Agenda: Planning Group Meeting #3

Friday, November 16, 9:30-12:00

Location: Monterey County Water Resources Agency
Saffron Meeting, 1441 Schilling Place, Salinas

Meeting Purpose

- Discuss and provide recommendations on management objectives and actions related to groundwater management planning
- Identify management conflicts and opportunities to address conflicts

Materials List

- Memo: Alignment with Sustainable Groundwater Planning
- Revised Stream Maintenance and Lagoon Management Objectives and Actions
- Memoe: Management Considerations
- Proposed Salinas River Stakeholders' Statement (developed by Tim Frahm)
- Engagement Plan

9:30	Welcome & Introductions
9:35	Agenda Review and Meeting Outline Facilitator Gina Bartlett, Consensus Building Institute
9:40	LTMP Development Update Elizabeth Krafft, MCWRA, and Kathryn Gaffney, ICF – Overall status update and timeline
9:50	LTMP Alignment with Sustainable Groundwater Planning Elizabeth Krafft, MCWRA, and Kathryn Gaffney, ICF – Discuss and recommend potential management objectives and actions
10:45	LTMP Management Considerations – Identify and understand potential management issues and challenges related to implementation and approaches to address those challenges
11:30	Salinas River Stakeholders' Statement Proposed by Tim Frahm, Trout Unlimited
11:40	Other Updates Gina Bartlett, Consensus Building Institute – Funding Strategy for Implementation (discuss at future meeting) – Engagement Plan: Public Workshop in early 2019

	– Website – Final Stakeholder Assessment posted on LTMP Web Page
11:45	Public Comment
11:55	Next Steps and Meeting

Upcoming Meeting Plan

TBD	Lagoon Management Working Group	Discuss Planning Group Feedback (from 9/14) on Management Objectives and Actions
Jan. 11 (9:30-12)	Planning Group	Discuss Refined Management Objectives and Actions Discuss Implementation Strategy
Late January	Public Workshop	Draft Long-Term Management Plan
Feb 2019		**Submit Long-Term Management Plan**

DRAFT Memorandum

To:	Salinas River Long-Term Management Plan Planning Group
From:	Consultant Team
CC:	Monterey County Water Resources Agency Salinas Valley Basin Groundwater Sustainability Agency Marina Coast Water District Groundwater Sustainability Agency Arroyo Seco Groundwater Sustainability Agency
Date:	November 7, 2018
Re:	**Salinas Valley Groundwater Sustainability Plans: Background and Context for Potential Salinas River Long-Term Management Plan Integration**

Monterey County Water Resources Agency (MCWRA) is leading development of a long-term management plan (LTMP) for the Salinas River. The LTMP will include a comprehensive set of management objectives and actions for the Salinas River system. It is the intent of MCWRA to consider in the LTMP all programs that have a role in how the Salinas River is currently and will be managed in the future, including Groundwater Sustainability Plans for each subbasin to be developed by 2020 or 2022. The purpose of this memorandum is to provide a brief overview of the Sustainable Groundwater Management Act, and provide information on how it applies to Salinas River management.

The summary information and potential management objectives and actions in this memorandum are compiled based on review of key documents (see references at end of memorandum) and a Working Group meeting held on October 2, 1018. The key purposes of the Working Group were to:

- Coordinate in development of the Long-Term Management Plan and Groundwater Sustainability Plans to maximize the benefit to both planning processes and advance resource management in the Salinas Valley;
- Brainstorm opportunities and value created via the two planning processes; and
- Identify and manage any potential overlaps, data coordination, etc.

The Working Group meeting was held on October 2, 2018, and was attended by the following.

- David Chardavoyne, MCWRA
- Howard Franklin, MCWRA

- Elizabeth Krafft, MCWRA
- Shaunna Murray, MCWRA
- Gary Peterson, General Manager, Salinas Valley Basin GSA
- Steve Macintyre, Board Member, Salinas Valley Basin GSA
- Robin Lee, Advisory Committee member, Salinas Valley Basin GSA
- Derek Williams, Errol Montgomery for Salinas Valley Basin GSA
- Chris Peters, Errol Montgomery for Salinas Valley Basin GSA
- John Gallinatti, Geosyntec for Salinas Valley Basin GSA
- Keith Van Der Maaten, General Manager, Marina Coast Water District GSA
- Curtis Weeks, General Manager, Arroyo Seco GSA
- Kathryn Gaffney, ICF, for LTMP
- Bethany Hackenjos, FlowWest, for LTMP
- Dana Lee, FishBIO, for LTMP
- Gordon Thrupp, Geosyntec, for LTMP
- Les Chau, Wood, for LTMP
- Bill Stevens, National Marine Fisheries Service
- Gina Bartlett, Facilitator for LTMP and Salinas Valley Basin GSA, CBI

Sustainable Groundwater Management Act Overview

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, collectively known as the Sustainable Groundwater Management Act (SGMA).[1] Under SGMA (pronounced "sigma"), California established a framework for achieving sustainable groundwater management. The purpose of the legislation is focused on brining groundwater basins into balanced levels of pumping and recharge to reverse aquifer depletion, while supporting and enhancing local management of groundwater basins. As such, SGMA requires local agencies to form Groundwater Sustainability Agencies (GSAs) to manage basins sustainably, and requires those GSAs to develop and adopt Groundwater Sustainability Plans (GSPs).

As defined by Bulletin 118 (Department of Water Resources 1980), "A basin is subject to critical overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts." Overdraft occurs where the average annual amount of groundwater extraction exceeds the long-term average annual supply of water to the basin. Effects of overdraft result can include seawater intrusion, land subsidence, groundwater depletion, and/or chronic lowering of groundwater levels. SGMA requires

[1] The three bills were AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley).

that all Bulletin 118 basins designated as medium- or high-priority that are subject to critical conditions of overdraft be managed under a GSP, or coordinated GSPs, by January 31, 2020. All other medium- and high-priority basins must be managed under a GSP, or coordinated GSPs, by January 31, 2022 (Department of Water Resources 2016a).

SGMA also included a requirement that the California Department of Water Resources (DWR) "publish on its internet Web site best management practices for the sustainable management of groundwater," by January 1, 2017. DWR met this requirement and published two categories of information: Best Management Practices (BMPs) and Guidance Documents. This requirement is further interpreted to mean that GSAs must consider and utilize these documents when developing GSPs. DWR defined five categories of BMPs (Department of Water Resources 2016b):

- BMP 1: Monitoring Protocols, Standards, and Sites;
- BMP 2: Monitoring Networks and Identification of Data Gaps;
- BMP 3: Hydrogeologic Conceptual Model;
- BMP 4: Water Budget; and
- BMP 5: Modeling.

Finally, SGMA authorizes the intervention of the State Water Resources Control Board in the event that a GSA is not formed for a high- or medium-priority basin, or that an inadequate GSP is submitted for those basins.

Groundwater Sustainability Agencies

GSAs are one or more local agencies that implement the requirements of SGMA. GSAs may be established in existing local agencies, or through newly formed Joint Power Authorities or Memorandums of Agreement or other legal instruments for the purpose of implementing SGMA. GSAs are required to consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing GSPs (e.g., landowners; Wat. Code, Div. 6, pt. 2.74, § 10723.2).

GSAs may "perform any act necessary or proper" to carry out SGMA's purposes. GSAs have the authority to undertake certain actions if the GSA adopts and submits to DWR a GSP, although they are not required to exercise all of these authorities (Wat. Code, Div. 6, pt. 2.74, ch. 5; Wat. Code, Div. 6, pt. 2.74, § 10730). These actions include the following:

- Adopt rules, regulations, ordinances, and resolutions (in compliance with existing procedural requirement);
- Conduct an investigation, including investigations of surface waters and surface water rights;
- Inspect the property or facilities of a person or entity to evaluate compliance with SGMA;
- Register groundwater extraction facilities (e.g., wells);
- Require measurement and annual reporting of groundwater extraction at extraction facilities;
- Require reporting of surface water diversions to underground storage;

- Acquire, hold property (e.g., land, water rights, structures), construct, and/or operate improvements;
- Appropriate and acquire surface or groundwater, or surface or groundwater rights;
- Establish or facilitate existing programs for voluntary land fallowing;
- Purchase, transfer, deliver, or exchange water or water rights;
- Manage and control polluted water, wastewater, or other waters;
- Impose spacing requirements on new groundwater well construction;
- Control groundwater extraction amounts; and
- Impose fees.

Groundwater Sustainability Plans

Under SGMA, GSPs must consider the interests of all beneficial uses and users of groundwater, including overlying property owners, municipal well owners, public water systems, local land use agencies, environmental users, surface water users, the federal government, Native American tribes in California, disadvantaged communities, and listed monitoring entities.

SGMA requires GSPs to include, among other things, all of the following (Wat. Code, Div. 6, pt. 2.74, § 10727.2):

- A description of the physical setting and characteristics of the aquifer system underlying the basin that includes the following:
    - Historical data, to the extent available.
    - Groundwater levels, groundwater quality, subsidence, and groundwater-surface water interaction.
    - A general discussion of historical and projected water demands and supplies.
    - A map that details the area of the basin and the boundaries of the groundwater sustainability agencies that overlie the basin that have or are developing GSPs.
    - A map identifying existing and potential recharge areas for the basin. The map or maps shall identify the existing recharge areas that substantially contribute to the replenishment of the groundwater basin. The map or maps shall be provided to the appropriate local planning agencies after adoption of the GSP.
- Measurable objectives, as well as interim milestones in increments of five years, to achieve the sustainability goal in the basin within 20 years of the implementation of the plan.
- A description of how the plan helps meet each objective and how each objective is intended to achieve the sustainability goal for the basin for long-term beneficial uses of groundwater.
- Components relating to the following, as applicable to the basin:
    - The monitoring and management of groundwater levels within the basin.

- The monitoring and management of groundwater quality, groundwater quality degradation, inelastic land surface subsidence, and changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin.
- Mitigation of overdraft.
- How recharge areas identified in the plan substantially contribute to the replenishment of the basin.
- A description of surface water supply used or available for use for groundwater recharge or in-lieu use.

SGMA defines six "undesirable results," which in turn establish six metrics by which sustainable management of groundwater is measured. These six metrics include:

1. lowering of groundwater levels,
2. reduction in groundwater storage,
3. seawater intrusion,
4. water quality degradation,
5. land subsidence, and
6. impacts on beneficial uses of interconnected surface waters.

Groundwater Sustainability Plan Emergency Regulations (GSP Regulations; Cal. Code Regs., tit. 23, sub. art. 3) were adopted in May 2016. These GSP Regulations require that GSPs define sustainable management criteria for each of the above metrics. Sustainable management criteria are composed of three parts:

- Undesirable results,
- Minimum thresholds, and
- Measurable objectives.

Definitions

The following terms are defined in SGMA (Wat. Code, Div. 6, pt. 2.74, § 10721, 10735).

"Condition of long-term overdraft" means the condition of a groundwater basin where the average annual amount of water extracted for a long-term period, generally 10 years or more, exceeds the long-term average annual supply of water to the basin, plus any temporary surplus. Overdraft during a period of drought is not sufficient to establish a condition of long-term overdraft if extractions and recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.

"Basin" means a groundwater basin or subbasin identified and defined in Bulletin 118 or as modified pursuant to Chapter 3 (commencing with Section 10722).

"Groundwater" means water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water that flows in known and definite channels.

"Groundwater recharge" or "recharge" means the augmentation of groundwater, by natural or artificial means.

"Groundwater sustainability agency" means one or more local agencies that implement the provisions of this part. For purposes of imposing fees pursuant to Chapter 8 (commencing with Section 10730) or taking action to enforce a groundwater sustainability plan, "groundwater sustainability agency" also means each local agency comprising the groundwater sustainability agency if the plan authorizes separate agency action.

"Groundwater sustainability plan" or "plan" means a plan of a groundwater sustainability agency proposed or adopted pursuant to this part.

"Recharge area" means the area that supplies water to an aquifer in a groundwater basin.

"Significant depletions of interconnected surface waters" means reductions in flow or levels of surface water that is hydrologically connected to the basin such that the reduced surface water flow or levels have a significant and unreasonable adverse impact on beneficial uses of the surface water.

"Sustainable groundwater management" means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.

"Sustainable yield" means the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result.

"Undesirable result" means one or more of the following effects caused by groundwater conditions occurring throughout the basin:

1) Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.

2) Significant and unreasonable reduction of groundwater storage.

3) Significant and unreasonable seawater intrusion.

4) Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.

5) Significant and unreasonable land subsidence that substantially interferes with surface land uses.

6) Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

"Water budget" means an accounting of the total groundwater and surface water entering and leaving a basin including the changes in the amount of water stored.

"Water year" means the period from October 1 through the following September 30, inclusive.

SGMA in the Salinas Valley

Since 1975, DWR Bulletin 118 has defined the groundwater basins in California (Department of Water Resources 1975, 2003). Groundwater basins are primarily identified on the basis of geological and hydrological conditions, but DWR does take into consideration political boundary lines whenever practical (Wat. Code, Div. 6, pt. 2.74, § 12924). The 2003 update of Bulletin 118 defined the Salinas Valley Basin as containing eight subbasins (Figure 1). The following provides a list of basins (Bulletin 118 name and code number), the current prioritization status (Department of Water Resources 2018[2]), and GSP deadline.

1. 180/400 Foot Aquifer (3-004.01; high-priority, critical overdraft; 2020 deadline for GSP)
2. East Side Aquifer (3-004.02; high-priority; 2022 deadline for GSP)
3. Forebay Aquifer (3-004.04; medium-priority; 2022 deadline for GSP)
4. Upper Valley Aquifer (3-004.05; medium-priority; 2022 deadline for GSP)
5. Paso Robles Area (3-004.06; high-priority; 2022 deadline for GSP)
6. Seaside Area (3-004.08; medium-priority; 2022 deadline for GSP)
7. Langley Area (3-004.09; medium-priority; 2022 deadline for GSP)
8. Monterey (3-004.10; high-priority; 2022 deadline for GSP; contains the Marina, Ord, and Corral de Tierra Areas)

All of these subbasins overlap at least partially with the LTMP study area.

Within the LTMP study area, four GSAs have formed: the Salinas Valley Basin GSA, the City of Marina GSA, the Marina Coast Water District (MCWD) GSA, and the Arroyo Seco GSA. Because DWR defines groundwater basins primarily on the basis of geological and hydrological conditions, and because SGMA grants authority to local agencies to establish GSPs within their jurisdictional boundaries, there is overlap throughout the state in the groundwater basins requiring management and the agencies with jurisdiction to conduct such management. The Salinas Valley Basin is no different. As such, the GSAs are working to coordinate their efforts, particularly in establishment of a common water budget that will inform the projects proposed by each plan. It is anticipated that a key

[2] Bulletin 118 defines groundwater basins in California. However, groundwater levels are measured under the California Statewide Groundwater Elevation Monitoring (CASGEM) Program. The subbasin boundaries used for CASGEM are similar, but not identical, to those defined in Bulletin 118.

component of all GSPs will be a list of proposed projects that will help address one or more of the metrics by which sustainable groundwater management is required to be measured.

Each Salinas Valley GSP is described briefly below.

Salinas Valley Basin GSP

In December 2016, a Joint Powers Agreement formed the Salinas Valley Basin GSA. The Salinas Valley Basin GSA has an 11-member board representing the beneficial users of groundwater in the basin, including county and cities, agriculture, private municipal water suppliers, small water systems, residential well owners, disadvantaged communities, and environmental uses. An Advisory Committee, was formed in 2017 to provide input and recommendations to the Salinas Valley Basin GSA on a range of topics. The consensus-seeking Advisory Committee is comprised of a broad range of interests within the Salinas Valley (Salinas Valley Basin Groundwater Sustainability Agency 2018).

The Salinas Valley Basin GSA anticipates developing an overarching Salinas Valley Basin GSP to address the management of the Salinas Valley Basin in its entirety. Subbasin-specific plans will be developed addressing each of seven subbasins (all Salinas Valley Basin subbasins excluding the Seaside subbasin). Of the seven subbasins, only the 180/400 Foot Aquifer subbasin has been identified as being in critical overdraft. This status triggers a requirement that the overarching Salinas Valley Basin GSP and the 180/400 Foot Aquifer subbasin GSP be submitted to DWR by January 1, 2020. Subbasin-specific plans for the remaining six subbasins are not due until January 1, 2022. DWR has 2 years to review each submitted GSP.

The first quantitative analysis proposed by the Salinas Valley Basin GSA is to develop a water budget for the Salinas Valley. The Salinas Valley Basin GSA plans to use the forthcoming Salinas Valley Integrated Hydrological Model that is being developed by the U.S. Bureau of Reclamation, the U.S. Geological Society, and MCWRA.

Marina Coast Water District GSP

The MCWD is the GSA for the MCWD GSP. MCWD's Central Marina and Ord Community water service areas overlie portions of the Monterey Subbasin, the 180/400 Foot Aquifer Subbasin, and part of the Seaside Adjudicated Basin. Three of the District wells are located in Central Marina and five wells are in the Ord Community.

The DWR granted MCWD exclusive GSA status within its jurisdictional boundaries within the Monterey subbasin and the 180/400 Foot Aquifer subbasin. Since MCWD has been determined to be an exclusive GSA in both subbasins, the MCWD GSA will be engaged in the development of GSPs for the entirety of these two subbasins, in coordination with other GSA's within these subbasins (Marina Coast Water District and MCWD Groundwater Sustainability Agency 2018).

The 180/400 Foot Aquifer subbasin GSP will be prepared by January 31, 2020 and the Monterey subbasin GSP will be prepared by January 31, 2022.

City of Marina GSP

The City of Marina is the GSA for the Marina GSP. The boundary of the City of Marina GSA overlies a small portion of the 180/400 Foot Aquifer Subbasin located within city limits but outside of the MCWD service area. The 180/400 Foot Aquifer subbasin GSP will be prepared by January 31, 2020.

Arroyo Seco GSP

The Arroyo Seco GSA was founded in 2017. The Arroyo Seco GSA's mission is to develop a comprehensive groundwater sustainability plan by 2022, and successfully implement the plan over SGMA's planning and implementation horizon of fifty years to demonstrate long-term groundwater basin sustainability. The Arroyo Seco GSA is governed by a five-member Board comprised of diverse interests from the Arroyo Seco region. The ASGSA Board is advised by a nine-member advisory committee comprised of individuals representing a cross section of varied social, environmental and economic interests in the Arroyo Seco region (City of Greenfield 2018).

The Arroyo Seco GSA addresses the area geographically bound by the City of Greenfield. The Arroyo Seco GSA is also seeking approval from DWR to include in its jurisdiction adjacent unincorporated lands that are the lower watershed of the Arroyo Seco. Both the city limits of Greenfield and the requested unincorporated areas overlaps with the Forebay Aquifer subbasin. Because the City of Greenfield has jurisdiction over a portion of the Forebay Aquifer subbasin, and that its interests are primarily tied to the lower Arroyo Seco (an area known as the Arroyo Seco cone), the City is seeking to develop a GSP specific to its jurisdiction and area of interest, the Arroyo Seco cone. The Arroyo Seco GSP, which is currently proposed as a stand-alone GSP from the Forebay Aquifer GSP, will be prepared by January 31, 2022.

MCWRA's Role in GSP Development and Implementation

MCWRA is a member of the Salinas Valley Basin GSP Advisory Committee and have entered into a Memorandum of Understanding with the Salinas Valley Basin GSA to provide technical support for development of the Salinas Valley Basin GSP.

In addition to its role as an Advisory Committee member, MCWRA is the designated Monitoring Entity for three high- and four medium-priority groundwater subbasins in the Salinas Valley Basin (all subbasins except the Seaside Area subbasin). Groundwater elevation data from the California Statewide Groundwater Elevation Monitoring Program (CASGEM) will be an integral part of monitoring under all three GSPs. In addition, MCWRA will monitor three low- or very-low priority groundwater subbasins in Monterey County at a later date: Cholame Valley, Lockwood Valley, and Peach Tree Valley groundwater basins. MCWRA developed a Monitoring Plan to meet the requirements of the CASGEM program. The Monitoring Plan details how participants will collect groundwater elevation data in those groundwater basins for which MCWRA is the designated Monitoring Entity. The monitored areas include 48 wells, some of which are owned by MCWRA and others that are privately owned but whose owners have volunteered the well for inclusion in the CASGEM program (Monterey County Water Resources Agency 2015a).

Finally, because of MCWRA's mission and existing authorities, it is anticipated that one or more projects proposed to help meet the goal of sustainably managed groundwater basins and subbasins, will be projects that either require MCWRA to be the lead agency or a partner.

Relationship between Salinas River and Groundwater Management

At the most basic level, the relationship between the Salinas River and the Salinas Valley groundwater basins is regulated by annual cycles of precipitation and runoff. Rain falling within the Salinas Valley watershed can enter and recharge underlying aquifers through direct rainfall on the land surface and subsequent infiltration/percolation, or through infiltration once the runoff reaches the Salinas River streambed. When groundwater levels in the aquifers are high enough, groundwater can help contribute to surface streamflow. Groundwater is lost from aquifers when it is pumped for municipal or agricultural uses, particularly during the summer irrigation season.

During years when rain is plentiful, natural runoff is sufficient to both recharge aquifers and help maintain surface flows in the Salinas River channel. During dry years, there is not always sufficient runoff to recharge aquifers and maintain stream flows. San Antonio and Nacimiento Reservoirs store runoff that can be used to both augment flows in the Salinas River and recharge the aquifers. How effective this management approach is at maintaining streamflow depends primarily on how these reservoirs are operated (timing and volume of releases) and the level of depletion in the aquifers (which varies with season and with pumping activity). The greater the depletion of the aquifers, the more flow will be required in the Salinas River to maintain surface flow connectivity to the Monterey Bay. If the reservoirs do not have sufficient storage and/or if the aquifers are depleted such that any surface flows readily percolate into the ground, then stream flows may not be maintained. As such, under existing conditions, the successful management of the Salinas River within the study area is dependent, in part, on how groundwater is managed. Figure 2 provides a conceptual model depicting these interactions.

While the general mechanics of surface and groundwater interaction are known, the details are not fully understood. For example, the level at which aquifers must be maintained in order to also maintain surface flow along the length of the Salinas River is not known. To address this uncertainty, MCWRA is working with the U.S. Geological Service to develop the Salinas Valley Integrated Hydrological Model. This model combines an existing surface water model with a groundwater model to attempt to model the interaction of surface and groundwater along the Salinas River. It is expected that this model will inform development of the GSPs.

Potential Management Objectives and Actions for the LTMP to Address GSP Integration

The following objectives and actions are based primarily on discussions held during the October 2, 2018 Working Group meeting.

Objectives are targets that will be sought to achieve a given goal. Objectives are typically quantitative or at least measurable. Objectives describe a specific desired outcome.

Actions are specific activities that will be carried out to meet the associated objectives. Actions describe how objectives can be achieved.

Objective. Use the GSPs as a mechanism for meeting at least some, if not all, water security needs for all Salinas Valley stakeholders, in a manner that is financially equitable across stakeholders.

Action. Projects developed under the GSPs should utilize information provided in the LTMP to inform and guide the goals and parameters of the project.

Action. Develop the GSPs based on best available data to be consistent and compatible with a future potential habitat conservation plan (HCP). Identify projects in the GSPs that could become covered activities under an HCP.

Objective. Achieve sustainable groundwater management as defined by SGMA in the Salinas Valley Basin.

Action. Model different scenarios for re-operating the river to evaluate how a more natural flow regime can be established, and the associated costs and benefits.

Action. Identify the required flows at key points in the system that, if met, will provide sufficient conservation flows for steelhead.

Action. Develop a portfolio of projects, where the purpose and need, complete cost (design through mitigation and operation), and benefits are clearly described such that one or more projects can be put on the ballot for voter approval as required by Proposition 218. Cost and benefit analysis must, at a minimum, be quantitative.

Action. Identify funding sources—in addition to voter-approved funding—for GSP projects that have multiple benefits including, but not limited to, Proposition 68 (approved in June 2018), the California State Revolving Fund, and California Department of Water Resources.

References

California Department of Water Resources. 1975. California's Ground Water, Bulletin No. 118. September.

California Department of Water Resources. 1980. Groundwater Basins in California, Bulletin 118-80. January.

California Department of Water Resources. 2003. California's Groundwater, Bulletin 118 – Update 2003. October 1.

California Department of Water Resources. 2016a. California's Groundwater: Working Toward Sustainability, Bulletin 118 – Interim Update 2016. December 22.

California Department of Water Resources. 2016b. BMP Framework. December.

California Department of Water Resources. 2018. SGMA Portal. Accessed: October 26, 2018.

City of Greenfield. Arroyo Seco Groundwater Sustainability Agency Website. 2018. Accessible: <http://ci.greenfield.ca.us/379/ASGSA>. Accessed: October 26, 2018.

Groundwater Sustainability Plan Emergency Regulations (GSP Regulations). 2016.

Marina Coast Water District and MCWD Groundwater Sustainability Agency. MCWD Groundwater Sustainability Agency Webpage. Accessible: <https://www.mcwd.org/gsa_about.html>. Accessed: October 26, 2018.

Salinas Valley Basin Groundwater Sustainability Agency. 2018. Website. Accessible: <https://svbgsa.org/about-us/>. Accessed: October 26, 2018.

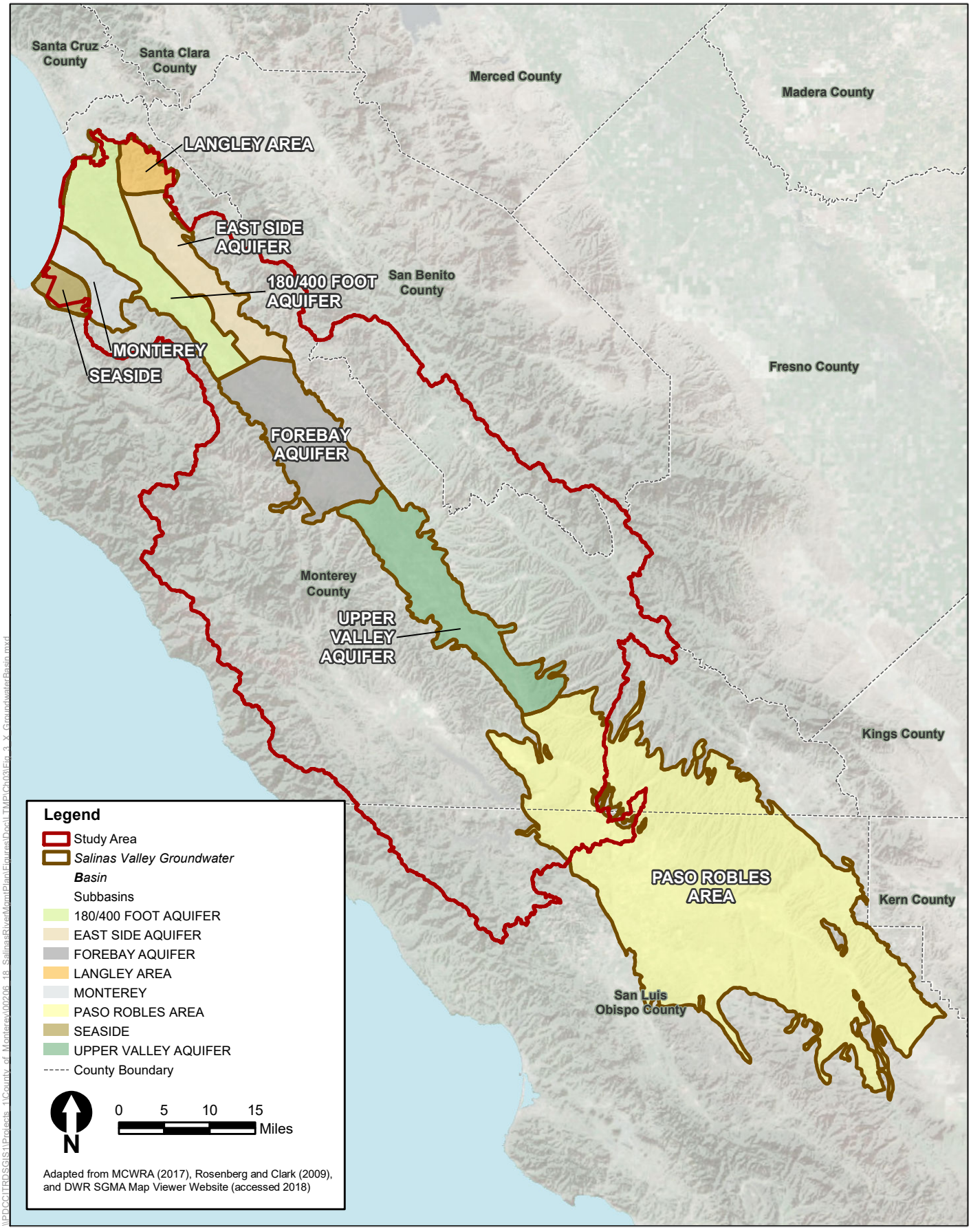
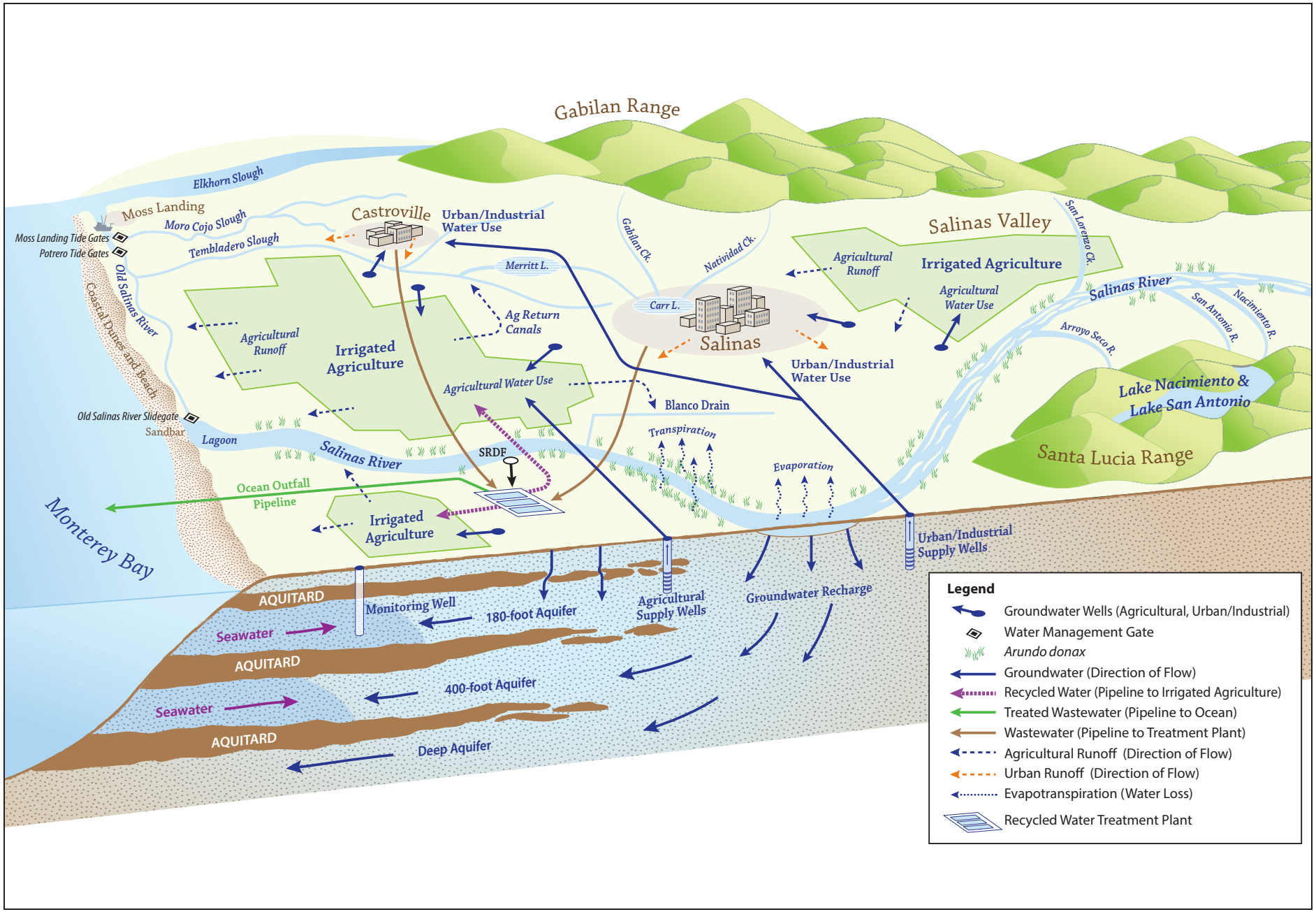


Figure 1
Salinas Valley Groundwater Basin
Salinas River Long-Term Management Plan



Graphics ... 00206.18 (10/29/18) AB

Figure 2
DRAFT Salinas Valley Water Management Conceptual Model
Salinas River Long-Term Management Plan

v2 DRAFT Management Objectives and Actions for the Salinas River Lagoon

Monterey County Water Resources Agency (MCWRA) is leading development of a long-term management plan (LTMP) for the Salinas River, including the lagoon that forms when a seasonal sandbar blocks the river from entering Monterey Bay. The LTMP will include management objectives and actions for the Salinas River system, including the management of flows, water quality, and the sandbar at the mouth of the lagoon. Below is a draft of management objectives and actions focused on the Salinas River lagoon. These proposed objectives and actions were initially drafted (v1) based on on-going or incomplete management measures in the Salinas River Lagoon Management and Enhancement Plan (Salinas River Lagoon MEP) and a Working Group meeting held on August 3, 2018. The measures were subsequently revised to the current version (v2) based on feedback from the Salinas River LTMP Planning Group on September 14, 2018.

These management objectives and actions are intended to be considered together with objectives and actions identified for other resource categories such as listed species and stream management.

Potential Management Objectives and Actions for the LTMP to Address Lagoon Management Needs

Objectives are targets that will be sought to achieve a given goal. Objectives are typically quantitative or at least measurable. Objectives describe a specific desired outcome.

Actions are specific activities that will be carried out to meet the associated objectives. Actions describe how objectives can be achieved. A single action can support multiple objectives.

Objective LAG-1. Develop a feasible and implementable (i.e., can be permitted by regulatory agencies) floodwater management program that reduces flooding while allowing MCWRA to meet all of its jurisdictional and regulatory obligations. Include an assessment of inflows to the OSR from both the lagoon and Tembladero Slough, areas most vulnerable to flooding when the OSR is at capacity, and inter-annual variability in lagoon conditions.

Action LAG-1. Engage property owners to make necessary permitted improvements. (Source: Salinas River Lagoon MEP, Measure 25.)

Action LAG-2. Conduct an assessment of different lagoon management elevations drawing from available data sources that considers the implications for natural resources and surrounding agriculture. Based on the assessment, establish a lagoon elevation management approach.

Action LAG-3. Evaluate the condition of current infrastructure, including if it is in good operating condition and if the infrastructure is providing the service for which is was designed. Consider infrastructure adjustments that could help better manage water levels and salinity in

the lagoon and OSR and allow fish passage. (Source: Partially adapted from Salinas River Lagoon MEP, Measure 26.)

Action LAG-4. Explore the viability of new engineered solutions for flood management (e.g., levees, deeper/wider OSR). Include an assessment of existing infrastructure that are affected by flooding (e.g., Twin Bridges).

Action LAG-5. Consider the establishment of a lagoon management committee. (Source: Salinas River Lagoon MEP, adapted from Measure 27.)

Action LAG-6. Develop a sandbar management approach that provides clear guidelines and triggers for implementing a breech that is considerate of steelhead and plover lifecycle needs (e.g., timing breeches to have the least adverse effects on listed species).

Action LAG-7. Investigate the potential for establishing flood easements (payment to landowners in exchange for the ability to flood lands under certain conditions) or land exchanges on targeted agricultural lands. Assess the implications of flooding agricultural lands including issues related to food safety requirements. Also evaluate the financial costs and benefits of flooding targeted agricultural lands in the context of the landowner/grower and the larger Salinas Valley basin.

Action LAG-8. Investigate the potential for flow attenuation through reservoir management (including construction and operation of the Interlake Tunnel) and retaining floodflows upstream of the lagoon.

Action LAG-9. Evaluate the effects of downstream flooding related to impermeable surface run-off, including plastic tarps used for agricultural purposes. Consider relative contribution of different runoff sources and the associated effects of higher peak flows and velocities. Identify approaches to ameliorate the effects of increased surface runoff.

Action LAG-10. Conduct a study of lagoon and OSR bathymetry and changes to the bathymetry over the period of the study to better understand how the sediment levels of the lagoon and OSR shift over time and identify if there are opportunities to increase the capacity of the lagoon and OSR. Assess how much capacity could be gained from dredging (deepening) or widening the OSR.

Objective LAG-2. Maintain flows and habitat conditions, taking into consideration the timing of steelhead migration, in the Salinas River sufficient to maintain connectivity for steelhead between the lagoon and areas in the upper watershed suitable for spawning.

Action LAG-12. Minimize short duration breaches by using OSR Channel when dredged. (Source: Salinas River Lagoon MEP, Measure 4.)

Action LAG-30. Review the monitoring program currently being implemented by MCWRA, consider if changes are needed. Adapt, if needed, the current monitoring plan to include an assessment of how water quality in the lagoon changes over the course of a breeching event (before, during, and after). Continue monitoring water quality in the lagoon base on the most current monitoring plan.

Action LAG-14. Develop a reservoir flow release prescription that defines when and under what conditions in-stream flows will be established and maintained for steelhead.

Action LAG-6. Develop a sandbar management approach that provides clear guideline and triggers for implementing a breech that is considerate of listed species habitat needs.

Action LAG-16. Assess existing data to better understand the correlation between upstream flows on the Salinas and in-channel flows capable of supporting steelhead migration.

Action LAG-17. Evaluate alternative steelhead migration corridors, including through the OSR, when the sandbar is closed.

Action LAG-3. Evaluate the condition of current infrastructure, including if it is in good operating condition and if the infrastructure is providing the service for which is was designed. Consider infrastructure adjustments that could help better manage water levels and salinity in the lagoon and OSR and allow fish passage. (Source: Partially adapted from Salinas River Lagoon MEP, Measure 26.)

Objective LAG-3. Manage the lagoon to provide suitable habitat for tidewater goby and rearing steelhead.

Action LAG-18. Establish baseline salinity levels in the OSR to operate double weir and enhance freshwater fisheries habitat in the lagoon. (Source: Salinas River Lagoon MEP, Measure 19.)

Action LAG-19. Establish marsh plain and backwater refugia habitat for steelhead and tidewater goby that provide foraging habitat for juvenile steelhead and freshwater refugia habitat for tidewater goby.

Objective LAG-4. Work with private and public landowners to protect and manage snowy plover habitat. (Source: Salinas River Lagoon MEP, Measure 17.)

Action LAG-20. Evaluate the need to manage red fox populations to reduce predation of snowy plover. (Source: adapted from Salinas River Lagoon MEP, Measure 16.)

Action LAG-21. Develop a sandbar management approach that provides clear guideline and triggers for implementing a breech that is considerate of steelhead and plover.

Objective LAG-5. Improve aquatic and upland habitat in and surrounding the lagoon.

Action LAG-22. Enhance riparian habitat around the lagoon, including by the Highway 1 bridge. (Source: Salinas River Lagoon MEP, Measures 5 and 6 combined.)

Action LAG-23. Enhance fore dunes and dune scrub to improve ecosystem function.

Action LAG-24. Monitor the Monterey slender-flowered gilia population on public property (source: Salinas River Lagoon MEP, Measure 9) and identify habitat enhancement needs.

Action LAG-25. Develop a public use and access plan on public properties, including measures to avoid and minimize potential effects on sensitive habitats and wildlife. (Source: Salinas River Lagoon MEP, adapted from Measure 13 and 24.)

Action LAG-26. Evaluate the potential to reintroduce native freshwater species, enhance Sacramento blackfish/perch community. (Source: Salinas River Lagoon MEP, Measure 20.)

Action LAG-27. Conduct a study to better understand the relationship between retention of sand in the reservoirs and replenishment of the sand dunes at the mouth of the Salinas River. Based on the results of the study, consider adaptive management approaches to reduce the adverse effects of reduced sediment in the Salinas River system.

Action LAG-28. Develop an invasive species management plan that addresses, at a minimum, invasive plants including *Arundo donax*. May require an initial assessment of the current status of invasive species in and around the lagoon.

Objective LAG-6. Assess current water quality issues in the lagoon and identify approaches to reduce pollutant sources.

Action LAG-29. Encourage participation in the Water Quality Protection Program by the Monterey Bay National Marine Sanctuary**.** (Source: Salinas River Lagoon MEP, Measure 23.)

Action LAG-30. Review the monitoring program currently implemented by MCWRA and consider if changes are needed. Adapt, if needed, the current monitoring plan to include an assessment of how water quality in the lagoon changes over the course of a breeching event (before, during, and after). In the interim, continue monitoring water quality in the lagoon based on the most current monitoring plan.

Action LAG-31. Based on the results of MCWRA water quality monitoring, identify best management practices that could help better manage pollutants in the lagoon.

Objective LAG-7. Manage USFWS National Wildlife Refuge to support sensitive habitats and wildlife.

Action LAG-32. Implement habitat enhancement on a portion of the USFWS refuge. (Source: Salinas River Lagoon MEP, Measure 10)

Action LAG-33. Reduce and control hunting activity within sensitive areas on USFWS property. (Source: Salinas River Lagoon MEP, Measure 11)

Action LAG-34. Maintain the quality of Smith's Blue Butterfly habitat on public property. (Source: Salinas River Lagoon MEP, Measure 12)

Action LAG-35. Control public recreational use to avoid impacting wildlife. (Source: Salinas River Lagoon MEP, Measure 13)

Action LAG-36. Manage the pond on the USFWS refuge to maintain wildlife values (Source: Salinas River Lagoon MEP, Measure 14)

Action LAG-20. Evaluate the need to manage red fox populations to reduce predation of snowy plover. (Source: adapted from Salinas River Lagoon MEP, Measure 16.)

v3 DRAFT Management Objectives and Actions for Salinas River Stream Maintenance

Monterey County Water Resources Agency (MCWRA) is leading development of a long-term management plan (LTMP) for the Salinas River. The LTMP will include a comprehensive set of management objectives and actions for the Salinas River system, including the management of vegetation and channel stability.

Below is a draft of management objectives and actions focused on the Salinas River lagoon. These proposed objectives and actions were initially drafted (v1) based on the discussion at a Working Group meeting held on August 22, 2018. These draft measures were informed by SMP documentation, MCWRA input, and review by the Salinas River Management Unit Association and the Resource Conservation District of Monterey County (RCDMC). A revised version (v2) was provided for Salinas River LTMP Planning Group review during a meeting on September 14, 2018. The measure were subsequently revised to the current version (v3) based on feedback from the Planning Group.

These management objectives and actions are intended to be considered together with objectives and actions identified for other resource categories such as listed species and lagoon management.

Potential Management Objectives and Actions for the LTMP to Address Stream Maintenance Needs

Objectives are targets that will be sought to achieve a given goal. Objectives are typically quantitative or at least measurable. Objectives describe a specific desired outcome.

Actions are specific activities that will be carried out to meet the associated objectives. Actions describe how objectives can be achieved.

Objective SMP-1. Establish an equitable funding mechanism for implementing stream maintenance activities that allocates cost of maintenance and associated mitigation across all beneficiaries.

> **Action SMP-1.** Collaborate with the Salinas Valley Basin Sustainable Groundwater Agency (GSA) in development of the Salinas Valley Basin Groundwater Sustainability Plan (GSP) to ensure stream maintenance needs are incorporated in the GSP Measurable Objectives.

Objective SMP-2. Establish a geographic framework for the LTMP within which all river management planning and implementation will be considered, including—but not limited to—groundwater management, stream maintenance, conservation actions.

> **Action SMP-2.** Expand the geographic extent of the SMP RMU designations to provide a planning framework for the entire management area that. RMU designations will reflect the

different management and/or conservation considerations of given reaches throughout the Salinas River watershed.

Objective SMP-3. Develop a practical and implementable (i.e., able to be permitted by the regulatory agencies) vegetation management program for the entire Salinas River main stem and select tributaries within the LTMP management area.

Action SMP-3. Work with the regulatory agencies to confirm information required to develop a vegetation management program that meets regulatory requirements. Once confirmed, identify funding opportunities to develop identified information.

Action SMP-4. Conduct a site visit with members of each regulatory agency, discussing the key vegetation management needs, identifying differences between each RMU, and how the river is a dynamic system, with changing vegetation characteristics reflecting the amount of water in the basin (either as a result of reservoir operation or by water year type).

Action SMP-5. Collaborate with organizations and agencies conducting vegetation management throughout the Salinas River watershed (including in San Luis Obispo County) on a cohesive approach to vegetation management, focused on invasive plant management.

Action SMP-6. Compile and organize information on vegetation management into a program document. Include an analysis of how the vegetation management program will affect regulated natural resources and water quality.

Action SMP-7. Develop a mitigation strategy that minimizes the short-term adverse impacts of a management action and takes into account the long-term benefits of those actions on regulated resources, ecological processes, and flood risk reduction.

Action SMP-8. Conduct research to inform what is the "natural" state of the Salinas River, particularly after removal of extensive stands of invasive vegetation, including how sandbars shift during high flows. Use the results of the research to inform adaptive management under the vegetation management program.

Action SMP-9. Conduct outreach to landowners along the Salinas River mainstem and select tributaries to educate them on the benefits of the vegetation management program and increase participation.

Action SMP-13. Consider development of a suite of best management practices that would help avoid and minimize impacts on sensitive resources, and in some cases, provide guidance on appropriate mitigation (e.g., establishment of vegetated buffers agricultural fields and the river).

Action SMP-14. Continue the current option of coordinated mitigation led by one or more agencies on behalf of multiple landowners.

Objective SMP-4. Develop a floodwater management program focused on reducing erosion and flooding.

Action SMP-10. Investigate the potential for flow attenuation by retaining floodflows upstream of the Lagoon during storm events greater than a 5-year return interval. Investigation should consider establishment or enhancement of on- or off-channel groundwater percolation zones for

percolation of floodwater into the groundwater basin, and the reintroduction of floodplains. For off-channel sites, investigation should also consider the potential adverse effects of retaining surface flows, such as introduction of weed seed to new sites, degradation or loss of topsoil, restrictions on producing food crops following flooding, and changing the chemistry of flooded soils.

Action SMP-11. Include guidance on managing debris, both natural (e.g., fallen trees) and man-made (e.g., shopping carts, telephone poles, tires), to enhance in-channel habitat conditions and improve flow capacity.

Action SMP-12. Develop a suite of voluntary bioengineered bank stabilization designs and accompanying guidance on the appropriate use of each design that considers site conditions and constraints. Guidance will include information if hydraulic analysis is necessary for each design. Designs will be applicable to a range of conditions encountered within the management area.

Objective SMP-5. Protect and restore sensitive habitats.

DRAFT Memorandum

To:	Salinas River Long-Term Management Plan Planning Group
From:	Consultant Team
CC:	Monterey County Water Resources Agency
Date:	November 9, 2018
Re:	**Salinas River Long-Term Management Plan Management Considerations**

Monterey County Water Resources Agency (MCWRA) is leading development of a long-term management plan (LTMP) for the Salinas River. The LTMP will include a comprehensive set of management objectives and actions for the Salinas River system. These management objectives and actions will be informed by key management considerations.

The purpose of this memorandum is to provide a summary of these key management considerations. The management considerations presented in this memorandum were compiled based on various meetings convened in support of LTMP development. In particular, this memorandum draws from discussions held at two Planning Group Meetings (held August 2[1] and September 14), three Working Group meetings (held August 3, August 22, and October 2), and one public meeting (held June 20).This memorandum will be presented and discussed at the November 16 Planning Group meeting. Finally, this memorandum—including feedback received on November 16—will be incorporated into Chapter 4 of the LTMP.

Management Considerations

There is No One Agency or Landowner to Implement the LTMP

- The land use authorities of the Salinas Valley include cities, the County, state and federal agencies. The Salinas River channel and floodplain is owned by hundreds of private parties.
- No single entity currently has the authority to implement all the different types of management activities identified in the LTMP.

[1] All meeting dates in this paragraph are 2018.

- Under the forthcoming Groundwater Sustainability Plans (GSP), the associated Groundwater Sustainability Agencies (GSA) will have broad authority and flexibility in approach to ensure the Salinas Valley Basin achieves sustainable groundwater management.
- There is interest in establishing a non-profit or other impartial agency to lead implementation of the LMTP.

What Does this Mean for the LTMP?

- There are three options for LTMP implementation: an existing agency is identified to lead and oversee implementation; a new entity is created; or the LTMP is implemented by multiple entities, none of which has an overarching authority to oversee LTMP implementation.

Many People Expect MCWRA to do More Than It Can or Has the Authority to Do

- The Monterey County Water Resources Agency Act (Agency Act) establishes MCWRA as a flood control and water agency, and defines the authorities of MCWRA. These authorities include, but are not limited to, the following as necessary and proper to carry out the Agency Act.
    - Establishment of zones within which it may institute projects with specific benefits for the zone.
    - Acquire, use, exchange, transport, or sell property of every kind, including water.
    - Construct, repair, remove, or otherwise improve any work as authorized by the Agency Act.
    - Prevent degradation of water quality.
    - Control flood and storm waters.
    - Incur indebtedness and issue bonds.
    - Levy taxes or assessments.
- While MCWRA has broad authority under the Agency Act, it has not historically utilized all of its authorities.
- MCWRA is a special district, not a County department, and must develop all of its own funding. MCWRA does not receive funding from the County's General Fund.
- MCWRA only has authority over the benefit zones. Funding is tied strictly to the benefit zones.

What Does this Mean for the LTMP?

- MCWRA has the authority to do more, but exercising these authorities requires the support of the community and funding. For example, while MCWRA does implement sandbar breaching, sandbar management is not specifically described as an activity in a benefit zone and therefore is funded by limited discretionary funds.

Money is Limited, Unpredictable, and Often Obligated

- While MCWRA has broad authority in management of water resources within the county, its funding tools are outdated. Property assessment revenue, MCWRA's principal source of income,

is dedicated to the repayment of costs of specific projects or services that confer special benefits to the assessed properties (a "Zone of Benefit"). This revenue source is not general-purpose revenue available for discretionary purposes. MCWRA's property assessments are subject to Proposition 218[2]. Property assessments can be used to pay for discretionary projects or services (or the subcomponents of these projects), but are a limited portions of the annual budget.

- Proposition 218 has sharply restricted the discretionary use of assessment revenue by MCWRA and has made it harder to accommodate unanticipated project costs. This is especially relevant to MCWRA in relation projects that are implemented over multiple years incur significant and unanticipated environmental monitoring and compliance costs beyond the costs covered by the original assessments.
- A number of grant programs exist to support design and implementation of environmental enhancement activities. However, funding through these programs is typically limited to actions that do not, in whole or in part, serve as mitigation. These programs are also typically competitive, and unlikely to be available over the long term.
- Several new funding mechanisms are currently becoming available that could be used to fund bigger infrastructure projects, particularly those with components benefiting the environment (including Proposition 68, passed in June 2018).
- Implementation of the GSPs is also expected to provide a program through which many actions directly or indirectly proposed by this LTMP can be implemented. Funding of these projects is anticipated to require a Proposition 218 vote.
- The Salinas Valley, often called "the Salad Bowl of the World," supports a $9 billion agricultural industry. Growers have indicated their willingness to vote in favor of a package of actions to support improved water resource management, so long as the package contains a clear connection to the benefits for the greater community.

What Does this Mean for the LTMP?

- New funding sources must be secured for LTMP implementation. These sources must be reliable enough to implement the LTMP over the long term.

Water Management Facilities are Outdated, Inflexible, and Undersized

- MCWRA owns and manages many facilities to help move water through the management area. Key facilities include the Nacimiento and San Antonio dams, the Salinas River Diversion Facility, the Old Salinas River (OSR) slidegate, and various facilities in the Reclamation Ditch system. Many of these facilities were not designed to address current or potential management needs.
- The OSR slidegate was designed to release up to 120 cubic feet per second (cfs), but it would cause downstream flooding at that rate. This reduces the ability of MCWRA to manage lagoon levels, particularly when inflows to the lagoon are high.

[2] Passed by California voters in 1996. Proposition 218 amended the California Constitution to require that all new or increased property assessments (as well as taxes and fees) follow prescribed assessment calculation and election requirements.

- The capacity of the tide gates are too small to reliably provide sufficient flooding relief. Even during a relatively modest storm even (e.g., 2-year storm), flooding can occur if tides are high and stormwater has nowhere to go. Conversely, it is critical that the tide gates continue to prevent seawater from moving into agricultural areas on a daily basis, or allowing a tidal surge during storm events that could exacerbate flooding.
- Debris (e.g., dead trees, trash) in the system can affect the successful operation of the tide gates. At times, the trash racks are overcome and trash plugs the culverts.
- Overall, there are relatively few canals or pipelines in the study area with which to move surface water around. As such, the Salinas River acts as the primary "trunk line" for the entire system.

What Does this Mean for the LTMP?

- If we want to meet many of the goals of the LTMP, the facilities should be re-evaluated and, in some cases, retrofitted or rebuilt.
- Work on these facilities will require regulatory permits. These efforts can be time consuming and costly, making assured funding sources an important component of this consideration.

The Financial Burdens and Benefits of Managing the River are not Equitably Shared

- The costs of projects and programs are typically born by the agency or individual responsible for implementing the action, even if the action benefits a larger community.
- This is particularly true for the private landowners that are members of the River Management Unit Association and participants in the Salinas River Stream Maintenance Program. The costs of implementing stream maintenance actions includes not only conducting the work, but also reporting on the work conducted and, for some activities, funding mitigation projects. These private individuals are not only preventing flooding and erosion on their own lands and adjacent lands, but they are creating channel capacity to accommodate floodwaters. They are also creating a smoother path for water to move downstream, and reducing the abundance of water-consuming *Arundo donax* (Arundo). These actions have significant benefits for flood management and groundwater recharge throughout the watershed, yet the cost of implementing these actions fall on a limited group of individuals and agencies.
- New permits or permitting programs are needed (e.g., long term Biological Opinions for reservoir operation and sandbar breaching), but the cost of establishing new programs (separate from the cost of implementing programs), is time-consuming and costly.
- Long-term cost of program implementation—mitigation, monitoring, and reporting—can be hard to accurately define during project planning and therefore implementation costs often fall short of funding available.

What Does this Mean for the LTMP?

- The LTMP should identify mechanisms for equitable cost distribution that aligns the cost of projects across those that benefit from the work.

Flooding Affects the Livelihoods of the Community

- Flooding from extreme floods (such as those experienced in 1995 and 1997), as well as from smaller 5- and 10-year storms, requires the community to rethink how it approaches stormwater management.
- The type of flooding addressed by the Salinas River LTMP is flooding associated with riverine flooding (a high elevation of water within a watercourse) or inland flows of ocean water (associated with storm surges and/or high tides). Landowners also experience flooding associated with poor drainage associated with a specific site. This type of flooding requires site-specific retrofits to improve drainage and reduce pooling or ponding of water in relatively discrete locations.
- The location of flooding is highly variable, and is driven by where precipitation falls, tides, available capacity of local watercourses, and quantity of debris moving through the system.
- When agricultural lands are flooded, it can destroy or degrade crops such that they cannot be sold, wash away topsoil, and/or change the chemical composition of the soil. Food safety regulations prohibit replanting for a period of 60 days or more for certain crop types.
- During large storm events, flooding can also inundate homes and threaten infrastructure including roads and bridges, which affects the livelihood and transportation needs of the community.
- During times of drought, vegetation dies back and is washed down the river creating flood hazards (e.g., tree trunks or large branches catch on bridges and back up the channel).
- Backwater flooding (upstream flooding that occurs as a result of downstream conditions) is typically less damaging to adjacent lands due to slower velocities.
- The region should consider redesigning flow pathways so that it can begin making progress in reducing flooding and improving water quality. Options include:
    - Evaluating the known and likely future flood zones (water pathways) and use this information to inform where flood management project can be installed; and
    - Working with landowners to repurpose lands in flood zones that are not currently in use/ production, or are not profitable, to create flexible flood space.
- A Storm Water Resource Plan (SWRP) for the Greater Monterey County Integrated Regional Water Management (IRWM) Region is under development, with an expected completion date in June 2019. As required by regulations, the SWRP will include approaches for diverting runoff from existing storm drains, channels, or conveyance structures to sites (particularly publicly owned sites) that can clean, store, infiltrate and/or use the runoff. This SWRP will identify specific projects to address flooding.
- When planning for the future, it is important to acknowledge future weather projections, which anticipate prolonged periods of drought and increased intensities of storms. Projections also indicate that average mean sea level is increasing; together with increased intensity of storms, this may result in flooding beyond that caused by precipitation alone.

What Does this Mean for the LTMP?

- Addressing flooding is one of the primary goals of the LTMP. As such, it is important that we understand all of the issues surrounding flooding, as well as existing programs that are also designed to address flooding. The LTMP should be developed to address these landowner concerns and identify opportunities to be consistent with other planning efforts.

Wildlife need Good, Connected Habitat at the Right Times

Connecting the Ocean and the River

- Steelhead are anadromous fish (having a lifecycle that begins in fresh-water streams, transitioning to the ocean).
- Steelhead entering the Salinas River from Monterey Bay can use one of two routes: direct access from the ocean to the Salinas River if the sandbar at the mouth of the river is open; or through the Potrero Road tide gates, the OSR, and finally the OSR slidegate. The mouth of the Salinas River is often separated from the sea by a sandbar, which requires flows high enough to naturally breach the sandbar, or manual efforts to open. Natural breaches generally mean the neighboring agricultural lands are flooded. Neither the Potrero Road tide gates nor the OSR slidegate were designed to support fish passage, although fish passage is possible under certain conditions.
- The slidegate is not ideal for lagoon habitat management because it allows the fresh, oxygenated surface water to exit the lagoon, which slows or stops the conversion of the lagoon from a salinity stratified system with poor bottom water quality to a more uniformly freshwater system. Allowing more freshwater to remain in the lagoon could slowly convert the lagoon to a freshwater system, maximizing habitat quantity and quality for rearing steelhead.
- The timing of sandbar breach affects successful migration into the river. If the sandbar is not breached until later in the winter or spring season, this can delay adult steelhead migration which begins at the end of December and continues through April. Similarly, if the sandbar closes early in the spring, the number of out migrating juveniles that reach the ocean will be limited. In dry years, river flow events may not be large enough to trigger sandbar breaching (natural or artificial), leaving the sandbar in place for a year or more. This most recently occurred when the sandbar was closed between January 2013 to January 2017.
- Sandbar management during the late spring or early summer may affect the breeding season for tidewater goby. In addition, tidewater goby overwintering survival is highly dependent on a large population going into the fall and winter; because large flood events often sweep most individuals out to the ocean, a large population increases the potential for some individuals to survive winter events. These survivors comprise the initial breeding population the following summer.
- The implications for sea level rise and how it might affect sandbar breaching needs should be considered.

Connecting the Lagoon to Headwaters

- Once in the Salinas River, steelhead must also be able to migrate to headwater streams which typically support the best spawning habitat (gravel substrate, well-oxygenated flows, cold water, and cover).
- Steelhead generally migrate inland December–March annually and out-migrate February–April. As such, they need surface flow connectivity during the winter months in order to travel between the ocean and headwaters.
- Under current reservoir operations, water is released primarily in the summer when irrigation water demand is the highest. At times, MCWRA must release up to 800 cfs at the dams to achieve 2 cfs at the Salinas River Diversion Facility. Flows are lost to evaporation, in-channel vegetation, percolation, and diversions.
- The Upper Valley basin reaches are generally losing reaches (water readily percolates into the groundwater basin). As such, winter flows that recharge the groundwater basin are typically sufficient to sustain summertime pumping and irrigation. However, the lower watershed basins require summer stream flow to provide irrigation water through pumping and river diversions.
- The Arroyo Seco, the Salinas River tributary thought to provide the best accessible spawning habitat for steelhead, drains into the Forebay subbasin in an area of high permeability. Depending on the groundwater levels in this area (known as the Arroyo Seco cone), even high flows up to 20,000 cfs may not establish surface flow connectivity to the main stem of the Salinas River.
- Projected changes in weather (increased intensity of storms resulting in higher peak flows, and more frequent and prolonged periods of drought) should be considered in long term planning for water availability for steelhead.
- Areas along the Salinas River are believed to have once supported wooded riparian areas thousands of feet wide, and in some places as much as a mile wide (San Francisco Estuary Institute 2009). While some riparian remains, there may be opportunities for restoration.
- Arundo is one of the worst plant invaders of California's riparian and wetland communities. As of 2011, the Salinas River supported 23% of known Arundo stands in all of coastal California. Thick stands of Arundo are impenetrable for many wildlife species and prevent movement across the Salinas River corridor.

What Does this Mean for the LTMP?

- Managing for steelhead on the Salinas River will require an assessment of the intersection between reservoir releases, groundwater levels, and potential in-channel barriers (e.g., invasive vegetation).
- Establishing programs for listed species will require collaboration with regulatory agencies that have authority over these species. National Marine Fisheries Service regulates activities that affect listed anadromous fish, including steelhead. U.S. Fish and Wildlife Service regulates activities that affect terrestrial species, including plover, and freshwater fish including tidewater goby.

The Lagoon Sandbar must be Actively Managed to Achieve Other Goals

- Water levels in the Salinas River Lagoon are managed by MCWRA to limit flooding of adjacent agricultural lands and homes. When the sandbar is in place, lagoon elevation is managed between 3.0 and 3.5 feet above sea level; flooding of adjacent lands begins when elevation reaches approximately 5.5 feet.
- The slidegate connecting the Salinas River Lagoon to the OSR channel is the primary mechanism for lagoon water level management. The slidegate cannot always sufficiently manage lagoon levels either because the gate is too small to pass the quantity of flow entering the lagoon from the Salinas River, or because the OSR channel is already at capacity due to flows in other systems that drain to the OSR.
- When the lagoon elevation reaches 5 feet and inflows to the lagoon are predicted to increase (as a result of a storm event), MCWRA begins preparation to release lagoon water through a lowering of the sandbar that often persists at the mouth of the Salinas. Sandbar management involves grading or excavating a drainage channel across the sandbar to drain the lagoon. During preparations for sandbar breaching, lagoon elevation can reach 7 or 8 feet.
- The timing and location of an artificial sandbar breach must also consider the western snowy plover nesting season. Plovers nest on the beach near the mouth of the Salinas River between March 1 and September 30. If artificial sandbar breaching occurs during this time, the presence of people and construction equipment may cause plovers to either not nest or abandon their nests, or it may result in destruction of nests if they are washed away as the breach occurs. If a breach does not occur, then high lagoon elevations can flood plover's nest and habitat areas.
- During dry years, water quality in the lagoon is poor during dry years when the sandbar is closed and freshwater inflows are low or absent.
- Warm temperatures and stagnant water fosters "blooms" of rooted and floating vegetation that is exacerbated by nutrient inputs from agricultural and urban sources. Chemical toxins can concentrate in the system. Prior to 2010, freshwater inflows from the upper watershed were typically low or non-existent in the summer and fall. Since 2010 and the operation of the Salinas River Diversion Facility, freshwater inflows to the lagoon are a requirement of the Salinas Valley Water Project permits.

What Does this Mean for the LTMP?

- Future management of the lagoon and sandbar will need to balance habitat needs (e.g., migrating fish), flood control options and infrastructure, and community concerns related to flooding and salinity intrusion.

Flood Flows and Reservoir Releases: Where does the Water Go?

The Salinas Valley Supports Above AND Below-Ground Reservoirs

- Most people are aware of the surface water storage facilities on the Salinas River: Nacimiento and San Antonio Reservoirs, the Salinas River Diversion Facility, and Santa Margarita Reservoir (created by Salinas Dam) in San Luis Obispo County. Most are not aware that the Salinas Valley

groundwater basins provide vastly larger water storage capabilities; an estimated 16.4 million acre-feet of storage as compared to 0.7 million acre-feet in Nacimiento and San Antonio Reservoirs combined.

- The Salinas Valley groundwater basins are critical reservoirs for seasonal water storage. They recharge in the wet season when high river flows are available, and are pumped during the dry season when the agricultural water supply demand is greatest. The groundwater reservoirs also provide critical storage over multiple-year climatic cycles; drawn down in dry periods and replenished during wet periods.
- While we know geologically where the "good" substrate is for surface water percolation, we do not have a good understanding of which stream reaches are gaining (flow is enhanced by groundwater) and losing (flow is decreased by percolation into the ground), or how those reaches operate under different conditions.
- Groundwater basin recharge is not consistent along the Salinas River. The Upper Valley basin provides excellent substrate for percolation and readily accepts surface flows. The lower valley basins (the East Side Aquifer and 180/400 Foot Aquifer) support less percolation and are more inclined to flooding.
- Once the water goes underground, it is much harder to track. Until recently, there has been no State-level requirement to report water extracted through groundwater pumping.

River Flows are Highly Variable

- There are only four gauges on main stem of the Salinas River. Of the Salinas's undammed tributaries in the study area, only the Arroyo Seco and San Lorenzo are gauged.
- Flows released from reservoirs are ramped up and down to avoid causing erosion when ramped up and to avoid stranding fish when ramping down. In between, releases are relatively constant.
- Surface runoff varies depending on the amount of precipitation falling at a given time, as well as recent precipitation patterns. Early in the season, runoff may initially soak into the dry ground instead of running off through the channel. Once soil becomes saturated, the amount of runoff increases.

Water is not Where we Need it When we Need it

- Managing water supply along the Salinas River is challenging due differences in when water is naturally present (during the winter) and when it is generally needed for irrigation (during the dry season).
- Some believe that water that reaches the ocean is "wasted." This includes a considerable amount of stormwater runoff, which could be captured if we implemented projects designed to do so.

What Does this Mean for the LTMP?

- Understanding how water moves throughout the study area (above and belowground) is critical to meet the goals of the LTMP and GSPs. Development of the Salinas Valley Integrated Hydrologic Model will support this need.

Regulations are Expected to Drive Management for Improved Water Quality

- Groundwater quality is a concern. The Seaside, 180/400 Foot Aquifer, and Eastside subbasins are affected by seawater intrusion; the 180/400 Foot Aquifer and Eastside subbasins are affected by elevated nitrate and organic compounds from agricultural runoff, and the Upper Valley subbasin is affected by large dissolved solids (sulfate). The GSPs are required to address groundwater pollution.
- The Central Coast Regional Water Quality Control Board (Regional Board) is in the process of developing the region's next Agricultural Waiver, with a targeted adoption date of March 2020. Based on an analyses of surface water and groundwater data and trends in water quality status, Regional Board staff have concluded that, overall, water quality objectives are not being achieved and beneficial uses are not being protected in many agricultural areas of the Central Coast, primarily due to the impacts from agricultural discharges (Central Coast Regional Water Quality Control Board 2018 [Staff Report]).

What Does this Mean for the LTMP?

- Separate from the LTMP, both the development of GSPs and the future renewal of the Agricultural Waiver (Ag Waiver 4.0) will drive actions to improve ground and surface water quality. Projects implemented in support of the LTMP may be subject to these new requirements.

We Don't Know what "Natural" Means… and It's Probably No Longer Possible or Desirable

- Many people have expressed a desire for the river to operate more naturally.
- Historical accounts indicate "the river corridor consisted of a sandy active channel with little vegetation, bordered in many places by extensive stands of riparian thicket and forest. Above the riparian corridor, multiple terraces (i.e., abandoned floodplains) of different elevation and extent corresponded to different inundation frequencies and had different plant communities" (San Francisco Estuary Institute 2009).
- The primary drivers for a river's physical structure are its hydrology and its sediment supply. Prior to the construction of major reservoirs and diversion, the Salinas River experienced a dynamic system where seasonal high flows regularly scoured the sandy bars and channel bottom, transporting sediment and creating a wide and largely bare channel bed. Today, the operations of the Nacimiento and the San Antonio reservoirs have reduced peak flows, increased summer flows, and reduced the amount of sediment moving through the system. This has led to, among other things, establishment of vegetation on sand bars and the channel bottom.

What Does this Mean for the LTMP?

- Returning to this "natural" state of the 1700 and 1800s is no longer possible due to conversion of riparian corridors to agricultural fields and population growth that has driven a need to manage the river for flood control. However, a "naturalized" management approach, particularly

regarding reservoir releases, could help reestablish some of the historical Salinas River characteristics while still meeting flood control needs.

There is Support for Recreation throughout the Salinas River Watershed

- LTMP stakeholders have expressed a desire to maintain access for recreation on public lands, including the Salinas River Lagoon.
- Nacimiento and San Antonio Reservoirs provide recreation opportunities such as boating and camping.

What Does this Mean for the LTMP?

- Projects implemented in support of the LTMP should consider potential impacts on recreation.

Salinas River Stakeholders' Statement

10/19/18

Note: Tim Frahm drafted this for Planning Group consideration.

We, the Salinas River Long Term Management Stakeholder Planning Group (Planning Group), believe that the Salinas River (and the waters of the Salinas River Watershed) are the lifeblood of the Salinas Valley.

We believe that the Salinas River (and the waters of the Salinas River Watershed) can be managed to provide multiple benefits to the vested stakeholders including flood risk reduction, water supply (domestic and agricultural), non-impaired water quality, and natural resource conservation (including recovery of threatened and endangered species and compliance with federal and state Endangered Species Acts).

It is the consensus of this Planning Group that the Salinas River and the waters of the Salinas River Watershed currently do not meet the multiple benefits sought by the many stakeholders that rely on the river.

We agree to provide support for a Long-Term Management Plan, which develops and implements management strategies that provide these multiple benefits, and which establishes a sustainable balance between competing needs, as needed.

The Salinas River Stakeholders Planning Group is composed of diverse individuals and organizational representatives including state and federal regulatory staff, landowners, land managers, agriculture representatives, water resource planners, advocacy staff, biological resource specialists, and other interested parties.

Salinas River Long-Term Management Plan

Communication & Engagement Plan

Revised October 2018
Developed by the Consensus Building Institute

Activities Overview

	LTMP Development Summer-Fall 2018	**Technical Memos** Fall 2018	**LTMP Submittal** Early 2019
Interested Persons List	X	X	X
Website	X	X	X
Informational Materials	X	X	X
Public Workshop/Webinar	X		X
Planning Group Meetings	X	X	
Working Group Meetings	X	X	
Briefings (by Request)	X	X	
Regular Email Updates	X	X	X
Spanish-Translated Materials	X		X

Purpose and Outcomes

The purpose of this communication and engagement plan is to deepen understanding, support active engagement, and solicit input for developing the Salinas River Long-Term Management Plan (LTMP), with the goal of maintaining transparency and supporting a consistent, unified voice across the Salinas River Valley landscape.

The Monterey County Water Resources Agency (MCWRA) is the primary local agency managing and protecting water along the Salinas River while minimizing flood risk. MCWRA received funding from the California Coastal Conservancy to develop the Salinas River LTMP to help guide more comprehensive solutions to water management along the Salinas River. The LTMP will describe a multi-beneficial management program that addresses needs related to the MCWRA facilities and operations, as well as related issues such as flood risk reduction, water supply, water quality, natural resource conservation, threatened and endangered species management, and federal and state Endangered Species Act compliance.

Active engagement with agencies and the public is instrumental to the success of this effort. This communication and engagement plan outlines the various tools and approaches necessary for inclusive yet focused engagement. The MCWRA is also coordinating with other related planning and management efforts, including the Stream Maintenance Program and Salinas Valley groundwater sustainability plans.

How to Inform and Engage the Public

Participants in the LTMP process are committed to sharing information and soliciting input at key milestones during development of the LTMP. Information will be provided clearly and objectively. The public should be able to understand the primary goals of the LTMP and how local and regional efforts are connected to the LTMP. The primary opportunities for public involvement are through the LTMP website, the LTMP email list, planning group meetings, briefings, and outreach materials' distribution.

Input and Decision-Making

The purpose of this stakeholder engagement process is to develop a LTMP with widespread support. MCWRA will be the ultimate decision maker on plan content given that the plan must be complete by January 2019 (possible extension to end of February 2019). However, MCWRA is committed to working with the public, interested parties, and stakeholders through information sharing, workshops, and meetings to reach agreement (as much as possible) on the plan.

Planning Group

MCWRA has convened a planning group, composed of representatives from interested parties, to develop consensus recommendations on LTMP components. Planning group meetings are open to the public and will include a public comment period at each meeting. Meetings are expected to occur approximately monthly as of August 2018; meetings may switch to every other month depending on LTMP progress, in which case the project team may provide progress updates in between meetings.

Planning Milestones

Outreach will be anchored around LTMP development milestones.

1. **LTMP Development** – Summer/Fall 2018
2. **Submit LTMP** – January 2019 (possible extension to February 2019)

Key Messaging

Consistent and clear messaging is crucial for participants in the LTMP process to convey the purpose of the LTMP with a unified voice that resonates with interested parties and the public. Mutually agreed upon messaging includes:

- **Shared Vision.** The Salinas River is the lifeblood of the Valley. The LTMP can help stakeholders establish a shared vision of a sustainable future for the Salinas River and the Salinas River Valley.
- **Comprehensive Solution.** The LTMP is an important opportunity to develop a more comprehensive solution to management challenges in the Salinas River and lagoon.
- **Suite of Options for the Future.** The LTMP can serve as a stepping stone to future management actions by offering a broad set of considerations and strategies aligned with the LTMP vision. For instance, MCWRA needs a habitat conservation plan to comply with the federal Endangered Species Act, and MCWRA has time to develop a thoughtful conservation strategy for species that meets regulatory needs while also working for landowners / growers.
- **Funding Opportunities.** A comprehensive approach to management planning will make the LTMP competitive for federal and state grants to support implementation.

Communication Tools

Interested Persons Email List

The facilitator will send one to two email updates per month to the interested persons list, particularly leading up to each planning group meeting and public workshop / webinar and a summary afterwards. Interested parties can sign up on the LTMP website, and planning group and working group participants can contribute names to add to the list. Whenever individuals inquire about the process or attend a meeting, the project team adds them to the list. The list is broad and includes anyone who would like to stay informed about LTMP activities and anyone who the planning group or working group thinks should be informed about the LTMP development.

Website – SalinasRiverManagementProgram.org

The project website is an information repository for the stream maintenance program generally, including the LTMP and HCP development process. Background information, science, data and other materials, project information, and a schedule of meeting dates and meeting materials are all available on the site, as is a sign-up form for the LTMP interested parties email list. The website will support transparency by serving as a comprehensive, central source of information related to the LTMP and a record of the planning group's process and progress.

Informational Materials

Informational materials are critical for successful education and the circulation of consistent, accurate information. The planning group, working groups, and LTMP staff and consultants team will develop a range of materials and capitalize on LTMP-related materials when available. All materials will be posted to the project website.

Background Materials

- LTMP Development Process
- LTMP Purpose and Goals
- LTMP Factsheets (updated at key LTMP development milestones)
- Salinas River Map
- List of Data Sources
- Habitat Conservation Plan Process

Additional materials will be developed as needed.

Regular Email Updates, Website Updates, Meeting Announcements

Sent monthly to full email list and in advance of each meeting for planning group members.

Key Outcomes and Meeting Summary

The facilitator will develop a concise meeting summary following each planning group meeting. Each summary will begin with a brief description of key meeting outcomes, which participants can share with their organizations and interested parties. The summary will be posted to the website and sent to the interested parties list.

Outreach to Spanish Speaking Community

The technical consultant could translate key outreach materials to serve the large Spanish-speaking population in the area.

Strategic Organization Briefings

Planning group members and other staff may also conduct briefings at organizations strategically or upon request to expand its reach to other interest groups or to inform a broad section of the community that might not otherwise attend a LTMP meeting. Some options:

- League of Women Voters – hold a briefing luncheon in Salinas
- Chambers of Commerce – Salinas Valley, South County/King City, Latino Chamber
- Rotary Clubs – including the Salinas Rotary Club
- Greater Monterey County Integrated Regional Water Management Plan

Key Stakeholder Categories

- Agriculture Community and Landowners along the river, its tributaries, and lagoon
- Environmental – focus on birds, fish or aquatic species, habitat & plants
- Regulatory Agencies
- Scientific Community
- Stream Maintenance & Lagoon Experts
- Water Operations and Groundwater Management