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.)