of Section 2.3 below.

2.2 RANKING

Consistent with DWR IRWM Guidelines, a ranking was assigned to each objective. Ranking categories were: “*foundational*”, “*critical*”, “*high*”, and “*medium*”. The list of objectives was evaluated as a whole when assigning the foundational, critical, high, and medium rankings (*i.e.* these rankings were not done within the context of each goal).

The “*foundational*” objectives are regarded as essential, or a prerequisite, for: determining baseline conditions from which to measure the performance of programs and projects to accomplish other objectives; obtaining core data and information upon which to make informed water management decisions; and/or to inform the interested public of resource and resource-related information in the region.

A “*critical*” objective is critical compared to other objectives, not just the objectives in its goal category, and “*critical*” rankings were reserved for objectives that directly addressed public health or safety.

Objectives that addressed economic health for the region generally received a “*high*” ranking, while environmental objectives generally received a “*medium*” ranking in response to a number of public comments that stated people should come before the environment. All objectives listed are considered important (otherwise it was not listed), but a “*medium*” ranking just meant it’s less of a priority than other ranking categories.

The NSV Board ultimately approved this tier-based approach for rating objectives for the region. However, the NSV Board and TAC did consider other options for prioritization which included numerical ranking of each objective, grouped objectives for specific geographic areas in the region, and grouping objectives into short-term and long-term categories of priorities. The NSV Board decided to prioritize the objectives to help with project prioritization during Phase 2 of the IRWMP process. Furthermore, the NSV Board decided to prioritize objectives to demonstrate the importance, and order of priority, the NSV Board placed for each objective. The prioritization tiers then served as an indicator of the NSV Board’s priorities for Phase 2 of the IRWMP development.

In short, through an iterative process with stakeholder input, consultant team input, TAC and NSV Board input, the Subcommittee identified and refined objectives so that the most important watershed objectives were made clear. These rankings are for general objectives; individual projects may rise in importance based on specific funding criteria and/or additional considerations in the future, particular to the project.

2.3 GOALS AND OBJECTIVES

The goals and objectives developed for the NSV IRWMP are intended to serve as the cornerstone foundational elements from which the IRWMP will be shaped. The IRWMP is not regulatory in nature and its development reflects the voluntary cooperation and coordinated planning efforts of local entities within the region, and input from the public. The NSV Board envisions that through implementation of the IRWMP's goals and objectives, DWR and other regional, state, and federal agencies will better understand the full intent of the NSV's IRWMP and, more broadly, the region's guiding principles in regard to water resources management. The established objectives will be used as benchmarks during the development of resource management strategies and the basic criteria for evaluation and prioritization of projects meeting the intent of the IRWMP. Local entities, including but not limited to, cities, Counties, Tribes, and special districts seeking funding and/or endorsement through the IRWMP will implement projects on a voluntary basis that are consistent with the IRWMP, in compliance with existing Federal, State, and local law, as funding becomes available and as authorized within their legal authorities.

As a basis for the broad category goals and specific objectives identified in this IRWMP, the following statement of intent was established for the NSV IRWMP:

To establish a regional collaborative structure with the objective of ensuring an affordable, sustainable water supply that supports agricultural, business, environmental, recreational, and domestic needs of the Northern Sacramento Valley.

Each goal and objective is drafted to support and further the region's statement of intent for the IRWMP. As context for the detailed goals and objectives that follow, it is important to understand that this IRWMP was created by local entities within the region for the benefit of those living, operating, and recreating within the region, as defined in the IRWMP.

The adopted goals and objectives are provided in Table 2-1, below.

Measurements for the objectives are both quantitative and qualitative and are described below along with the narrative for each objective.

Table 2-1. NSV IRWMP Goals and Objectives

Goals	ID	Objectives	Rank/Category
Water Supply Reliability	1-1	Document baseline conditions and trends for surface water and groundwater resources.	Foundational
	1-2	Quantify current and future water demands.	Foundational
	1-3	Maximize efficient utilization and reliability of surface and groundwater supplies in coordination with local groundwater management plans (GMP's).	Foundational
	1-4	Coordinate and protect regional groundwater resources, consistent with locally developed GMP's that monitor groundwater levels, groundwater quality, and inelastic land subsidence.	Foundational
	1-5	Develop regional water transfer guidelines to facilitate efficient management of water supplies that recognize the NSV Region as having the first priority for use.	Foundational
	1-6	Protect existing and established surface water rights.	Foundational
	1-7	Honor and preserve area-of-origin statutory protections.	Foundational
	1-8	Protect existing and established regional Central Valley Project (CVP) and State Water Project (SWP) water contract supplies.	Foundational
	1-9	Increase surface water storage and hydropower generation within the region.	High
	1-10	Develop and implement a regional drought preparedness strategy to minimize socio-economic impacts.	High
	1-11	Develop and improve water resources infrastructure to increase water supply reliability within our region.	High
	1-12	Develop, update, and implement GMPs through local jurisdictions.	High
Flood Protection and Planning	2-1	Develop and coordinate flood risk reduction plans and projects consistent with current law and regulation to provide protection for agricultural, urban and rural communities.	Foundational
	2-2	Evaluate new flood control projects that have potential economic impacts on agricultural land.	High
	2-3	Develop and coordinate flood preparedness programs and alert systems for flood-prone areas consistent with existing flood and hazard mitigation plans.	High
	2-4	Implement mutually beneficial flood risk reduction and floodplain ecosystem enhancement programs and projects on a voluntary basis.	Medium
Water Quality Protection and Enhancement	3-1	Develop and improve infrastructure to meet State and Federal standards for drinking water quality.	Critical
	3-2	Develop and improve infrastructure for wastewater collection, treatment, discharge, and reuse.	High
	3-3	Meet State and Federal standards for water quality in surface water bodies and groundwater basins.	High
	3-4	Minimize adverse water quality impacts from point sources to surface and groundwater.	Medium
	3-5	Minimize adverse water quality impacts from non-point sources to surface and groundwater.	Medium
Watershed Protection and Management	4-1	Aggressively manage invasive species within the watershed.	High
	4-2	Integrate mutually beneficial agricultural production and habitat conservation programs and projects that don't redirect impact to neighbors.	Medium
	4-3	Improve and protect riparian and fish habitat, and fish passage.	Medium
	4-4	Implement healthy forest/foothill management activities that improve watersheds.	Medium
	4-5	Protect wetlands that are critical to hydrologic function.	Medium
	4-6	Integrate recreational opportunities within water resource programs and projects.	Medium
	4-7	Evaluate habitat conservation and ecosystem improvement programs and projects that have potential economic impacts on agricultural lands.	Medium
Integrated Regional Water Management (IRWM) Sustainability	5-1	Preserve the autonomy of local governments, special districts, and Tribes.	Foundational
	5-2	Enhance communication and coordination among federal, state, Tribal, and local governments, and other stakeholders.	Foundational
	5-3	Maintain a governance structure to update the Integrated Regional Water Management Plan (IRWMP) and support IRWMP project implementation.	Foundational
	5-4	Coordinate with neighboring IRWM regions to identify opportunities to enhance water management.	Foundational
	5-5	Pursue funding opportunities to implement programs and projects consistent with the IRWMP.	Foundational
	5-6	Coordinate IRWM activities with land-use planning.	Foundational
Public Education and Information Dissemination	6-1	Conduct public education and outreach to promote IRWMP goals.	Foundational
	6-2	Develop and disseminate information to protect regional water supplies.	Foundational
	6-3	Disseminate information on flood risks, Federal Emergency Management Agency's (FEMA's) flood insurance rate maps (FIRM), and new FEMA policies.	Foundational
	6-4	Develop and disseminate water quality information throughout the region.	Foundational
	6-5	Develop and disseminate scientific information on aquatic, riparian, and watershed resources.	Foundational

2.4 NARRATIVE FOR WATER SUPPLY RELIABILITY (GOAL #1)

2.4.1 (1-1) Document baseline conditions and trends for surface water and groundwater resources. (Foundational)

Effective water management of both surface water and groundwater relies on accurate and objective quantitative information. Documentation of baseline conditions and analysis of trends are critically important to identify current and projected future water supply quality and quantity, in order to evaluate proposed water management improvements. In addition to documenting historic and current conditions, this objective supports continuous monitoring and recording of conditions to provide high quality technical information for informed decision-making. Projects or programs that would contribute toward meeting this objective include, but are not limited to, those that gather, compile, analyze, model, and/or facilitate sharing baseline water resources data.

Measurement of this objective will be conducted through: 1) counting the number of reports available documenting baseline conditions; 2) establishing a region-wide water balance under low, normal, and wet conditions/years; and/or 3) considering whether gaps in information have been identified.

2.4.2 (1-2) Quantify current and future water demands. (Foundational)

This objective aims to provide the best available information on current and projected future water demands associated with urban, agricultural, commercial, Tribal, and industrial water use. Water demands change as population grows and ebbs, as crops and industries change, as technology changes and as a result of water conservation and water use efficiency programs. Decision-makers need up-to-date information on water demands to efficiently and effectively plan future projects and programs. Projects or programs that would contribute toward meeting this objective include, but are not limited to, those that gather, develop, calculate, model, or estimate urban, agricultural, commercial or industrial demands or use patterns.

Measurement of this objective will be conducted through 1) counting the number of reports that document baseline conditions; 2) identifying gaps of insufficient water supply; and 3) tracking progress towards quantifying current and future water demands for areas not yet quantified.

2.4.3 (1-3) Maximize efficient utilization and reliability of surface and groundwater supplies in coordination with local groundwater management plans (GWMPs). (Foundational)

This objective encourages efficient use and management of surface water and groundwater supplies to improve water supply reliability within the NSV IRWMP area, while respecting independent local authority and the unique aspects of existing GWMPs. Projects or programs that would contribute toward meeting this objective include, but are not limited to, those that improve efficient utilization and reliability of surface and groundwater supplies, or improve communication and coordination among neighboring jurisdictions within the NSV IRWMP area.

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Measurement of this objective will be conducted by 1) mapping the total acreage incorporated into GWMP's; 2) identifying geographic coverage gaps for areas overlying groundwater basins not covered by baseline conjunctive use or groundwater protection programs; and 3) tracking progress towards developing programs for areas not covered.

2.4.4 (1-4) Coordinate and protect regional groundwater resources, consistent with locally developed GWMP's that monitor groundwater levels, groundwater quality, and inelastic subsidence. (Foundational)

This objective encourages protection of groundwater resources against activities that may cause a decrease in water supply, water quality, or result in inelastic land subsidence. This objective also improves regional coordination of groundwater protection, since groundwater resources are often shared across two or more political jurisdictions. Currently, locally developed GWMP's provide for monitoring groundwater levels, quality and inelastic land subsidence in some areas; these GWMP's provide a foundation for groundwater protection activities. Projects or programs that would contribute toward meeting this objective, include but are not limited to, those that help increase understanding of threats to groundwater quantity or quality, prevent or mitigate harm to groundwater resources, or coordinate such activities across political or agency boundaries.

Measurement of this objective will be conducted through: 1) counting the number of "coordination" actions; 2) measuring actual yield against the established sustainable yield or assessing the number of basins operating within established sustainable yields; and 3) developing a groundwater quality index, groundwater level index, and land subsidence index.

2.4.5 (1-5) Develop regional water transfer guidelines to facilitate efficient management of water supplies that recognize the NSV Region as having the first priority for use. (Foundational)

Long-term self-sufficiency in water supplies is an important goal for the region. Water transfers in the region have been implemented by individual water right holders, with some degree of oversight for water transfers by counties that have adopted specific ordinances. Fulfilling this objective would help to streamline the water transfer process and focus transfers on those that preserve local water rights and improve water supply reliability within the NSV region. The creation of shared, regional, non-regulatory guidelines will help to identify opportunities for the management of available supplies to meet water needs within the region now and into the future. Where beneficial, large water wholesalers, such as the United States Bureau of Reclamation and DWR, must participate in these discussions.

Measurement of this objective will be through: 1) documenting whether or not each county has adopted water transfer guidelines that have been developed within a framework identified for the NSV, and subsequent adoption for the NSV Region; and 2) evaluating whether or not water transfers that keep water rights whole, through maintaining beneficial use, have been facilitated. The measure would be first by county and then at the regional level.

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2.4.6 (1-6) Protect existing and established surface water rights. (Foundational)

Protecting existing and established surface water rights is critical to meeting the goal of maintaining long-term regional self-sufficiency regarding water supply. Fulfilling this objective would strengthen and perpetuate the longstanding advocacy positions of water right holders and local government within the Sacramento Valley. Protecting surface water rights may be achieved through efficient water use, conservation, public education, usage documentation, water transfers, and legislative and legal actions to assure sufficient documentation of reasonable and beneficial use as set forth in Article 10, Section 2 of the State Constitution.

Measurement of this objective will be through assessment of the level of: 1) records of existing and established water usage related to water rights; and 2) evaluation of water rights utilization or plans for utilization. The completeness of the documentation of water rights, along with utilization records to substantiate the need for water, would be considered in the evaluation. Water rights holders in the region include public agencies, municipalities, corporations, individuals, and others.

2.4.7 (1-7) Honor and preserve area-of-origin statutory protections. (Foundational)

The preservation of area-of-origin statutes has been, and will continue to be, central to water policy in the Sacramento Valley. Fulfilling this objective would strengthen and preserve a longstanding position held by water right holders and local government within the region since the adoption of the watershed protection (area-of-origin) statutes in state law. This position will continue to be strongly reinforced in statewide water planning forums. Also, the prospects for preservation through a constitutional amendment will be pursued as the opportunity avails itself to ensure that water right holders, existing and future, in areas where water originates (particularly in the Sacramento River watershed) have rights to use this water which are senior to water users outside of the region.

Measurement of this objective will be through documentation of existing and established or planned water uses.

2.4.8 (1-8) Protect existing and established regional Central Valley Project (CVP) and State Water Project (SWP) water contract supplies. (Foundational)

Existing contracts for supplies from the CVP and SWP represent a significant part of the total water supply for agricultural and urban use in the region. Fulfilling this objective would strengthen the prospects for the continued delivery of reliable surface water under these contracts. The existing contracts and their renewal in the future are essential to maintaining water supply reliability to individual CVP and SWP contractors in the region. A reduction in these contract supplies would severely jeopardize the ability to maintain reliable water supplies in the region and would increase demands on local groundwater supplies.

Measurement of this objective will include: 1) documentation of existing and established water contracts; and 2) documentation of contract supplies and utilization, or plans for utilization. The measure would be the completeness of the documentation of contracts by all contractors and the completeness of the ongoing record of utilization.

2.4.9 (1-9) Increase surface water storage and hydropower generation within the region. (High)

Additional surface water storage in the region would address multiple needs, including but not limited to local and regional water supply reliability. These water supplies would offer the potential to meet increased water needs within the region and allow the region to contribute to meeting water needs within the greater Sacramento Valley or state, if regional needs are met. Additional hydropower generation facilities would provide economic opportunities and address the growing demand for renewable energy.

Measurement of this objective will be determined by the number of acre-feet and number of megawatt increase since adoption of this IRWMP. Under objective 1-1, the baseline level of surface water storage and hydropower generation capacity should be documented.

2.4.10 (1-10) Develop and implement a regional drought preparedness strategy to minimize socio-economic impacts. (High)

No region is immune to droughts, which may be more severe and longer in duration than documented in the recorded hydrologic period for the Sacramento Valley. Many water users in the region had reduced surface water supplies in the recent droughts in 1991-1994 and 2007-2009. Water supply reductions during droughts of a greater magnitude would have the potential to be devastating to agricultural production, urban users, the economy, and the groundwater basin. Having a voluntary, region-wide strategy developed in advance of the occurrence would provide the region with a thoughtful and equitable “roadmap” for managing the available water resources during drought conditions to minimize adverse impacts to the socioeconomic health, welfare, and resources of the region. Implementing common region-wide messaging and strategies can increase government efficiency and water use efficiency. Coordinated activities would be executed within the existing authority and jurisdiction of local agencies.

Measurement of this objective will be based on: 1) whether or not a drought preparedness strategy is developed; and 2) the extent to which the strategy has been implemented.

2.4.11 (1-11) Develop and improve water resources infrastructure to increase water supply reliability within our region. (High)

Achieving water supply reliability requires the ability to deliver water where and when it is needed. Fulfillment of this objective would identify infrastructure necessary to deliver available water supplies to water deficient areas in a timely manner. This delivery may require upgrading or replacing aging facilities, interconnecting existing facilities, and constructing new facilities. Many individual cities, water agencies, and irrigation districts have plans to improve water resources infrastructure within the region to increase individual and region-wide water supply reliability.

Measurement of this objective will be quantified through: 1) counting the number of IRWM listed infrastructure projects completed per year, per County, which improve water supply reliability; and qualitative through 2) counting/documenting the number of times water agencies or customers were not able to receive water.

2.4.12 (1-12) Develop, update, and implement GWMP's through local jurisdictions. (High)

This objective encourages local agencies to develop, update and implement GWMP's. GWMP's are important to inform the public about groundwater resources and ensure sustainable use of groundwater. Through the GWMP update process, amendments to the various GWMP's could improve regional consistency and compatibility of key provisions in local GWMP's. Projects or programs that would contribute toward meeting this objective include, but are not limited to, the development of new local or regional GWMP's, updates of existing GWMP's, and implementation of GWMP provisions.

Measurement of this objective will be through: 1) evaluating whether or not all the basins in the region have current GWMP's; and 2) the extent to which each are being implemented and updated.

2.5 NARRATIVE FOR FLOOD PROTECTION AND PLANNING (GOAL #2)

2.5.1 (2-1) Develop and coordinate flood risk reduction plans and projects consistent with current law and regulation to provide protection for agricultural, urban, and rural communities. (Foundational)

The NSV, by virtue of its location and geography, has urban, rural, and agricultural areas that will be threatened by floods. Fulfilling this objective would provide an assessment of the flood risk confronting the respective communities, the extent to which flood risk reduction opportunities have been identified and implemented, and identify the communities for which flood risk reduction opportunities need to be evaluated and/or implemented. Projects or programs that would contribute toward meeting this objective include, but are not limited to:

- Investigation of use of flood waters for groundwater recharge and storage opportunities;
- Evaluation of use of flood waters for increased surface water storage and potential hydroelectric generation opportunities;
- Flood risk assessment;
- Flood risk reduction planning and coordination;
- Construction or improvement of flood risk reduction infrastructure;
- Flood response and recovery plans; and,
- Efforts to improve operations and maintenance of flood risk reduction infrastructure..

Coordination of flood risk reduction planning and projects will increase regional efficiency and effectiveness at reducing flood risks.

The intent of this objective would be to identify the flood risks from the information in objective 6-3 and any other means.

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Measurement of this objective will be qualitative through: 1) surveying staff about their perception of improved flood risk reduction plans and project and coordination of these efforts; and 2) evaluating the extent to which infrastructure or management plans have been identified to reduce the flood risks. To assist with this measurement, an inventory would be created to characterize the flood risks and identify and/or develop infrastructure or management plans to reduce flood risks for staff to review.

2.5.2 (2-2) Evaluate new flood control projects that have potential economic impacts on agricultural land. (High)

Flood control projects that significantly modify or create new infrastructure – *e.g.* those that would create new bypasses, set levees back from the river channel, raise levee height, or lower weirs – have the potential to negatively impact agricultural lands and the economies of agricultural communities. Such projects could necessitate taking agricultural land out of production or increase periodic flooding on some lands. It is important for the region to assess and discuss these potential impacts early in the project development and proposal stages. One significant planning effort is the newly adopted Central Valley Flood Protection Plan (CVFPP), which has identified potential modifications to features of the State Plan of Flood Control (SPFC) that could significantly impact areas within the region. Evaluation of the CVFPP's potential impacts on agricultural lands would assist affected local agencies and landowners in determining their response and provide an opportunity for participation in the regional planning forums that will be initiated as the CVFPP is implemented. By July 1, 2013 DWR will be providing floodplain maps (100-, 200-, and 500-year) associated with the SPFC for use by local land use agencies. Those areas within the region, for which projects may be developed, could potentially benefit by coordinating their approaches for addressing legislative requirements as appropriate.

To measure this objective, the number of flood control projects, with potential economic impacts on agricultural land, that were evaluated will be counted and compared to the number of flood control projects, with potential economic impacts on agricultural land, that were not evaluated.

2.5.3 (2-3) Develop and coordinate flood preparedness programs and alert systems for flood-prone areas consistent with existing flood and hazard mitigation plans. (High)

Flood preparedness programs can be effective in protecting public health and safety in flood-prone areas. Fulfilling this objective would increase the extent and effectiveness of flood preparedness programs and community flood alert systems. Some communities in the region have flood or multi-hazard mitigation plans and flood preparedness programs while others do not. Coordinating efforts aimed at increasing the level of awareness and preparedness can be helpful to communities in the region and result in improved regional consistency, efficiency, and effectiveness. Projects or programs that would contribute toward meeting this objective include, but are not limited to, planning, coordinating, and testing local and regional flood preparedness programs and alert systems; coordination in seeking assistance from the State Office of Emergency Services and Federal Emergency Management Agency; and implementing, updating, or maintaining infrastructure and systems for flood preparedness and emergency alerts.

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Measurement of this objective will include the extent to which flood preparedness programs are established for flood prone areas not previously having a program. A simple form of measurement would be counting the number of additional flood preparedness programs and alert systems.

2.5.4 (2-4) Implement mutually beneficial flood risk reduction and floodplain ecosystem enhancement programs and projects on a voluntary basis. (Medium)

This objective encourages flood risk reduction projects and programs that incorporate ecosystem restoration and multi-benefit components such as protecting water quality, improving groundwater recharge, improving water supply reliability, recreation, power generation, and adapting to climate change. Integrating floodplain ecosystem enhancement with flood risk reduction projects when feasible can greatly enhance the prospects for implementation as well as maximize the overall benefits of the project. In addition to flood risk reduction, this tool also provides the following benefits: groundwater recharge, slowed flood flows, reduced sediment, water quality improvements through filtration of nutrients and pesticides, and enhanced habitat value. The potential for integrating floodplain ecosystem enhancements into a viable flood risk reduction project would depend on the voluntary combining of both by the project sponsor.

Measuring this objective will include counting the number of opportunities identified for incorporating floodplain ecosystem enhancements into flood risk reduction infrastructure or management plans.

2.6 NARRATIVE FOR WATER QUALITY PROTECTION AND ENHANCEMENT (GOAL #3)

2.6.1 (3-1) Develop and improve infrastructure to meet state and federal standards for drinking water quality. (Critical)

Water quality can be maintained and improved using either watershed-based controls or water treatment infrastructure. State and Federal drinking water standards may be unattainable for some local water supply systems without improved treatment systems and/or infrastructure. This objective addresses the need for new or improved infrastructure or facilities where source protection activities are insufficient, less cost-effective or infeasible.

Measurement of this objective will be through assessing the level to which municipal water purveyors' Capital Improvement Project budgets have increased to reflect increases in drinking water quality infrastructure investments.

2.6.2 (3-2) Develop and improve infrastructure for wastewater collection, treatment, discharge and reuse. (High)

Some communities and individual residences in the region need to develop or improve their wastewater infrastructure to meet increasingly stringent effluent quality regulations. Additionally, aging wastewater infrastructure will need to be replaced or upgraded. Opportunities for local water reuse, which are supported by state policy, will increase as effluent quality improves. Projects or programs that would contribute toward meeting this objective include but are not limited to planning, constructing, and improving centralized wastewater

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collection, treatment and disposal systems, de-centralized septic systems, and infrastructure for water reuse.

Measurement of this objective would be through assessing the level to which: 1) wastewater authorities' Capital Improvement Project budgets have increased to reflect increases in wastewater infrastructure investments; and 2) municipalities and community service districts comply with the State's "20x2020 Water Conservation Plan".

2.6.3 (3-3) Meet State and Federal standards for water quality in surface water bodies and groundwater basins. (High)

Surface water bodies that do not consistently meet all State and Federal water quality standards are listed as impaired. Impairment listings trigger State regulators to develop control programs that set appropriate targets, allocate load reductions of the impairing pollutant(s), and develop implementation plans for meeting those allocations. State regulators are significantly challenged in identifying pollutant sources and producing feasible plans for improving surface water bodies or groundwater basins. This objective encourages local entities to identify pollutant sources and to develop feasible implementation plans to attain standards for surface water or groundwater basins. Projects or programs that would contribute toward meeting this objective include, but are not limited to, local planning efforts, coordination, and project implementation (such as pollution prevention or remediation) that help to meet State and Federal standards for surface water and/or groundwater.

Measurement of this objective would be through: 1) assessing the percentage of impaired water bodies on the 303(d) list with approved programs and plans (*e.g.*, TMDL's), watershed restoration plans, *etc.*) designed to achieve compliance with standards; (2) assessing the level of compliance with Waste Discharge Requirements for treated wastewater discharges to surface water and land; (3) evaluating the compliance record under permits for municipal, construction and industrial stormwater dischargers; and 4) evaluating the compliance with the Irrigated Lands Regulatory Program.

For surface water, programs to address TMDL's should be contained in the Basin Plan. The Regional Water Quality Control Board (RWQCB) is responsible for developing TMDL's, although stakeholders can potentially lead the development. Regional authorities primarily need to implement such programs through permit programs.

2.6.4 (3-4) Minimize adverse water quality impacts from point sources to surface and groundwater. (Medium)

Surface water and groundwater pollution results from a combination of point and non-point discharges. Point sources include municipal and industrial wastewater as well as urban, industrial, and construction-site stormwater discharge. Point source discharges to surface water and groundwater are regulated by Waste Discharge Requirements issued by the RWQCB. Point sources to surface water are also regulated by the federal National Pollutant Discharge Elimination System permits administered by the RWQCB. Projects or programs that would contribute toward meeting this objective include, but are not limited to, those that minimize adverse water quality impacts associated with point source discharges through both source control and treatment control, in compliance with applicable regulatory requirements. This

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objective is intended to be implemented on a voluntary basis and is not a regulatory action or mandate.

Measurement of this objective would be through assessing the compliance record under regulatory program and permits for regulated municipal separate storm sewer systems (MS4's), construction sites, and industrial facilities. This objective is a subset of objective 3-2.

2.6.5 (3-5) Minimize adverse water quality impacts from non-point sources to surface and groundwater. (Medium)

Surface water and groundwater pollution result from a combination of point and non-point discharges. Non-point sources are diffuse and more difficult to monitor than are point sources. It is also more difficult to assign responsibility for pollution from non-point sources. Non-point sources include runoff from agricultural lands, forests, mining, and urban and residential activities. Agricultural non-point source pollution is regulated by the RWQCB's Irrigated Lands Regulatory Program. Forestry non-point source pollution is regulated by several federal statutes through forest management plans. Mining activities and mine site remediation are regulated by a multitude of federal and state agencies, programs, and policies. Projects or programs that would contribute toward meeting this objective include, but are not limited to, those that minimize the adverse water quality impacts of non-point source pollution through improved source controls and land management practices. This objective is intended to be implemented on a voluntary basis and is not a regulatory action or mandate.

Measurement of this objective will be through assessing the level of compliance with the Irrigated Lands Regulatory Program.

2.7 NARRATIVE FOR WATERSHED PROTECTION AND MANAGEMENT (GOAL #4)

2.7.1 (4-1) Aggressively manage invasive species within the watershed. (High)

Invasive species pose a myriad of threats to local economies, ecosystems, and human health. Invasive species that have a high potential for deleterious effects on management of water resources in the NSV region include, but are not limited to, the non-native giant reed (*Arundo*), tamarisk, Brazilian egeria, hydrilla, Eurasian watermilfoil, purple loosestrife, New Zealand mudsnail, and Eurasian mussels. Projects or programs that would contribute toward meeting this objective include, but are not limited to, those that aggressively monitor for the presence and spread of invasive species, eradicate established infestations, and implement critical control point measures for invasive species in water resource projects and operations.

Measurement of this objective will be conducted through counting: 1) the number of invasive species management projects or project components; 2) acres treated; 3) sites with surveillance/inspection/maintenance; and 4) the annual and cumulative reduction in invasive species distribution from baseline surveys since IRWMP adoption.

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2.7.2 (4-2) Integrate mutually beneficial agricultural production and habitat conservation programs and projects that don't redirect impact to neighbors. (Medium)

Integration of agricultural production with habitat conservation and improvement projects is an effective multi-benefit strategy to improve and increase wildlife habitat in the region and enhance natural resource conditions on the land, while not impacting the highly significant regional economic base and rural tradition of Northern Sacramento Valley agriculture. Projects or programs that would contribute toward meeting this objective include, but are not limited to, those that encourage, coordinate, develop, improve, and implement land management practices that provide mutual benefits to agricultural interests and wildlife habitat, while preventing adverse impacts to neighboring landowners. The potential for integrating habitat conservation elements into agricultural production would be facilitated on a voluntary basis by individual landowners.

Measurement of this objective will entail counting the number of: 1) voluntary agricultural habitat projects; 2) project components; and 3) the acres in joint venture or conservation reserves.

2.7.3 (4-3) Improve and protect riparian and fish habitat, and fish passage. (Medium)

This objective acknowledges the importance of riparian and aquatic habitat enhancement, fish passage improvements, and protection of the region's streams, rivers, lakes, reservoirs, and wetlands. Projects and programs that help fulfill this objective would support regional economic, ecosystem, and quality of life values. Additionally, they would contribute to nationally important commercial and recreational fisheries for Pacific salmon and internationally important migratory waterfowl.

Measurement of this objective will be through counting the number of: 1) fish habitat and fish passage projects and project components; 2) stream miles improved; and 3) spawning habitats restored or rehabilitated. The numbers counted will be measured against the severity of problems per year and cumulatively since IRWMP adoption.

2.7.4 (4-4) Implement healthy forest/foothill management activities that improve watersheds. (Medium)

A key component of watershed improvement and protection in the largely rural Northern Sacramento Valley region is the implementation of management actions that sustain healthy forests and foothill woodlands and grasslands. Healthy forests and foothill woodlands and grasslands provide natural filters and channels for water runoff and promote groundwater recharge, thereby improving water quality, groundwater infiltration and watershed functions that benefit both humans and the environment. Healthy forest/foothill management activities that will contribute to fulfillment of this objective include, but are not limited to, state-of-the-science timber harvesting and silviculture, controlled burns, understory biomass management, eradication of invasive species, establishment of native species, streambank erosion control, road maintenance, erosion control, and sustainable management practices for hardwood harvest and livestock grazing.

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Measurement of this objective would be completed through counting the number of: 1) management activities funded; 2) acres treated; and 3) forest road rehabilitated. The numbers counted would be compared annually and cumulatively since IRWMP adoption.

2.7.5 (4-5) Protect wetlands that are critical to hydrologic function. (Medium)

Hydrologic function of regionally important wetlands, including floodplains and riparian forests, valley bottom tule marsh, vernal pool wetlands, and montane wet meadows, is important to municipal, agricultural, and ecological interests in the region. Important hydrologic functions of wetlands include floodwater attenuation; storm water detention; physical, biological, and chemical processes that improve water quality; groundwater recharge and water storage for regional and downstream benefit.

Measurement of this objective would be assessed by: 1) counting the number of acres of critical wetlands protected; and 2) evaluating the effectiveness of county or regional programs for management of key wetlands per year and cumulatively since IRWMP adoption.

2.7.6 (4-6) Integrate recreational opportunities within water resource programs and projects. (Medium)

Many water resource programs and projects present opportunities to incorporate compatible recreational improvements/components to benefit the public and local economies, such as boating, picnicking, swimming, bird watching, fishing, hunting, and hiking. Projects or programs that would contribute toward meeting this objective include, but are not limited to, those that encourage and/or incorporate recreational facilities when compatible, to increase the number of benefits and beneficiaries of IRWMP projects and programs.

Measurement of this objective would include counting the number of recreation elements included in projects or project components. If possible, it would also be desirable to assess the level of economic growth associated with water-based recreation sectors per year and cumulatively since IRWMP adoption.

2.7.7 (4-7) Evaluate habitat conservation and ecosystem improvement programs and projects that have potential economic impacts on agricultural lands. (Medium)

Some habitat conservation and ecosystem improvement programs designed to benefit the environment and provide broad regional economic benefits have had adverse impacts on adjacent agricultural land uses. This objective is included to promote evaluation of approaches and practices associated with existing and proposed future habitat conservation and ecosystem improvement projects in order to anticipate and avoid or minimize any adverse economic impacts on nearby agricultural land uses.

Measurement of this objective would be conducted through assessing whether habitat conservation and ecosystem improvement programs and projects have positively or negatively impacted the economics of agricultural lands. Positive or neutral economic impacts would demonstrate the successful implementation of this objective.

2.8 NARRATIVE FOR INTEGRATED REGIONAL WATER MANAGEMENT (IRWM) SUSTAINABILITY (GOAL #5)

2.8.1 (5-1) Preserve the autonomy of local governments, special districts, and Tribes. (Foundational)

The development of the NSV IRWMP was initiated by local entities within the region for the benefit of those living, operating, and recreating within the region. This objective clarifies that maintaining the autonomy of local governments and special districts is an important guiding principle of the local entities that teamed together to create the IRWMP. Local governments and special districts in the region will be primary implementers of projects and programs to fulfill the IRWMP objectives. The IRWMP and its NSV Board in no way infringe upon or alter the rights, duties, and authorities of local governments, including Tribes, and special districts.

To measure this objective, an assessment would be conducted on whether or not local governments, special districts, and Tribes are maintaining autonomy. This assessment would be qualitative by surveying staff on their perception of autonomy preservation.

2.8.2 (5-2) Enhance communication and coordination among federal, state, Tribal, and local governments, and other stakeholders. (Foundational)

The success of integrated regional planning efforts will rely upon extensive communication and coordination among all key participants and stakeholders. This objective aims to provide one of the most essential ingredients to develop and implement the NSV IRWMP. The conduct of regular NSV Board and TAC meetings has already contributed to the development and enhancement of networks of communication and coordination on water management-related issues in the region.

This objective would be measured through evaluating: 1) whether positive outreach at public meetings has occurred; and 2) whether correspondence among parties has increased each year and cumulatively since IRWMP adoption. A qualitative assessment would also be conducted by asking staff for their perception of the level of positive two-way participation, opportunities to participate, outreach effort documentation, and ability to contact each other in the regional network.

2.8.3 (5-3) Maintain a governance structure to update the Integrated Regional Water Management Plan (IRWMP) and support IRWMP project implementation. (Foundational)

The successful implementation of the NSV IRWMP requires a governance structure that facilitates regional coordination, communication, and cohesiveness, including continued regional dialog on shared priorities and current events. Fulfilling this objective will ensure that an effective governance structure is maintained to support IRWMP implementation, assess its progress, and update the IRWMP as deemed appropriate. Its success will be dependent on the relationships, integrity, and commitment of the individuals involved to enhancing water management in the region for the benefit of the people and resources of the region.

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This objective will be measured by the currency of the MOU and data management plan, and the number of scheduled NSV Board and TAC meetings that are successfully conducted with a quorum.

2.8.4 (5-4) Coordinate with neighboring IRWM regions to identify opportunities to enhance water management. (Foundational)

Many water projects, programs, and issues transcend the boundaries of IRWM regions. This objective aims to facilitate voluntary coordination with neighboring IRWM regions to enhance water management. The Northern Sacramento Valley neighboring regions include the Westside Sacramento River, Upper Feather River, North Coast, Cosumnes-American-Bear-Yuba, American River Basin, Yuba County, Upper Sacramento-McCloud River, and Upper Pit River. Coordination may provide opportunities for shared participation in projects and programs to enhance water management for the greater area.

This objective will be measured through evaluating whether or not the region and its neighbors have established institutional structures or mechanisms for inter-regional cooperation (such as MOUs or regular meetings).

2.8.5 (5-5) Pursue funding opportunities to implement programs and projects consistent with the IRWMP. (Foundational)

Without funding from outside sources many of the most foundational and critical IRWMP projects may never be realized. This objective encourages regional entities to seek and pursue opportunities to obtain local, state, and federal funding for projects and programs consistent with, and listed in, the IRWMP. Participation in the IRWM process, which ensures regional coordination and support for projects, is viewed favorably by many funding agencies and thereby increases the collective opportunity to obtain funding for implementation.

This objective would be measured by counting the number of: 1) external funding opportunities that have been pursued each year and cumulatively since IRWMP adoption; and 2) grant or loan applications submitted per year and cumulatively since IRWMP adoption; and grant funds received per year and cumulatively since IRWMP adoption.

2.8.6 (5-6) Coordinate IRWM activities with land-use planning. (Foundational)

Land and water use planning are inseparable and the two should be coordinated to sustain the socioeconomic vitality of the region. Legal authority for land use and water planning remains unchanged by the IRWMP. This objective aims at maintaining and improving coordination between land use management and IRWM activities in order to maximize regional benefits from the investment of limited financial resources, and anticipate and prevent unintended adverse consequences to land and water. An inherent benefit of the existing governance structure is that the NSV Board includes publicly elected officials with experience and fiscal responsibility for making decisions on both water and land use matters. Enhanced coordination among land use planners and water managers may result in improved water management in areas such as municipal landscaping programs, public access and recreational area management, changes in land use that affect water resources, General Plan updates and long-term planning, planning review, development review, and habitat management.

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Measurement of this objective would assess the level of increase in communication between water planners and land-use planners. A qualitative survey of staff would be used to perform this assessment.

2.9 NARRATIVE FOR PUBLIC EDUCATION AND INFORMATION DISSEMINATION (GOAL #6)

2.9.1 (6-1) Conduct public education and outreach to promote IRWMP goals (Foundational)

A key to making decisions affecting land and water resources and public health and safety in the region is interaction with members of the public who are knowledgeable about the merits and consequences of resource-related decisions. This objective aims to provide opportunities for the public to learn about and provide input to the IRWMP and its associated programs and projects. A successful outreach program will require an ongoing coordinated effort to provide information to, and receive information from, the public and water managers subsequent to adoption of the IRWMP.

This objective can be measured qualitatively through assessing staff's perception of positive public outreach achievement. To assist with this measurement, a record of public outreach will be maintained.

2.9.2 (6-2) Develop and disseminate information to protect regional water supplies (Foundational)

The management of water supplies affects land and water resources and public health and safety in the region. Fulfilling this objective would ensure that important resource information such as groundwater levels, aquifer characteristics, and stream flows collected under objective 1-1 is compiled, explained, disseminated, and readily available to the interested public, water managers, and other regional entities acting to protect regional water supplies. The NSV IRWM website is one readily available tool for disseminating resource information.

This objective will be measured both qualitatively and quantitatively. The first form of measurement will be counting the number of: 1) websites with regional water supply information; 2) reports made available to the public; and 3) presentations to various stakeholder groups. Qualitative measurement will include conducting annual surveys to evaluate the public's knowledge of regional water supplies and to identify gaps.

2.9.3 (6-3) Disseminate information on flood risks, Federal Emergency Management Agency's (FEMA's) flood insurance rate maps (FIRM), and new FEMA policies. (Foundational)

Understanding flood risks and policies is essential to land and water resources management and public health and safety in the region. Fulfilling this objective would ensure that basic information regarding related topics such as flood risks, FEMA's Flood Insurance Rate Maps, new FEMA policies, and DWR's legislatively mandated flood maps is compiled, disseminated, and readily available to the public, water managers, land-use planners, and other stakeholders in the region. The NSV IRWM website is one readily available tool for disseminating flood related information.

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This objective would be measured through quantitative assessment of staff in the region. Staff would be asked to assess whether flood risk, FEMA's FIRMs, and new FEMA policy information has been adequately distributed and if the overall understanding of flood risks, flood preparedness, and flood risk reduction planning and management has improved.

2.9.4 (6-4) Develop and disseminate water quality information throughout the region. (Foundational)

Water quality information is essential to land and water resources management and public health and safety in the region. This objective encourages the development and dissemination of water information collected under objective 1-1 about the quality of the region's groundwater basins and surface water bodies. The NSV IRWM website is one readily available tool for dissemination.

Measurement of this objective will be through assessing the: 1) adequacy of information available for the state's biannual 305(b) report; 2) adequacy of data for assessments in CA Water Quality Monitoring Council's My Water Quality portals; 3) ambient data uploaded to CEDEN; 4) regulated facilities' compliance records tracked in USEPA's ECHO program; and 5) whether wastewater dischargers are uploading effluent monitoring data to CIWQS. Simulation models could be used to increase the understanding of water quality cause/effect relationships.

2.9.5 (6-5) Develop and disseminate scientific information on aquatic, riparian, and watershed resources. (Foundational)

The aquatic, riparian, and watershed resources of the Northern Sacramento Valley region are of local, state-wide, national, and international importance to water supplies, water quality, fisheries, and wildlife. Having readily available information on these resources is vital for developing timely, efficient, and mutually beneficial management solutions and for avoiding conflicts among resource uses. Projects or programs that would contribute toward meeting this objective include, but are not limited to, those that collect, compile, develop, and disseminate scientific information on aquatic, riparian, and watershed resources for educating and informing the public, water managers, land-use planners, and other stakeholders in the region. The NSV IRWM website is one readily available tool for dissemination.

Measurement of this objective would be conducted by counting the number of projects and programs that include aquatic, riparian, or watershed public information elements per year and cumulatively since IRWMP adoption.

