PROPOSITION 1 WATER STORAGE INVESTMENT PROGRAM
DRAFT CONTRACT FOR ADMINISTRATION OF PUBLIC ECOSYSTEM BENEFITS
HARVEST WATER PROGRAM

This Contract for Administration of Public Ecosystem Benefits (Contract) is made and entered into by and between the California Department of Fish and Wildlife (Department) and the Sacramento Regional County Sanitation District (Regional San) (together, the Parties) for the Harvest Water Program (Program).

RECITALS

A. In November 2014, California voters approved Proposition 1, the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Wat. Code, §§ 79700-79798) to provide funding for more reliable water supplies, the restoration of important species and habitat, and a more resilient and sustainably managed water infrastructure.

B. Chapter 8 of Proposition 1 (Wat. Code, §§ 79750-79760) dedicated $2.7 billion for investments in water storage projects that improve the operation of the state water system, are cost effective, and provide a net improvement in ecosystem and water quality conditions. The California Water Commission (CWC) administers the Water Storage Investment Program (WSIP) to fund the public benefits associated with these projects. Through a rigorous selection process, the CWC made seven maximum conditional eligibility determinations (MCEDs), one for each WSIP project. The MCED represents the maximum amount of state funding a WSIP project was eligible for at the time of determination, based on the CWC's estimate of public benefits to be provided by each WSIP project. Public Benefits provided by WSIP projects may include flood control, ecosystem benefits, water quality improvements, emergency response, and recreation. At least 50% of the public benefits provided by WSIP projects must be ecosystem benefits.

C. Each WSIP project must enter into a contract with each public agency that administers the public benefits, after that agency makes a finding that the public benefits of the project for which that agency is responsible meet the relevant requirements of Water Code section 79750 *et seq.*

D. The CWC is the funding grantor of WSIP projects. The CWC awards final funding after a project completes all requirements for allocation of funds enumerated in Water Code section 79755.

E. As trustee agency for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species. (Fish & G. Code, §§ 711.7, 1802.) Pursuant to its statutory duties, the Department is responsible for making a finding that the Public Ecosystem Benefits of the project meet all the requirements of Water Code section 79750 *et seq.* and for entering into a contract with each project proponent to administer the Public Ecosystem Benefits. (Wat. Code, § 79755; Cal. Code Regs., tit. 23, § 6013, subd. (c)(2).)

F. Regional San is a county sanitation district pursuant to and operating under the County Sanitation District Act, commencing at Health and Safety Code Section 4700, *et. seq.*, which provides regional wastewater conveyance and treatment service. Regional San

owns and operates a regional wastewater conveyance system and wastewater treatment plant in Sacramento County.

G. The Harvest Water Program (Program), is a conjunctive use project to store and manage groundwater while improving stream flow, enhancing groundwater-dependent ecosystems, sustaining agricultural lands, and improving regional water supply reliability. Regional San would provide the water source for the Program of up to 50,000 acre-feet per year (AFY) of Title 22 tertiary-treated recycled water. Water produced from the Program would be used to irrigate approximately 16,000 acres of agricultural lands in Sacramento County near the lower Cosumnes River and Stone Lakes National Wildlife Refuge. The Program water deliveries for irrigation of agricultural and habitat lands serves as an in-lieu groundwater recharge source. Recycled water use, in-lieu of groundwater pumping, will increase groundwater elevations in the Program area, which in turn are anticipated to increase flows in the Cosumnes River and support groundwater-dependent wetland and riparian habitats.

H. The Parties recognize that the purpose of the Program is to provide both public and non-public benefits. (Wat. Code § 79753(a); Cal. Code Regs., tit. 23, § 6001 subd. (a)(53)). The Parties acknowledge that delivery of both public and non-public benefits to the fullest extent possible is necessary to maintain the Program's economic viability and delivery of either public or non-public benefits is not intended to be obtained by prioritizing one benefit over the other. This Contract only covers the public ecosystem benefits. Regional San controls operation of the Program.

I. The CWC deemed the Program feasible as required by Water Code section 79755 subdivision (a)(5)(B) on October 20, 2021.

J. Pursuant to Water Code section 79755, subdivision (a)(3), the Department finds the following Public Ecosystem Benefits meet all of the requirements of Water Code section 79750 *et seq.*:

1. Sandhill Crane Habitat
2. Cosumnes River Flow
3. Passive Wetland/Riparian Habitat
4. Active Wetland Habitat
5. Active Riparian Habitat
6. Vernal Pool Complex

K. The purpose of this Contract is to ensure that public contribution of funds pursuant to Chapter 8 of Proposition 1 for the Program achieves the Public Ecosystem Benefits identified for the Program and described herein (Wat. Code, § 79755.) Regional San's obligation with respect to providing the specified Public Ecosystem Benefits will be achieved by Regional San implementing the agreed upon Project Implementation Actions and Benefit Implementation Actions as described in this Contract and carrying out adaptive management as described in Exhibit B, incorporated by reference as though set forth in full herein.

SECTION 1 ABBREVIATIONS AND DEFINITIONS

Unless the context otherwise requires, the terms defined in this section shall for all purposes of this contract have the meanings hereinafter specified:

A. **Adaptive Management** – shall have the same meaning as Water Code section 85052.
B. **Adaptive Management Plan (AMP)** – means the plan attached to this Contract as Exhibit B and which contains the elements required by California Code of Regulations, title 23, section 6014, subdivision (a)(2).
C. **Adaptive Management Trigger (trigger)** – shall have the same meaning as California Code of Regulations, title 23, section 6001, subdivision (a)(84).
D. **Annual Summary Report** – annually required report prepared by Regional San which documents the progress and status of each Public Ecosystem Benefit, as described in Section 4.3.
E. **Benefit Environmental Response** – The ecosystem response derived from Project Implementation Actions and Benefit Implementation Actions.
F. **Benefit Implementation Actions** – Defined as actions, identified in this Contract, that influence the quantity and/or quality of a Benefit Environmental Response.
G. **Best Available Science** – shall have the same meaning as California Code of Regulations, title 23, section 6001, subdivision (a)(9).
H. **Contract (CAPB)** – Contract for Administration of Public Ecosystem Benefits
I. **Currently managed land –** Pertaining to the Program's active wetland benefit, these are lands that, at the time of initial enrollment into the Program's active wetland benefit, are both 1.) protected through ownership by Stone Lakes National Wildlife Refuge, Cosumnes River Preserve, or equivalent, or via a conservation easement, and 2.) are receiving management to enhance wetland functionality.
J. **Currently unmanaged land** – Pertaining to the Program's active wetland benefit, these are lands that, at the time of initial enrollment into the Program's active wetland benefit, lack one or both of the characteristics required to be considered currently managed land (see currently managed land).
K. **CWC –** California Water Commission
L. **Decision-Making Body** – the group of individuals from the Department and Regional San designated by the Parties to coordinate on implementation of the Adaptive Management Plan for the Public Ecosystem Benefits.
M. **Department** – California Department of Fish and Wildlife
N. **Feasible** – shall have the same meaning as California Public Resources Code section 21061.1, with the exception of the use in Recital I, above.
O. **Funding Agreement** – California Water Commission Funding Agreement
P. **Future Baseline** – after Program implementation, a modeled, without-Program condition that would be compared to the concurrent, real-world, with-Program condition.
Q. **Groundwater Benefit Area** – the area calculated by the Sacramento Area Integrated Water Resources Model (SacIWRM) model considering water delivery Scenario 2, 2030 climate change scenario, and Program years 43 to 84, whereby groundwater elevations are projected to be within 10 feet below ground surface 80 percent of the time averaging all months under with-Program conditions.
R. **Limiting factor** – a factor which prevents the Program from achieving conditions above Adaptive Management Triggers.
S. **Meet and Confer Process** – the process by which the Decision-Making Body collaboratively identifies limiting factors and recommends adaptive management actions under Section 1.5 of the Adaptive Management Plan.
T. **Modified CRAM** – the application of the California Rapid Assessment Method (CRAM) modified to focus on aquatic area, hydrologic connectivity, Biotic Structure, and Physical Structure metrics.
U. **Passive Riparian and Wetland Habitat** – groundwater dependent wetland and riparian habitat located within the Program Groundwater Benefit Area supported by increased

groundwater levels to within at least 10 feet below ground surface as a result of Program operations.

V. **Performance threshold** – the full extent of Project Implementation Actions and Benefit Implementation Actions and the quantity of Benefit Environmental Response anticipated to be achieved by implementation of with-project actions (Project Implementation Actions and Benefit Implementation Actions) compared to without-project actions (future baseline) or pre-project conditions (pre-project baseline), based on best available science at the time of contract execution.

W. **Pre-Project Baseline** – a measurement taken prior to any Program-related actions that would directly impact the measurement.

X. **Program** – Harvest Water Program

Y. **Program Area** – the area comprising the both the Program's Water Delivery Area and Groundwater Benefit Area.

Z. **Program Year** – refers to a full year of Program operations capable of delivering water. For example, "Program Year 10" refers to ten years after the Program becomes operational and capable of delivering water.

AA. **Project Implementation Actions** – Defined as foundational actions the Program must execute for derivation of Public Ecosystem Benefits.

BB. **Public Benefit Dispute Process** – means the procedure by which the Department and Regional San seek to resolve any disagreement about the outcome of the Meet and Confer Process under Section 5 of this Contract.

CC. **Public Ecosystem Benefit** – shall have the same meaning as California Code of Regulations, title 23, section 6001, subdivision (a)(63) and Water Code section 79753(a). For the purposes of the Adaptive Management Plan, the Public Ecosystem Benefit(s) shall be comprised of Project Implementation Actions, Benefit Implementation Actions, and Benefit Environmental Responses identified in the Contract for the project.

DD. **Regional San** – Sacramento Regional County Sanitation District

EE. **Review Report** – Adaptive Management Plan Review Report

FF. **Riparian** – areas through which surface and subsurface hydrology interconnect aquatic areas and/or connect them with their adjacent uplands. They are distinguished by gradients in biophysical conditions, ecological processes, and biota.

GG. **State** – State of California

HH. **Vernal Pool Complex** – a set of naturally occurring pools in close proximity. Intervening non-pool terrain within vernal pool complex is commonly referred to as upland and often includes wetland or partially wetland swales that can connect pools within the complex.

II. **Water Delivery Area** – the area in which the Harvest Water Program can directly deliver water.

JJ. **Wetlands** – an area is a wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

KK. **WSIP** – Water Storage Investment Program

SECTION 2 ROLES AND RESPONSIBILITIES

2.1 DEPARTMENT

The Department has authority to administer the Public Ecosystem Benefits under the WSIP. The Department is exercising that authority by executing a Contract with each WSIP project to

provide the Public Ecosystem Benefits identified in the Contract. The Public Ecosystem Benefits will be provided through each project's performance of its Project Implementation Actions and Benefit Implementation Actions to achieve the Benefit Environmental Response in return for the public contribution of funds pursuant to Water Code section 79755. The Department will i) provide ongoing technical expertise and guidance toward the administration, implementation, and management of the Program's Public Ecosystem Benefits, ii) participate in ecosystem benefit metric tracking, evaluation, and accounting, and iii) inform the CWC of Public Ecosystem Benefits provided, any adaptive management actions triggered, any benefit changes, or other information deemed appropriate.

2.2 REGIONAL SAN

Regional San has oversight authority of the Program and is responsible for implementation of Project Implementation Actions and Benefit Implementation Actions anticipated to result in the Benefit Environmental Response described in this Contract, including monitoring for the public ecosystem benefits, and reporting to the Department and the CWC pursuant to California Code of Regulations, title 23, section 6014, subdivisions (a)(2)(A)(3) and (a)(2)(A)(4), respectively. Regional San may delegate elements of Program reporting or execution of the adaptive management plan. However, any delegation does not relieve Regional San of its responsibility to ensure that the terms and conditions identified in the Contract are met.

SECTION 3 TERM

This Contract shall become effective upon the execution of a Funding Agreement between the CWC and Regional San. The Contract shall terminate upon [TBD] unless otherwise terminated or amended as provided in the Contract.

SECTION 4 PUBLIC ECOSYSTEM BENEFITS

4.1 DESCRIPTION OF PUBLIC ECOSYSTEM BENEFITS

Pursuant to California Code of Regulations, title 23, section 6012 subdivision (g), the Department has confirmed the following benefits meet the requirements of Water Code section 79750 *et seq*.: Sandhill Crane Habitat, Cosumnes River Flow, Passive Wetland/Riparian Habitat, Active Wetland Habitat, Active Riparian Habitat, and Vernal Pool Complex.

4.1.1 Sandhill Crane

The Program will achieve a five-year average enrollment of 3,500 acres of habitat for wintering Sandhill cranes within the Program Area, maintaining a minimum of 2,500 acres enrolled each year, starting Program Year 10 and continued for the term of this Contract. Sandhill crane habitat lands will be enrolled into the Program through water delivery and land management agreements between Regional San and designated contractors and landowner. Starting Program Year 5, the Program will deliver an annual average of 8,750 acre-feet of wintertime recycled water delivery for Sandhill crane habitat. Enrolled roosting and foraging crane habitat created and maintained by the Program will aim to support an average of 700 additional Sandhill cranes within the Program Area.

To be eligible for inclusion in the Sandhill crane benefit, a location will satisfy the following criteria:

1. The habitat is within the Recycled Water Delivery Area.
2. The habitat does not contain permanent development or permanent crops (such as

vineyards, plant nurseries, turf farms, blueberry fields, and orchards).
3. The habitat does not occur on pre-existing habitat already formally managed for Sandhill crane (i.e., lands within Stone Lakes NWR and Cosumnes River Preserve).
4. Lands are enrolled through water delivery/land management agreements with landowners to create and or enhance crane habitat.
5. Acres are maintained either as roosting habitat, or foraging habitat located within three miles of a documented Sandhill crane roosting site.
6. The acreage is not enrolled by the Program into another benefit category (i.e., vernal complex, wetland, or riparian habitat).

For an area to be considered part of the Sandhill crane benefit, the Program must implement the following actions:

1. Delivery of recycled water for forage and/or roosting crane habitat within the Sandhill crane season of September through March. Specifically, the Program can deliver a portion of its annual average irrigation delivery volume, 32,500 acre-feet, in September and October and will deliver the entirety of the annual average wintertime delivery volume 8,750 acre-feet (or more, up to 17,500 acre-feet) November through March. Water delivery is subject to the State Water Resources Control Board (State Water Board), Division of Water Rights Order approving Regional San's Wastewater Change Petition WW0092 and/or local hydrologic conditions, including serial storms and flooding. Field flooding and/or soil saturation will be done to maintain water levels sufficient to provide either roosting or foraging habitat and adjusted as needed depending on habitat type and precipitation within the Program Water Delivery Area. The timing of water deliveries will be coordinated with field rotation and field flooding to optimize the number of wetted fields between early September through mid-March and potentially later if cranes are still present and Program logistics are amenable. Water delivery for crane habitat will be done consistent with the criteria below:
    a. Roosting Habitat: Water depths will be maintained to an average depth of approximately 4-6 inches on bermed fields not dominated by tall emergent vegetation, to create roosting habitat starting mid-September. Water depths on designated roosting habitat acres will be maintained for a minimum of 30 consecutive days and ideally for the duration of the Sandhill crane wintering period (September through March). Individual roost sites supported by the Program will be no less than 12 acres in size.
    b. Foraging Habitat: Short-term flooding and/or saturation of field soils will be conducted September through March to induce invertebrates to the surface for crane forage.

2. The Program will work with landowners to establish voluntary land management agreements to create and or enhance additional crane habitat. Agreements will include commitments to maintain crane habitat and refrain from agricultural practices that would inhibit crane use during the wintering Sandhill crane season (September – March). These agreements will specify habitat management criteria for foraging and roosting habitat types (e.g., water depth requirements, timing of water application, identification of

compatible land use and crop types, etc.). The master agreement templates (Exhibit C) have been approved by CDFW, identifying components necessary for each habitat type. Specified habitat management criteria will be defined in these agreements for foraging and roosting habitat type. These criteria may include, but are not limited to, water depth requirements and timing and duration of irrigation for soil saturation or field flooding for crane habitat. Executed land management agreements will be provided to CDFW with the Annual Report for the year in which it was executed.

4.1.2 Cosumnes River Flow

The Program's in-lieu groundwater recharge activities will improve groundwater levels adjacent to the Cosumnes River and will reduce water losses from the stream to the aquifer and/or increase water gains from the aquifer to the stream. At the time of contract execution, Program groundwater modeling estimates an average annual streamflow improvement of around 13,000 acre-feet resulting in an average of 31 additional days of flows at or above 20 cubic-feet per second (cfs) as modeled at Twin Cities Bridge, starting Program Year 20 and maintained throughout the term of this Contract, when compared to without-Program conditions[1]. The model estimates that about 11 of these additional days will occur, on average, within the October to December migration window for adult salmonids. These flows will begin accruing in the first few years of Program operations and will be achieved approximately 20 years after Program implementation, as demonstrated through higher streamflows and groundwater elevations simulated at Twin Cities Bridge and at a shallow aquifer monitoring well located near the Cosumnes River and within the Program Area, respectively.

4.1.3 Passive Wetland and Riparian Habitat

The Program will increase existing wetland and / or riparian habitat function by ten percent on a total of 2,633 acres supported by providing groundwater level improvements to levels within 10 feet below ground surface (bgs) or higher (shallower). At the time of contract execution, integrated groundwater and surface water modeling of the Program estimates these 2,633 acres of wetland and riparian habitat will receive passive groundwater benefit at approximately Program Year 15. The ten percent improvement to both currently managed and unmanaged habitats will be demonstrated through use of the modified California Rapid Assessment Method (CRAM).

4.1.4 Active Wetlands Habitat

The Program will use active management strategies to create, restore, or enhance a total of 1,300 acres of wetlands within the Program Area achieving a functionality improvement of ten percent on currently managed lands and fifty percent on currently unmanaged lands as demonstrated though use of the modified CRAM. The Program will achieve this through direct water delivery and/or increase groundwater elevation levels to 10 feet bgs or higher (shallower), in addition to performing land management activities such as native species plantings, weed control, and protection from herbivory. The Program will enroll and manage the full 1,300 protected acres by the end of Program Year 10 with functionality improvements anticipated by

[1] Water delivery Scenario 2, 2030 climate change, years 43-84

Program Year 15

To be eligible for inclusion in the active wetlands benefit, a location must satisfy the following criteria:

1. The wetland acreage must be within the Program Area.
2. For existing wetland acres located within the Groundwater Benefit Area, acres must be enhanced by land management activities.
3. For wetland acres located within the Water Delivery Area, water must be applied as needed for the Term of the Contract or until groundwater elevations reach at least 10 feet bgs and receive land management activities.
4. Acres must not be enrolled simultaneously by the Program into another benefit category (i.e., vernal complex, passive wetland/ riparian habitat, active riparian habitat, Sandhill crane habitat). Acreage enrollment can move from another category provided thresholds within this agreement are met and maintained.
5. Acres must be protected through long-term agreements that are agreed upon by the Department and Regional San, easement, or fee title.

For an area to be considered part of the Program's active wetland benefit, it will satisfy the following criteria:

1. The wetland vegetation within the area will receive sufficient water, directly and/or indirectly, as a result of the Program. Either of the following could apply:
    a. Program recycled water is applied directly to the vegetation (active water delivery) as needed for the Term of the Contract or until groundwater elevations are raised to 10 feet bgs or higher (shallower) to support established wetland communities.
    b. The underlying groundwater of an area is indirectly (passively) raised to a level within 10 feet bgs or higher (shallower) as a result of the Program.
2. Each acre will receive at least one of the below active management activities from the Program in addition to targeted water delivery and/or groundwater table improvement. Such actions include:
    a. **Native Species Plantings:** Planting density will be dependent on the target plant community and existing desirable vegetation. Wetland species plantings will use a combination of plant stock types installed at approximately 3-10 foot spacing. Plantings may constitute all of the plants needed to reach the desired density, or they will augment existing plants. If planted, targeted survival rate should be no less than 80%, otherwise they will be restocked to planned density. Species selections will be informed by local, native plan communities.
    b. **Invasive Species Management:** Invasive vegetation management plans will vary from site to site, based on site-specific conditions, but will entail the reduction and maintenance of approximately 10% cover or less for invasive woody species and approximately 20% cover or less for invasive herbaceous species.
    c. **Browse Control – Livestock:** Fencing is anticipated to be the primary strategy used to prevent livestock browsing of wetland habitat. Where installed, wildlife-

friendly fencing will be established around the habitat to prevent browsing or mechanical damage to allow for establishment of vegetation. Common fence types likely to be used include moveable electric fence on lands where livestock are present seasonally, or semi-permanent t-posts and barbed wire fence where livestock are likely to be in the area for a longer duration.

d. **Browse Control – Wildlife:** Beaver are common within the Program Area. Browsing by beavers can interfere with achieving objectives of reforestation. In areas where beaver damage is expected to be severe, welded wire cages of fencing will be installed around vegetation as needed. Where employed, browsing protection will be installed to adequately protect plantings.

3. The Program will establish land use agreements, based on master agreement templates (Exhibit C) that have been approved by CDFW, to deliver recycled water to lands enrolled and implement land management activities. Executed agreements will be provided to CDFW with Annual Reports for the year in which it was executed.

4.1.5 Active Riparian Habitat

The Program will create, restore, or enhance a total of 500 acres of riparian habitat within the Program Area to achieve habitat functionality of 70 percent or greater, as demonstrated through use of the modified CRAM, for the term of the Contract. The Program will provide direct water delivery to riparian habitat as needed for the Term of the Contract or until underlying groundwater elevations reach at least 10 feet bgs, in addition to performing land management activities such as native species plantings, weed control, and protection from herbivory. The Program will enroll and protect the full 500 acres by the end of Program Year 10 with functionality improvements anticipated by Program Year 15.

To be eligible for inclusion in the active riparian benefit, a location must satisfy the following criteria:

1. The area must be located within the Program Area.
2. Acres may include areas that already contain overstory riparian species at the time of contract execution, such as Valley oak (*Quercus lobata*), Fremont's cottonwood (*Populus fremontii*), sandbar willow (*Salix exigua*), Goodding's willow (*Salix gooddingii*), Arroyo Willow (*Salix lasiolepis*), but must be enhanced through Program activities such as land management activities and water delivery, if located outside of the Groundwater Benefit Area.
3. Acres must not be enrolled simultaneously by the Program into another benefit category (i.e., vernal complex, passive wetland/ riparian habitat, active wetland habitat, Sandhill crane habitat). Acreage enrollment can move from another category provided thresholds within this agreement are met and maintained.
4. Acres must be protected through long-term agreements that are agreed upon by the Department and Regional San, easement, or fee title.

For an area to be considered part of the Program's active riparian benefit, it will satisfy the following criteria:

1. The riparian vegetation within the area will receive sufficient water, directly and/or

indirectly, as a result of the Program. Either of the following could apply:

a. Program recycled water is applied directly to the vegetation (active water delivery) as needed for the Program life or until groundwater elevations are raised to 10 feet bgs or higher (shallower).
b. The underlying groundwater of an area is indirectly (passively) raised to a level within 10 feet bgs or higher (shallower) as a result of the Program.

2. Each acre enrolled into the riparian habitat benefit that is not already forested with a native riparian canopy of at least 80% coverage will be planted according to Criteria 3a below.
3. Active riparian areas will receive at least one of the below active management activities from the Program in addition to Targeted Water Delivery and/or Water Table Improvement. Such actions include:
    a. **Native Species Plantings:** Planting density will be dependent on the target plant community and existing desirable vegetation. Riparian forest plantings will use a combination of plant stock types installed at approximately 3-10 foot spacing. Riparian plantings may constitute all of the plants needed to reach the desired density, or they will augment existing plants. If planted, targeted survival rate should be no less than 80%, otherwise they will be restocked to planned density.
    b. **Invasive Species Management:** Invasive vegetation management plans will vary from site to site, based on site-specific conditions, but will entail the reduction and maintenance of approximately 10% cover or less for invasive woody species and approximately 20% cover or less for invasive herbaceous species.
    c. **Browse Control – Livestock:** Fencing is anticipated to be the primary strategy used to prevent livestock browsing of riparian habitat. Where installed, wildlife-friendly fencing will be established around the habitat to prevent browsing or mechanical damage to allow for establishment of vegetation. Common fence types likely to be used include moveable electric fence on lands where livestock are present seasonally, or semi-permanent t-posts and barbed wire fence where livestock are likely to be in the area for a longer duration.
    d. **Browse Control – Wildlife:** Beaver are common within the Program Area and preferentially target cottonwood and willow species. Although these species typically re-sprout following damage or removal, browsing by beavers can interfere with achieving objectives of reforestation. In areas where beaver damage is expected to be severe, welded wire cages or fencing will be installed around cottonwood and willow tree species as needed. Willow whips may be planted adjacent to waterways to create a living fence intended to deter beavers from browsing inland trees. Deer are also common in the Program Areas with natural or naturalized vegetation. However, browsing impact by deer is generally low enough to not require management. Where employed, browsing protection will be installed to adequately protect plantings.
4. The Program will establish land use agreements, based on master agreement templates (Exhibit C) that have been approved by CDFW, to deliver recycled water to lands enrolled and implement land management activities. Executed agreements will be

provided to CDFW with Annual Reports for the year in which it was executed.

4.1.6 Vernal Pool Complex

The Program will permanently protect and enhance 353 acres of vernal pool complex located within the Program Area by implementing cattle grazing management strategies and upland water application, as needed. The Program will permanently protect through conservation easement or fee title all 353 acres of vernal pool complexes by Year 5 following execution of Funding Agreement.

To be eligible for inclusion in the vernal pool complex benefit, an area must satisfy the following criteria:

1. Acres must be located within the Program Water Delivery Area.
2. The area has been identified via field investigation by local experts and/or public wetland datasets (such as the California Aquatic Resources Inventory) as a vernal complex.
3. The area does not contain permanent development nor permanent crops (such as vineyards and orchards).
4. Acres must not be enrolled by the Program into another benefit category (i.e., passive wetland/ riparian habitat, active wetland/riparian habitat, Sandhill crane habitat).

For an area to be considered part of the Program's vernal pool complex benefit, it will satisfy the following criteria:

1. The Program will deliver water annually, when needed, to properties for the management of livestock pursuant cooperative grazing plans implemented specifically for maintenance of vernal complex habitat.
2. The acres enrolled into the Program will have existing vernal complex habitat including a minimum of 50 "wetted" vernal pool acres.
3. The Program will establish vernal management agreements, with master agreement templates (Exhibit C) approved by CDFW, for active management of vernal pool complex areas.

4.2 ADAPTIVE MANAGEMENT

The Parties agree that Regional San shall manage the Public Ecosystem Benefits according to principles of adaptive management. The Adaptive Management Plan is attached, referred hereto as Exhibit B and incorporated by reference as though set forth in full herein. Regional San must comply with all provisions of the Adaptive Management Plan.

4.3 REPORTING

4.3.1 Reporting to the Department

4.3.1.1 Annual Summary Reports

Regional San shall provide an Annual Summary Report to the Department [XX DAYS/MONTHS] following [EVENT]. Each Annual Summary Report thereafter shall be provided by [DATE AGREED UPON BY DEPARTMENT AND REGIONAL SAN]. The Annual Summary Report shall document progress and current status of each public ecosystem benefit provided, including a description of any changes since the last report.

4.3.1.2 Adaptive Management Review Reports

Adaptive management actions shall be reported based on the schedule established for each Public Ecosystems Benefit in the Adaptive Management Plan, including a five-year Adaptive Management Review Report ("Review Report") as described in Section 1.6 of the Adaptive Management Plan. All reports shall be submitted to the Department's designated WSIP Program Manager. Reports shall include all components described in Section 1.6 of the Adaptive Management Plan and include Reporting Components identified for specific Project Implementation Actions, Benefit Implementation Actions, and anticipated Benefit Ecosystem Response.

4.3.2 Reporting to the California Water Commission

Regional San shall provide a copy of the Annual Summary Report described in Section 4.3.1.1 to the CWC at the same time such report is submitted to the Department.

4.4 REQUIREMENT TO SHARE DATA

In addition to data required by the Annual Summary Report and Adaptive Management Plan Review Report, the Department may make additional specific data requests reasonably related to the administration of the Contract. Regional San shall provide data responsive to the Department's request on a reasonable timeline agreed to by both Parties. If Regional San relies on data acquired by a third party and such data are not collected on behalf of Regional San, Regional San shall identify the third party which holds the data relied upon to the Department. Data that may be requested may include, but is not limited to, reports, modeling and datasets.

4.5 ASSURANCES

The Parties have determined that the following provide the required assurances under California Code of Regulations, title 23, section 6014 subdivision (a)(2)(A)(5):

(1) Regional San will maintain and operate the Program through the Term of the Contract;
(2) Regional San will maintain permits throughout the Term of the Contract required to deliver irrigation and wintertime water and otherwise comply with all applicable regulations and requirements;
(3) Regional San will not export groundwater from the Program Area if metrics related to groundwater levels or Cosumnes Flows are below associated Performance Thresholds;
(4) Regional San provided master agreement land use and vernal management templates for the Department's review and approval;
(5) Regional San provided a Letter of Intent from a landowner interested in enrolling their 111 acre parcel containing vernal complex into the Program; and,
(6) The Adaptive Management Plan will not require more water or habitat acreage be provided by Regional San than proposed within this Contract.

SECTION 5 PUBLIC BENEFIT DISPUTE PROCESS

5.1 DISPUTES OVER PUBLIC BENEFITS NOT RESOLVED BY ADAPTIVE MANAGEMENT

The Department shall review the five-year Adaptive Management Review Report ("Review Report") described in Section 4.3.1 of this Contract and Section 1.6 of the Adaptive Management Plan. If the Department concludes, based on the Review Report and the best available science, that Project Implementation Actions, Benefit Implementation Actions, or

Benefit Environmental Response metrics are at or below the associated Adaptive Management Trigger as described in the Adaptive Management Plan, the Adaptive Management Decision-Making Body shall convene as described in Section 1.5 of the Adaptive Management Plan. If the Adaptive Management Decision-Making Body cannot agree on the appropriate course of action as described in Section 1.5 of the Adaptive Management Plan, the Department may initiate the public benefit dispute process described in this section. The Department may only initiate the public benefit dispute process when:

- The Parties disagree on appropriate adaptive management actions within the Program's control and identified in the Adaptive Management Plan and the Department determines that not adjusting adaptive management in the manner recommended by the Department will result in an insufficient Public Ecosystem Benefit;
- The Parties disagree on whether the Public Ecosystem Benefit should be adjusted;
- The Parties disagree on whether the Public Ecosystem Benefit continues to be feasible; or
- The Department determines the Public Ecosystem Benefit is no longer occurring due to the Regional San's failure to conduct Project Implementation Actions and/or Benefit Implementation Actions and no excuse exists for such failure.

5.2 DEPARTMENT INITIATION OF PUBLIC BENEFIT DISPUTE PROCESS

If the Department elects to initiate the public benefit dispute process the Department shall provide written notice to Regional San. The written notice shall:

(1) State the disputed issues which prompted the meet and confer process described in Section 1.5 of the Adaptive Management Plan;
(2) Document the alternatives considered during the Adaptive Management Decision-Making Body's meet and confer process described in Section 1.5 of the Adaptive Management Plan; and
(3) State whether resolution was achieved, in whole or in part and state the specific relief, including the timeline, agreed to as part of any resolution;
(4) Identify all outstanding issues that remain unresolved; and
(5) Propose a solution to the remaining unresolved issues.

The Department may also request additional relevant information from the Regional San which may inform the Department's understanding of the dispute.

5.3 REGIONAL SAN RESPONSE

Within 60 days of the Department's written notification to Regional San as described in Section 5.2, Regional San shall provide a written response to the Department. The response shall identify the issues, propose a solution to the dispute, and respond to the Department's requests for additional relevant information.

5.4 MEETINGS

Throughout the Public Benefit Dispute Process, either Party may request a meeting with the other Party at any time.

5.5 AGREEMENT ON SOLUTION; PROCESSING AMENDMENTS AS NECESSARY

If during the Public Benefit Dispute Process the Parties mutually agree on a solution and the solution requires an amendment to the Contract, including to the Adaptive Management Plan, the Parties shall process an amendment as described in Section 8.6 of this Contract and the CWC Funding Agreement paragraph 20.

5.6 FAILURE TO AGREE ON SOLUTION; DEPARTMENT FINDING OF INSUFFICIENT PUBLIC BENEFIT

Should the Parties not mutually agree on a solution to the public benefit dispute, the Department shall submit a finding of insufficient public benefit to the CWC for its consideration and action pursuant to Funding Agreement paragraph 15A. With its finding of insufficient public benefit, the Department shall provide the CWC an explanation regarding the cause of the insufficient public benefit. The explanation shall also include a description of remedial actions taken to date by Regional San, including any mitigating circumstances, its determination of whether the insufficient public benefit is the fault of the Regional San, and the Department's recommended compliance actions. Regional San may also provide any information it believes is pertinent to the CWC. Should a decision by the CWC result in a change to the Public Ecosystem Benefit provided, the Parties shall process an amendment pursuant to Section 8.6 that appropriately reflects the ongoing obligations of Regional San.

SECTION 6 DISPUTE RESOLUTION

6.1 CONTINUING RESPONSIBILITIES

Both Parties shall continue with their responsibilities under this Contract during any dispute.

6.2 DISPUTES INVOLVING PUBLIC BENEFITS

If the Parties fail to resolve a dispute covered by Section 5 of this Contract, the Department shall notify the CWC of the dispute. The Parties shall follow the procedure set forth in Section 5 of this Contract.

6.3 OTHER DISPUTES

For any other disputes not covered by Section 5 of this Contract, Parties shall attempt to negotiate a resolution to any dispute and process any amendment necessary to this Contract to implement the terms of any such resolution.

SECTION 7 SPECIFIC PERFORMANCE

In the event of a default by Regional San, as determined by the CWC under Funding Agreement paragraph 15, before the term of this Contract is complete then, in addition to any and all other remedies available at law or in equity, the Department may seek specific performance of this Contract. Regional San agrees that specific performance is an appropriate remedy because the benefits to the Department from the Program, as described in Section 4 (Public Ecosystem Benefits), are unique and damages would not adequately compensate the Department for the loss of such benefits.

SECTION 8 GENERAL TERMS AND CONDITIONS

8.1 GOVERNING LAW

This Contract is governed by and shall be interpreted in accordance with the laws of the State of California.

8.2 SUPERSEDING PREVIOUS AGREEMENTS

This Contract supersedes all prior discussions, negotiations, understandings, or agreements of the Parties relating to the Contract or the Program.

8.3 PROJECT ACCESS

The Program site is located on properties owned by Regional San and third-party landowners not parties to this Contract (Third-Party Landowners). Regional San shall ensure that the Department and the Department's employees and agents have safe and suitable access to lands under the direct ownership and/or control of Regional San at all reasonable times during the Term of this Contract for the purpose of inspecting the public ecosystem benefits. Additionally, Regional San shall include provisions in its agreements with Third-Party Landowners ensuring such access to the Department for purposes of fulfilling this Contract if the specific parcel is placed under easement or fee title as a result of the Program. The Department shall not unreasonably interfere with Regional San or the Third-Party Landowners' use and enjoyment of their property. The Department shall notify Regional San at least five (5) business days prior to entering Regional San's property and notify Regional San seven (7) business days prior to entry to coordinate with Regional San or its agents for both parties to access a Third-Party Landowner's property. (Cal. Code Regs., tit. 23 § 6014, subd. (a)(2)(A)(6).)

8.4 INDEMNIFY AND HOLD HARMLESS

Regional San shall indemnify and hold and save the Department, its officers, agents, and employees free and harmless from any and all liabilities for any claims and damages (including inverse condemnation) that may arise out of the Program and this Contract, including, but not limited to any claims or damages arising from planning, design, construction, maintenance, monitoring, verification, and/or operation of this Program, except to the extent resulting from the negligence or willful misconduct of the Department, its officers, employees, and agents.

8.5 NO WAIVER

Enforcement of the terms of this Contract by the Department shall be at the discretion of the Department, and any forbearance by the Department to exercise its rights under this Contract shall not be deemed or construed to be a waiver by the Department of such term or of any rights of the Department under this Contract.

8.6 AMENDMENTS

This Contract, including the Adaptive Management Plan, may be amended at any time by mutual agreement of the Parties, except insofar as any proposed amendments are in any way contrary to applicable law. No amendment shall be valid unless made in writing and signed by the Parties and agreed to by the CWC. Only persons duly authorized to sign an amendment on behalf of either Party may do so. No oral understanding or agreement not incorporated in this Contract is binding on either of the Parties. Requests by either Party for amendments must be in writing, stating the amendment request and the reason for the request. Neither Party shall have an obligation to agree to an amendment. All amendments agreed to by the Parties shall be submitted to the CWC pursuant to Funding Agreement paragraph 20. If the Parties mutually agree to an amendment that substantially reduces, eliminates, or substantially repurposes the Public Ecosystems Benefit, the Parties shall notify the Commission pursuant to Funding Agreement paragraph 15B.

8.7 SUCCESSORS AND ASSIGNS

This Contract and all of its provisions shall apply to and bind the successors and assigns of the Parties. No assignment or transfer of this Contract or any part thereof shall be valid unless and until it is approved by the Department and made subject to such reasonable terms and conditions as the Department may impose.

8.8 SEVERABILITY

Should any portion of this Contract be determined to be void or unenforceable, such shall be severed from the whole and the Contract shall continue as modified.

8.9 INDEPENDENT CONTRACTOR

Regional San, and the agents and employees of Regional San, in the performance of this Contract, shall act in an independent capacity and not as officers or employees or agents of the Department. Regional San acknowledges and promises that the Department is not acting as an employer to any individuals furnishing services or work on the Program pursuant to this Contract.

8.10 PROJECT REPRESENTATIVES

All inquiries may be directed to the Project Representatives:

[Name]	[Name]
WSIP Program Manager	[Title]
California Department of Fish and Wildlife	[PROJECT PROPONENT]
[Mailing Address]	[Mailing Address]
[E-mail address]	[E-mail address]

Parties shall inform each other in writing of any changes to Program Representatives.

EXHIBITS

Each exhibit referenced in this Contract and listed below is incorporated by reference as though set forth in full herein.

Exhibit A – Department's Findings Regarding Public Ecosystem Benefits for the Program
Exhibit B – Adaptive Management Plan for Harvest Water Program
Exhibit C – Master Agreement Templates

IN WITNESS WHEREOF, this Contract is made and entered into in the State of California by Regional San and the Department, each of which hereby agrees to the terms and conditions of this Contract.

California Department of Fish and Wildlife
By:

Signature: _____
Printed name: Charlton H. Bonham
Title: Director, California Department of Fish and Wildlife

Date: _____

Sacramento Regional County Sanitation District
By:

Signature: _____
Printed name: [NAME]
Title: [TITLE]

Date: _____

EXHIBIT A

DEPARTMENT'S FINDINGS REGARDING PUBLIC ECOSYSTEM BENEFITS FOR THE HARVEST WATER PROGRAM

EXHIBIT B

ADAPTIVE MANAGEMENT PLAN
HARVEST WATER PROGRAM

PROPOSITION 1 WATER STORAGE INVESTMENT PROGRAM
DRAFT CONTRACT FOR ADMINISTRATION OF PUBLIC ECOSYSTEM BENEFITS
HARVEST WATER PROGRAM
EXHIBIT B
ADAPTIVE MANAGEMENT PLAN

SECTION 1 PROGRAM-WIDE APPROACH FOR ADAPTIVE MANAGEMENT AND REPORTING

1.1 OVERVIEW

The Harvest Water Program (Program) is a conjunctive use program that aims to leverage recycled water deliveries for irrigation to enhance groundwater levels, ecosystem function, and agricultural sustainability in the southern Sacramento County area. The Program would deliver up to 50,000 acre-feet per year (AFY), with an annual average delivery of 41,250 acre-feet (AF) of tertiary-treated recycled water for irrigation of agricultural and habitat lands in southern Sacramento County, as an in-lieu groundwater recharge source. Specifically, the Program will deliver an average of 32,500 AFY of recycled water during the irrigation season for in-lieu recharge of the groundwater table and will supply an additional average of 8,750 AFY of recycled water during the wintertime through water delivery for Sandhill crane habitat. The in-lieu groundwater recharge activities will increase groundwater elevations within the Program Area (Figure 1), which are anticipated to increase flows in the Cosumnes River and support groundwater-dependent wetland and riparian habitats. The Program's enhancements of Sandhill crane habitat, Cosumnes River flows, wetland and riparian habitat, and vernal pool habitat are provided as public ecosystem benefits under the Water Storage Investment Program (WSIP).

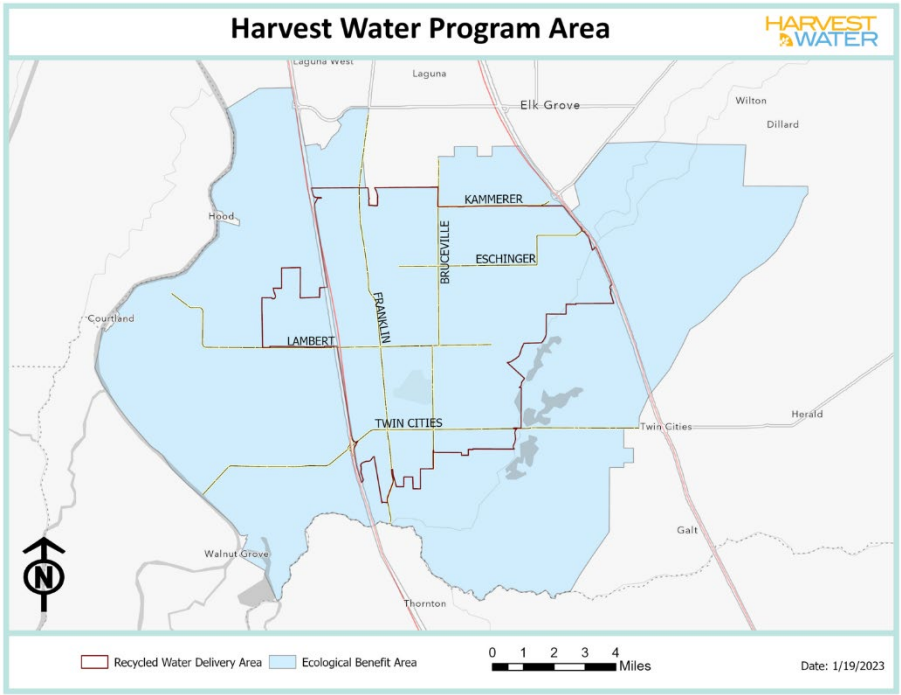

Figure 1. Overall Program Area includes the Ecological Benefits Area and Recycled Water Delivery Area.

1.2 ADAPTIVE MANAGEMENT PLAN APPROACH

This Adaptive Management Plan outlines a monitoring plan, including project implementation milestones and Performance Thresholds (defined in Section 1.4) which demonstrate the Program's success in carrying out the Project Implementation Actions and Benefit Implementation Actions specified in the Contract for Administration of Public Ecosystem Benefits. The Adaptive Management Plan identifies how monitoring will be used to adaptively manage the Program's Public Ecosystem Benefits through a meet and confer process and corrective actions. The intent of the Adaptive Management Plan is to increase the likelihood of achieving and maintaining the desired Benefit Environmental Responses, the ecosystem response derived from Project Implementation Actions and Benefit Implementation Actions, notwithstanding uncertainties beyond the scope of Regional San's control and responsibility, which can include, but are not limited to, California hydrology, future regulatory conditions, changing water operations outside of the Program's influence, changes in land use, and climate change. Adaptive management of the Program will be implemented on a five-year cycle. Although not all specified Benefit Environmental Responses are anticipated to occur within every five-year review cycle, a five-year review cycle provides a regular opportunity to evaluate data from the previous years of project implementation, maintenance and monitoring, and allows for incorporation of new technologies and lessons learned into subsequent implementation, monitoring, maintenance, and performance tracking.

This Adaptive Management Plan is structured according to definitions and requirements outlined in the statute and California Code of Regulations. Water Code section 85052 defines adaptive management as "a framework and flexible decision-making process for ongoing knowledge acquisition, monitoring, and evaluation leading to continuous improvement in management planning and implementation of a project to achieve specified objectives." [2]

The California Code of Regulations (CCR), Title 23, Waters, Water Storage Investment Program (WSIP), section 6014, subdivision (a)(2)(A) states, "[t]he contract between an administering agency and applicant shall contain:

(1) An adaptive management plan for the public benefits funded under the [WSIP] Program. The adaptive management plan shall contain:
   a. Public benefit monitoring metrics;
   b. Monitoring locations, frequencies, and timing;
   c. Metric evaluation methodology and associated threshold or trigger levels based on best available science that initiate adaptive management actions;
   d. Decision making process including the administering agency role and the adaptive management actions that would be taken when a trigger is reached;
   e. Funding sources and financial commitments to implement the adaptive management plan;
   f. Other items deemed necessary on a case-by-case basis by administering agencies entering into the contract."

[2] Section 6001(a)(1) of the WSIP Regulations provides that the definition of "adaptive management" for WSIP "has the same meaning as provided in California Water Code section 85052."

1.3 ROLES AND RESPONSIBILITIES

Roles and responsibilities for each party are identical to those contained in Section 2 of the Contract for the Administration of Public Ecosystem Benefits.

1.3.1 Adaptive Management Expectations

The Sacramento Regional County Sanitation District (Regional San) is obligated to deliver the Harvest Water Program (Program) Project Implementation Actions and Benefit Implementation Actions identified in this Contract and implement this Adaptive Management Plan, in order to achieve anticipated Benefit Environmental Responses. This Adaptive Management Plan acknowledges that while the Benefit Environmental Responses (i.e., targeted ecosystem improvement outcomes) identified are derived by physical changes resulting from Project Implementation Actions and Benefit Implementation Actions, they may also be influenced by additional factors that are beyond the Program's control. However, the WSIP intends to achieve ecosystem improvement from physical changes in or resulting from Program operations,[2] as such, failure to achieve a Benefit Environmental Response will trigger adaptive management actions, including agreed upon modifications to Project Implementation Actions and/or Benefit Implementation Actions if changes to management of those actions may lead to achievement of the Benefit Environmental Responses. Modifications to Project Implementation Actions and Benefit Implementation Actions will not include providing additional habitat acreage, implementing new land management activities not specified in Sections 4.1.4 and 4.1.5 of the Contract, or an additional quantity of water beyond what is specified in this Contract. However, modifications to Project Implementation Actions and Benefit Implementation Actions may include providing water at a different time and location. Descriptions of Harvest Water Program Project Implementation Actions, Benefit Implementation Actions, and anticipated Benefit Environmental Responses are presented in Table 1.

Table 1. Project Implementation Actions, Benefit Implementation Actions, and anticipated Benefit Environmental Response for the Harvest Water Program.

Program Implementation Actions	Benefit Implementation Actions	Benefit Environmental Response
Recycled Water Delivery 1. Irrigation water April – October 2. Wintertime water November – March	Sandhill Crane 1. Water delivery 2. Acreage enrollment 3. Land management Cosumnes River Flow 1. Cumulative streamflow 2. Groundwater elevation Wetland/Riparian (Passive) 1. Groundwater elevations within 10 feet bgs Wetland (Active) 1. Acreage enrollment and protection 2. Water supply/improvement 3. Land management Riparian (Active)	Sandhill Crane 1. Crane usage Cosumnes River Flow 1. Increased river connectivity Wetland/Riparian (Passive) 1. Functionality (modified CRAM) Wetland (Active) 1. Functionality (modified CRAM) Riparian (Active) 1. Functionality (modified CRAM) Vernal Pool Complex 1. Functionality (modified CRAM)

	1. Acreage enrollment and protection 2. Water supply/improvement 3. Land management Vernal Pool Complex 1. Acreage enrollment and protection 2. Land management	

Project Implementation Actions: Defined as foundational actions the Program must execute for derivation of Public Ecosystem Benefits. Ramping of Project Implementation Actions may be established with defined project implementation milestones. However, once Performance Threshold (defined in Section 1.4) metrics are achieved, they should be maintained for the duration of the Contract.

Benefit Implementation Actions: Defined as actions, identified in this Contract, that influence the quantity and/or quality of a Benefit Environmental Response. Ramping of Benefit Implementation Actions associated with establishing physical benefit quantities may be established as benefit implementation milestones. Agreements and/or operations necessary for benefit implementation should be implemented for the Term of the Contract. In cases where a Benefit Implementation Action is fundamental to achieving the Benefit Environmental Response(s) but may be influenced by factors outside of the project's control, the meet and confer process discussed in Section 1.5 of this Adaptive Management Plan will be used to recommend a course of action should an Adaptive Management Trigger (defined in Section 1.4) occur.

Benefit Environmental Response: The Ecosystem Improvement as defined in California Code of Regulations, title 23, section 6001, subdivision (a)(28): a public benefit that includes changing the timing of water diversions, improvement in flow conditions, temperature, or other public benefits that contribute to the restoration of aquatic ecosystems and native fish and wildlife, including those ecosystems and fish and wildlife in the Delta, pursuant to Water Code section 79753(a)(1). Ecosystems include both aquatic and terrestrial habitats and natural communities. Based on current best available science, the Project Implementation Actions and Benefit Implementation Actions are anticipated to result in achievement of the Benefit Environmental Response Performance Thresholds identified for the Program. Accordingly, if an Adaptive Management Trigger occurs based on a Benefit Environmental Response metric, adaptive management recommendations may call for changes to Adaptive Management actions as delineated in Sections 2.1.5, 3.1.6, 3.2.6, 3.3.6, 3.4.5, 3.5.6, 3.6.6, 4.1.6, 4.2.5, 4.3.6, 4.4.6, 4.5.6, and 4.6.6.

As part of the communication structure for implementation of this Adaptive Management Plan, a Decision-Making Body formed by representatives of Regional San and the Department will be established to coordinate on adaptive management for all Public Ecosystem Benefits. It is the responsibility of both Regional San and the Department to identify representatives for participation in the Decision-Making Body. Other partners, resources, and expertise may be involved as needed and at the discretion of the Decision-Making Body.

1.4 ADAPTIVE MANAGEMENT THRESHOLDS AND TRIGGERS

California Code of Regulations, title 23, section 6001, subdivision (a) provides definitions for the terms “threshold” and “trigger” in the context of adaptive management. “Threshold” means a numerical value for a specific metric that is a boundary between acceptable and unacceptable situations or conditions, or a specific metric that must be exceeded for a certain reaction, result, or condition to occur. “Trigger” means an event, situation, or measurement that initiates or requires a management action. Each monitoring metric is associated with an adaptive management threshold and trigger. These are pre-determined decision points specific to each Project Implementation Action, Benefit Implementation Action, and Benefit Environmental Response. Program status for each benefit’s Project Implementation Actions, Benefit Implementation Actions, and Benefit Environmental Response will be assessed as described below:

Performance Thresholds are established as the full extent of Project Implementation Actions and Benefit Implementation Actions and the quantity of Benefit Environmental Response anticipated to be achieved by implementation of with-project actions (Project Implementation Actions and Benefit Implementation Actions) compared to without-project actions (future baseline) or pre-project conditions (pre-project baseline), based on best available science at the time of contract execution. They can be anticipated absolute values, short- or long-term averages, or rolling averages depending on the benefit described. Performance Threshold values indicate expected or better conditions above baseline conditions. Project Implementation Actions and Benefit Implementation Actions will have specified Performance Thresholds associated with Contract commitments. If a ramp-up period is expected, implementation milestones may be established for Project Implementation Actions and Benefit Implementation Actions, as appropriate, to serve as interim Performance Thresholds that the Project should achieve over a specified amount of time.

Adaptive Management Triggers are events, situations, and/or values determined to be below Performance Thresholds, assessed on a five-year review cycle. Adaptive Management Triggers are evaluated based on monitoring metrics associated with Project Implementation Actions, Benefit Implementation Actions, and Benefit Environmental Responses, and are determined by the evaluation of specified monitoring metrics compared to the associated Performance Threshold. Adaptive Management Trigger indicates when a Public Ecosystem Benefit is experiencing a potential challenge, is not on the expected trajectory to achieve the Performance Threshold, and the monitoring data is below the Performance Threshold.

Performance Thresholds and Adaptive Management Triggers are prescribed in two phases, where each phase has its own set of thresholds and associated triggers identified.

Phase 1 occurs during the Program’s initial ramp-up period (if applicable). A ramp-up period may apply if the Program needs time to initiate and/or implement Project Implementation Actions or Benefit Implementation Actions, such as soliciting participation, enrolling acres, developing water storage volume, etc. During Phase 1, implementation milestones are established for Project and Benefit Implementation Actions as interim Performance Thresholds to show progress during the ramp-up period towards achieving the full contractual benefit quantity. Implementation milestones will have associated Adaptive Management Triggers.

Phase 2 occurs after the ramp-up period has ended, if applicable, and/or once the Program is able to deliver the full contractual benefit quantity. During Phase 2, adaptive management will

occur around the Performance Threshold and its associated trigger. If the Program does not require an initial ramp-up period for Project or Benefit Implementation Actions, then adaptive management will apply to only Phase 2.

1.5 DECISION-MAKING PROCESS

Program performance will be evaluated on its success in achieving Performance Thresholds identified for the Program Implementation Actions, Benefit Implementation Actions and Benefit Environmental Response. If an Adaptive Management Trigger occurs, then decision-making processes and adaptive management actions will be initiated as described below.

When a ramp-up period is required for Project Implementation Actions and Benefit Implementation Actions, Program performance will be evaluated during the ramp-up period on its success in achieving the benefit-specific implementation milestones. The purpose of implementation milestones is to show progress during the ramp-up period towards achieving Performance Thresholds.

Decision processes:

Should an Adaptive Management Trigger occur, the Program will identify limiting factors and implement any appropriate adaptive management actions from the potential actions delineated in the corresponding section. Should a Project Implementation Action Adaptive Management Trigger occur, the Program will identify limiting factors and implement any appropriate adaptive management actions from the potential actions delineated in Section 2.1.5. Should a Benefit Implementation Action Adaptive Management Trigger occur, the Program will identify limiting factors and implement any appropriate adaptive management actions from the potential actions delineated in Sections 3.1.6, 3.2.6, 3.3.6, 3.4.5, 3.5.6 and 3.6.6. Should a Benefit Environmental Response Adaptive Management Trigger occur, the Program will identify limiting factors and implement any appropriate adaptive management actions from the potential actions delineated in Sections 4.1.6, 4.2.5, 4.3.6, 4.4.6, 4.5.6, and 4.6.6. The Program may also identify reasons why Adaptive Management Actions may not result in the achievement of Performance Thresholds (e.g., extended drought conditions or infrastructure repairs) and will propose a plan in the Annual Report to meet Performance Thresholds in the next Adaptive Management Review Report period. The Program will report to the Department as identified in Section 1.6.

If, after review of the Adaptive Management Review Report and any other relevant monitoring data, the Department concludes that Project Implementation Actions and Benefit Implementation Actions are occurring and Project Implementation Action, Benefit Implementation Action, and Benefit Environmental Response metrics are above the associated Adaptive Management Triggers or the Department concludes it is not feasible to meet Performance Thresholds in the reporting period in question, the Department will confirm this status with the Program and the Program will continue to implement its monitoring plan.

If, after review of the Adaptive Management Review Report and any other relevant monitoring data, the Department concludes that Project Implementation Action, Benefit Implementation Action, or Benefit Environmental Response metrics are at or below the associated Adaptive Management Trigger and, if relevant, current adaptive management actions being taken may not be sufficient to achieve Performance Thresholds, the Department will initiate the Meet and Confer Process. Through the Meet and Confer Process, the Decision-Making Body will identify the limiting factor(s) to achieving conditions above the Adaptive Management Triggers.

Should the Program refuse to meet and confer, the Department will independently investigate the limiting factor(s).

Through the Meet and Confer Process or the Department's independent investigation:

1. If the Decision-Making Body determines that the Project Implementation Actions or Benefit Implementation Actions are not occurring as described in this Contract or a modification to adaptive management actions is warranted, the Decision-Making Body will recommend adaptive management actions and a timeline for the Program to implement any modifications identified.
    a. If the Program successfully implements the recommended adaptive management actions, then the monitoring plan will continue with increased annual evaluation of metrics compared to Performance Thresholds and Adaptive Management Triggers. After a subsequent five-year review cycle of the annual metric assessment showing achievement of Performance Thresholds, the Program can resume monitoring with a five-year adaptive management review.
    b. If the Decision-Making Body cannot agree on limiting factors or recommended actions to achieve Performance Thresholds above Adaptive Management Triggers, the Department may initiate the Public Benefit Dispute Process. See CAPB Section 5.
    c. If the Program does not implement the recommended actions according to the recommended timeline or fails to achieve Performance Threshold levels above Adaptive Management Triggers because of a failure to implement Project Implementation Actions or Benefit Implementation Actions, the Department may initiate the Public Benefit Dispute Process. See CAPB Section 5.

2. If a Benefit Environmental Response Adaptive Management Trigger occurs, the Decision-Making Body will determine the limiting factors to the best of its ability and may recommend adaptive management actions resulting in changes to Project Implementation Actions and/or Benefit Implementation Actions identified in this Contract if such changes to those actions may lead to achievement of the Benefit Environmental Response(s).
    a. If recommended adaptive management actions are implemented by the Program, monitoring will continue with annual evaluation of metrics until the succeeding five-year review.
        i. If Performance Thresholds are achieved at the succeeding five-year adaptive management review, no further action needs to be taken and the Program can resume the regular schedule of monitoring with five-year adaptive management review.
        ii. Should the Benefit Environmental Response Adaptive Management Trigger occur after ten succeeding years after initial implementation of the adaptive management action (two five-year review cycles), the Decision-Making Body will meet and confer and determine if an adjustment to the Adaptive Management Plan for the Public Ecosystem Benefit in question, or to the Benefit Environmental Response Performance Threshold is needed, or an alternative Public Ecosystem Benefit can be achieved. Accordingly, the Department will process an amendment and inform the CWC of any benefit changes. See CAPB Section 7.6, Funding Agreement para. 15B.

iii. Should the Benefit Environmental Response Adaptive Management Trigger occur after ten succeeding years after initial implementation of the adaptive management action (two five-year review cycles) or further five-year review cycles and the Decision-Making Body determines that no additional adaptive management actions will result in achieving the Public Ecosystem Benefit, the Parties may mutually agree to terminate the requirements of this Contract specific to that Public Ecosystem Benefit. Accordingly, the Department will process an amendment and inform the CWC of the changes. See CAPB Section 7.6. If the Parties mutually agree to terminate the requirements of this Contract specific to an ecosystem benefit, the Parties shall also notify the Commission pursuant to Funding Agreement para. 15B.

b. Should the Program choose not to implement adaptive management actions, the Department may initiate the Public Benefit Dispute Process. See CAPB Section 5.
c. Should the Decision-Making Body not agree on an adjustment to the Adaptive Management Plan, or to the Benefit Environmental Response Performance Threshold, or to an alternative Public Ecosystem Benefit, the Department may initiate the Public Benefit Dispute Process. See CAPB Section 5.

1.6 PROGRAM REPORTING

Pursuant to California Code of Regulations, title 23, section 6014, subdivision (a)(2)(A)(3), the Program will provide to the Department an Annual Summary Report (Annual Report) that includes:

- Summary of Project Implementation Actions and Benefit Implementation Actions
- Discussion of challenges and/or success in achieving Project Implementation Actions and Benefit Implementation Actions
- Summary of monitoring methods
- All monitoring data
- Discussion of management activities
- Other relevant information

The Program will provide to the Department an Adaptive Management Review Report (Review Report) each five years or annually should an Adaptive Management Trigger occur. The Adaptive Management Review Report shall include:

- Items listed above for the Annual Summary Report
- Description of data evaluation methodology
- Results of metric analyses
- Evaluation of Performance Thresholds
- Evaluation of Benefit Environmental Response
- Discussion of any Adaptive Management Triggers that occurred, limiting factors that may have contributed to Adaptive Management Triggers occurring, and Adaptive Management actions taken to meet Performance Thresholds
- Discussion of challenges and/or success in achieving Public Ecosystem Benefit(s) (i.e., Project Implementation Actions, Benefit Implementation Actions, and Benefit Environmental Responses) Performance Thresholds

Reports can be provided to the Department through electronic and/or hard copy transmittal as

agreed upon and depending on data type. Review and response by the Department to the Program shall be completed within 60 days of submission of the Annual Report, and within 90 days of submission of the Review Report.

1.7 FUNDING ADAPTIVE MANAGEMENT PLAN IMPLEMENTATION

Pursuant California Code of Regulations, title 23, section 6014, subdivision (a)(2)(A)(1)(e), this Adaptive Management Plan contains Public Ecosystem Benefit monitoring metrics, monitoring locations, frequencies, and timing, metric evaluation methodology and associated thresholds and trigger levels based on best available science that initiate adaptive management actions, decision making processes, funding sources and financial commitments to implement this Adaptive Management Plan, and any other items deemed necessary to the Contract. Regional San may elect to participate in collaborative partnerships regarding the implementation of monitoring and/ or adaptive management actions of ecosystem benefits. However, should existing monitoring undertaken through collaborative partnerships cease, it is the project's responsibility to either implement necessary monitoring or identify and implement other monitoring partnerships for this Adaptive Management Plan.

SECTION 2 ADAPTIVE MANAGEMENT OF PROJECT IMPLEMENTATION ACTIVITIES

2.1 PROGRAM WATER DELIVERIES

2.1.1 Monitoring Metrics and Performance Thresholds

Monitoring metrics and performance thresholds for the delivery of Program recycled water will be:

2.1.1.1 Metric 1: Percentage of contract execution for Program water delivery (irrigation and winter season)

Implementation Milestones: 100% of water delivery contracts allowing for 32,500 acre-feet and 8,750 acre-feet for the irrigation and winter seasons, respectively, will be executed within five years of executing the Funding Agreement, by:

- Year 1, landowner contract execution representing 20% of annual recycled water delivery will be achieved.
- Year 3, landowner contract execution representing 60% of annual recycled water delivery will be achieved.
- Year 5, landowner contract execution representing 100% of delivery of recycled water annually will be achieved.

Performance Threshold: 100% of water delivery contracts needed to deliver 32,500 acre-feet and 8,750 acre-feet for the irrigation and winter season, respectively, will be met by Year 5 following the execution of the Funding Agreement and maintained for the term of this Contract.

2.1.1.2 Metric 2: Volume of Program Water Delivered

Implementation Milestone: Starting in Program Year 1, the Program will deliver both irrigation season (April through October) and winter season (November through March) water. The Program will ramp-up deliveries by:

- Program Year 3: annual delivery of at least 16,250 acre-feet April through October and 4,375 acre-feet November through March.
- Program Year 5: annual water delivery of 32,500 acre-feet April through October and

8,750 acre-feet November through March.

Performance Threshold: Beginning in Program Year 10, the Program will deliver a five-year annual average of 32,500 acre-feet per year of recycled water within the irrigation season (April through October) and a five-year annual average of 8,750 acre-feet per year of recycled water within the winter season (November through March) to the Water Delivery Area for agricultural operations including irrigation and Sandhill crane habitat.

2.1.2 Monitoring Methodology

The amount of recycled water delivered will be metered to ensure that Program water delivery is occurring as expected. Monitoring of Program recycled water deliveries should include accounting of water delivered during the irrigation season and winter season. In addition, an accounting of water delivered for the Sandhill crane benefit, active wetland benefit, active riparian benefit, and vernal pool benefit should also be maintained. Where multiple benefits are supported by Program water, estimates will be made by each category.

Location: At the Harvest Water Pump Station and each customer's meter.

Timing and frequency: Annual accounting and reporting to occur at the start of each calendar year for the preceding year.

2.1.3 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this document, the Program will provide the following information pertaining to Project Implementation Activities:

Annual Report: By each July 1st, the Program will report on Program status based on the prior calendar year. Reporting will include the percentage of water delivery represented by contracts executed for both irrigation and wintertime water delivery. The report will include a breakdown of water volumes delivered for the irrigation season April through October, winter season January through March, November and December, and provide approximate volumes within each season dedicated for fulfillment of Benefit Specific Actions (Sandhill crane habitat, active wetland habitat, active riparian habitat, vernal pool complex). The report will also characterize the water year types as defined by DWR's Bulletin 120, describing any periods of flood or drought that may have influenced the Program's ability to deliver targeted volumes. The report will identify if the Program is still operating under constraints of the State Water Resources Control Board, Division of Water Rights Order Wastewater Change Petition WW0092 and if as a result, any restrictions were placed on the Program.

Review Report: The Program will report the average annual water delivery attributed per season (i.e., irrigation April through October and winter November through March) considering the previous five years.

2.1.4 Adaptive Management Triggers

Trigger for Implementation Milestone Adaptive Management: For Metric 1, the percentage of executed contracts for water delivery is below the milestone at the associated year. For Metric 2, the annual delivery of irrigation and or wintertime water is below the milestone at the associated year.

Trigger for Performance Threshold Adaptive Management: For Metric 1, less than 100% of

water delivery contracts necessary to deliver 32,500 acre-feet and 8,750 acre-feet for the irrigation and winter season are obtained. For Metric 2, the five-year average annual volume of water delivered is below the Performance Thresholds of 32,500 AF and 8,750 AF, for irrigation and wintertime seasons, respectively.

Should the Program be unable to deliver full irrigation or wintertime volumes of water as a result of local hydrologic conditions, including serial storms and flooding, or due to Dry and Critically Dry water years and Shasta critical cutback year restrictions, as defined by the Wastewater Change Petition WW0092, the Program will not trigger Adaptive Management Actions related to water delivery during the five-year review cycle in which it occurs.

2.1.5 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the Decision-Making Process described in Section 1.5. All the potential adaptive management actions for recycled water deliveries in the Water Delivery Area are aimed at ensuring the Program meets Performance Thresholds for irrigation water and wintertime water deliveries. These actions include:

1. Increase the number of water delivery contracts (subject to overall water availability).
2. Implement reasonable and feasible incentives for participation.
3. Secure longer-term agreements, MOU/MOA, or fee title for landowner participation in the Program.

SECTION 3 ADAPTIVE MANAGEMENT OF BENEFIT IMPLEMENTATION ACTIVITIES

3.1 SANDHILL CRANE HABITAT BENEFIT

3.1.1 Benefit Objective

The Sacramento-San Joaquin Delta (Delta), including the lower Cosumnes River floodplain, is a very important region for wintering Sandhill cranes (*Antigone canadensis*). The Sandhill crane is listed as threatened under the California Endangered Species Act primarily because limited habitat availability. The objective of the Sandhill crane habitat benefit is to increase the acreage of available habitat (roosting and foraging) for Sandhill cranes within the Delta. The Program will provide an annual average of 3,500 acres of additional Sandhill crane habitat within the Program's Water Delivery Area, with a minimum of 2,500 acres each year for the life of the Contract. Habitat will be provided by the Program through collaborative landowner management and an annual average wintertime application of 8,750 acre-feet of recycled water.

3.1.2 Monitoring Metrics and Performance Thresholds

Performance evaluation of the Sandhill crane habitat benefit is based on the average number of habitat acres created or enhanced, and maintained per year.

3.1.2.1 Metric 1: Acres of Enrolled Sandhill Crane Habitat

To count toward the Performance Threshold, acres enrolled as forage and/or roosting habitat for Sandhill cranes must meet minimum habitat requirements, as described in CAPB section 4.1.1.

Implementation Milestone: During Program construction and prior to start of operations, the Program will be engaged in recruitment activities. 100% of land management agreements for 2,500 acres will be enrolled into the Program by:

- Program Year 1: 400 habitat acres will be enrolled into the Program.
- Program Year 3: 1,200 habitat acres will be enrolled into the Program.
- Program Year 5: 2,500 habitat acres will be enrolled into the Program.

Performance Threshold: Beginning in Program Year 10, a five-year average of 3,500 acres per year of Sandhill crane habitat, with a target of 700 roost acres, 2,800 forage acres will be enrolled in the Program and meet the habitat criteria, specified in CAPB Section 4.1.1.

3.1.2.2 Metric 2: Management of Enrolled Habitat

The Program will conduct an annual assessment of roosting and foraging management activities preformed on enrolled habitat acres and deliver irrigation water (September and October), and wintertime water (November through March), within the Program Water Delivery Area consistent with Section 2.1.1.2 in this Adaptive Management Plan and Section 4.1.1 of the CAPB. Land management activities, including water delivery, will commence consistent with acreage enrollment as described in Section 3.1.1.1 Metric 1 of this Adaptive Management Plan.

3.1.3 Monitoring Methodology

Monitoring will include assessment of landowner compliance with approved parcel-specific land management agreements, including assessment to ensure that ponded fields are maintained at proper depths to support Sandhill crane roosting and soil saturation conducive to Sandhill crane foraging. In addition, water levels in ponded fields will be monitored to ensure proper vector control management is implemented. Compliance will be documented by Program staff or consultants and conducted in cooperation with, and assistance from, the landowners. Documents will include key details that relate to crane use, such as winter season irrigation, timing of roost site ponding (by field), crop harvest timing, and timing of other crane habitat management activities.

Location: Dependent on location of enrolled acres. Monitoring of Sandhill crane habitat acres is parcel-specific and will be implemented according to the terms and conditions in the parcel-specific land management agreements.

Timing and frequency: Prior to Program operations, monitoring of pre-project baseline conditions of existing Sandhill crane habitat acreage will be conducted. Starting Year 1 of Program operations, monitoring and assessment of eligible habitat created and/or maintained by the Program will be conducted on an annual basis during the Sandhill crane wintering period to evaluate the number of roosting and foraging acres maintained per year according to the established Performance Thresholds. A post-season, annual review between landowners/managers and Program staff/consultants of how well the management plan was followed should include discussion of accomplishments of planned actions, and information about the response of Sandhill crane use in relation to planned actions.

3.1.4 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this document, the Program will provide the following information pertaining to specific Sandhill crane Benefit Implementation Activities:

Annual Report: The Program will report the number of acres enrolled and maintained as 1) roosting habitat or 2) foraging habitat, and the approximate volume of water delivered for maintenance of each habitat type consistent with Section 2.1.3. For roosting habitat, the Program will report a summary of the field types utilized, roost site size, location, timing, and

duration of field flooding for the year. For foraging habitat, the Program will report a summary of the types of agricultural fields enrolled and associated management practices utilized and water delivery timing. Executed land management agreements will also be provided.

Review Report: The Program will report the preceding five-year average annual acres enrolled associated with roosting and foraging habitat and describe the relative spatial distribution of the habitat types within the Water Delivery Area. The Program will summarize how well executed land management agreements were followed, specifically speaking to how well required flooding depths were achieved and for what duration depths were maintained, overall field types enrolled by crop and management activities employed and discuss any successes and/ or hurdles to benefit implementation.

3.1.5 Adaptive Management Triggers

Trigger for Adaptive Management: During the ramp-up period (Program Years 1 through 5), a trigger will occur if Sandhill crane habitat acres enrolled by the Program are below the milestone at the associated Program Year as described in Section 3.1.2.1. Starting Program Year 10, a trigger will occur if the five-year average of enrolled habitat acres is below 3,500 acres of Sandhill crane habitat meeting the habitat criteria specified in CAPB Section 4.1.1. or if acres enrolled do not include both roosting and foraging habitat types and / or if enrolled acres were not managed appropriately as defined in Section 2.1.1.2 in this document and Section 4.1.1 of the associated CAPB.

3.1.6 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the process described in Section 1.5. Adaptive Management actions for Sandhill cranes are aimed at increasing the Program acreage enrolled and effectively managed as either roosting or foraging habitat, as needed. These actions include:

1. Increase the number of acres under contract, consistent with Section 4.1.1 of the CAPB.
2. Implement incentives for participation.
3. Modify land management practices, consistent with Section 4.1.1 of the CAPB, to enhance Sandhill crane habitat.

3.2 COSUMNES RIVER BENEFIT

3.2.1 Benefit Objective

The Program will improve groundwater levels adjacent to the Cosumnes River through the in-lieu recharge of groundwater levels from the delivery of recycled water, which in turn will improve Cosumnes River streamflow rates and volumes. This additional flow is anticipated to provide an improvement in the annual average days with flows above 20 cfs at Twin Cities Road (connectivity flow days). The improved connectivity flow days will be beneficial for anadromous Chinook salmon and provide improved habitat for native resident fish and other aquatic organisms. Flows (and volumes) will be improved by an annual average of approximately 13,000 Acre Feet (AF) above modeled future baseline conditions at Twin Cities Road.

3.2.2 Monitoring Metrics and Performance Thresholds

Performance evaluation of the Cosumnes River benefit is based on two metrics: 1) the cumulative improvement in annual streamflow volume and 2) the improvement in nearby groundwater elevations.

3.2.2.1 Metric 1: Modeled Cumulative Volume of Additional Streamflow

Implementation Milestone: For this metric, a cumulative additional streamflow volume technique will be used. Every five years, the additional annual streamflow volume for the Cosumnes River modeled at Twin Cities Road resulting from the Program will be evaluated and added to the modeled additional streamflow volume from all previous years to get the cumulative total for that point in time. During the 15-year ramp-up period (Program Years 1-15 beginning with the first full year of Program operations), the Program will achieve milestones at 5-year increments for modeled cumulative streamflow volume improvements to the Cosumnes River at Twin Cities Road. During this 15-year ramp-up period, the modeled cumulative streamflow volume improvement at Twin Cities Road will be based on equaling or surpassing 6,000 Acre Feet a Year (AFY) (Table 1). Thus, by:

- Program Year 5: the Program will cumulatively improve Cosumnes River flow volumes by 30,000 AF.
- Program Year 10: the Program will cumulatively improve Cosumnes River flow volumes by 60,000 AF.
- Program Year 15: the Program will cumulatively improve Cosumnes River flow volumes by 90,000 AF.

Performance Threshold: Following Program Year 15, the same cumulative streamflow volume improvement technique will be used, but the assumed annual flow improvement at Twin Cities Road will be the modeled Program average of 13,000 AFY (instead of the 6,000 AFY used during the ramp-up period). This new estimated annual improvement will be added to the 90,000 AF used in Program Year 15 of the ramp-up period. For example, in Program Year 20 the modeled cumulative streamflow volume increase will equal or surpass 155,000 AF, and in Program Year 25 will equal or surpass 220,000 AF, and so on. This will continue in five-year increments for the term of the Contract (Table 1).

Table 2. Adaptive Management Triggers by Program Year for the Cosumnes River Benefit Metric 1 based on cumulative annual flow volume improvement at Twin Cities Road.

Program Year	Implementation Milestone/Performance Threshold (cumulative acre-feet of additional flow volume at Twin Cities)
5	30,000
10	60,000
15	90,000
20	155,000
25	220,000
30	285,000
35	350,000
40	415,000

3.2.2.2 Metric 2: Groundwater Elevations

Implementation Milestone: The Program will demonstrate improvement to groundwater elevations near the Cosumnes River through groundwater elevation monitoring at one or more representative shallow monitoring wells located between approximately 0.5 and 1 mile from the Cosumnes River. Monitoring well MW-7 will serve as the representative monitoring well unless the Parties mutually agree to use additional or different suitable well(s). In Program Years 1 through 10, the Program will monitor October groundwater elevations annually to establish an

improved, relatively stable elevation, which will allow for comparison to future elevations (comparison level) and show general trends of improvement. The Program will use the five-year average October groundwater elevation measured during Program Years 6-10 as the comparison level for which the Performance Threshold is evaluated. This five-year period is assumed to be representative of average hydrologic conditions and comparable to future five-year periods assumed to be representative of average hydrologic conditions. If multiple representative monitoring wells are used, then an average value across all representative wells will be used for the comparison level.

Performance Threshold: Starting Program Year 15 and continuing every five years thereafter, the five-year average October groundwater elevation measured at MW-7, or other representative monitoring well(s) if agreed by the Parties, will be at or above (shallower) than the comparison level established as the five-year average determined for Program Years 6-10.

3.2.3 Monitoring Methodology

The Program will use a mutually agreed upon model by the Program and the Department, with consideration for cost and value of information provided, to analyze the cumulative streamflow volume improvement to the Cosumnes River and improvements to shallow groundwater elevations near the Cosumnes River. Modeling methods are subject to review and change as new technologies and methods become more effective, efficient, or affordable. The current model used for the Program is the Sacramento Area Integrated Water Resources Model (SacIWRM). Modeled streamflow volumes and groundwater elevations will be compared to measured streamflow and measured groundwater levels to assist in verifying and, when necessary, recalibrating the model. A trend toward groundwater elevation improvement will be demonstrated through groundwater elevation measurements taken at MW-7. Should MW-7 become compromised, inaccessible, or deemed inaccurate, the Program and Department can agree to monitor a new well(s) through adaptive management.

3.2.3.1 Modeled Cumulative Streamflow Improvements

Estimating expected Cosumnes River streamflow benefits would be performed by identifying the following conditions near the Cosumnes River at Twin Cities Road, analyzed using SacIWRM, or other mutually agreed upon model by the Program and the Department, *with-* and *without-Program* using simulation years 43-84. SacIWRM or other mutually agreed upon model would then be used to assess program benefits over time compared to *without-Program* conditions.

Every five years the model would be updated to incorporate new hydrologic and water use conditions. *With-* and *without-Program* conditions would be simulated. *With-Program* conditions would be compared to field observations of groundwater and streamflow, with modifications made to the model as necessary to improve the match. Once a satisfactory simulation of *with-Program* conditions is completed, *without-Program* conditions would be simulated by removing the Program-related activities from the simulation. The *with-Program* and *without-Program* simulations would then be used to identify net improvement in streamflow conditions resulting from the Program.

3.2.3.2 Measuring Groundwater Levels Near the Cosumnes River

Monitoring well MW-7 is near the Cosumnes River and thought to be representative of shallow aquifer conditions within the Program Area.

Location: MW 7 is located at approximately (38.305 °N,121.391 °W) and is screened approximately 30-33 feet bgs.

Timing and frequency: Starting Program Year 1, monitoring of groundwater elevations MW- 7 will be conducted. In addition to MW-7, monitoring of groundwater elevations at appropriate locations near the Cosumnes River may occur to establish general trends within the area and used to help verify how well MW-7 represents overall conditions and groundwater elevation improvements and streamflow response. Monitoring of groundwater elevations at MW-7 will be conducted in the spring and fall annually.

3.2.4 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this Adaptive Management Plan, the Program will provide the following information pertaining to specific Cosumnes River Benefit Implementation Activities:

Annual Report: The Program will report the spring and fall groundwater elevations measured at MW-7 monitoring well.

Review Report: The Program will report the modeled five-year summation of additional streamflow added to the Cosumnes River as well as the cumulative total of water supplied by the Program to the River. Additionally, the Program will report the five-year average spring and fall groundwater elevation measured at MW-7 monitoring well and starting Program Year 15, will report the five-year average spring and fall elevation relative to the comparison level established.

3.2.5 Adaptive Management Triggers

Trigger for Adaptive Management: For Metric 1 Cumulative Volume of Additional Flow, the trigger for adaptive management will be assessed every five years through a modeling process. The modeling process will include updating the historical model to incorporate the most recent five years of hydraulic data or by accessing an updated model from others. The model will be validated through comparison of simulated and publicly available observed Cosumnes River streamflow (or stage where streamflow data are not available) and groundwater level data. If the match between simulated and observed values is not within accepted professional standards, then the model will be recalibrated to improve the match. A trigger will occur if the modeled cumulative flow improvement at Twin Cities Road is below the milestone at the associated Program Year as described in Section 3.2.2.1, evaluated every five years. The modeling assessment will be completed within six months of the end of the year being analyzed. For Metric 2 Groundwater Elevations, a trigger will occur starting Program Year 15 if the five-year average spring and fall groundwater elevation measured at MW-7 is below the comparison level established.

3.2.6 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the process described in Section 1.5. The potential adaptive management actions for the Cosumnes River flow benefit are aimed at increasing the amount of recycled water delivered to the Program area with the goal of increasing groundwater elevations and streamflow on the Cosumnes River. These actions include:

1. Increase enrollment into the recycled water delivery program, subject to overall water availability.
2. Increase amount of recycled water delivered (subject to overall water availability), especially in the time of the year when, and where, deliveries most enhance fall

streamflow volumes and rates.

3. Specifically target new enrollment in the recycled water delivery program along the Cosumnes corridor.
4. Eliminate any Regional San-controlled groundwater export until Performance Thresholds are achieved.

3.3 PASSIVE WETLAND AND RIPARIAN HABITAT BENEFIT

3.3.1 Benefit Objective

The Program's in-lieu groundwater recharge has the potential to increase both the quantity and quality of groundwater dependent ecosystems (GDE) including wetlands and riparian habitat throughout the Program's Groundwater Benefit Area. Plant species native to these GDEs are dependent on the presence of shallow groundwater to support mature vegetation and seedling establishment. The Program will enhance a total of 2,633 acres of passive wetlands and riparian habitat, supported by increased groundwater levels within at least 10 feet below ground surface (bgs) on managed and unmanaged lands within the Program Area.

3.3.2 Monitoring Metrics and Performance Thresholds

Performance evaluation will be based on the acres of wetland or riparian habitat receiving passive groundwater benefits to at least 10 ft bgs or higher (shallower) as a result of the Program.

3.3.2.1 Metric 1: Acreage of wetland and riparian habitat supported by groundwater levels within 10 ft bgs

Implementation Milestones: The Program will deliver irrigation and wintertime water consistent with Section 2.1. Accordingly, groundwater elevation improvements to within 10 ft bgs will occur, by:

- Program Year 5: 691 acres of existing wetland and riparian habitat will receive passive groundwater benefit improvements to within 10 ft bgs or higher (shallower).
- Program Year 10: 1,382 acres of existing wetland and riparian habitat will receive passive groundwater benefit improvements to within 10 ft bgs or higher (shallower).
- Program Year 15: 2,633 acres of existing wetland and riparian habitat will receive passive groundwater benefit improvements to within 10 ft bgs or higher (shallower).

Performance Threshold: Following Program Year 15, the Program will support 2,633 acres of passive wetlands and riparian habitat by elevating groundwater levels to within 10ft bgs or higher (shallower).

3.3.3 Monitoring Methodology

The Program will monitor groundwater elevations within the Program Area and keep detailed accounting of the number of wetland and riparian acres receiving passive groundwater benefits. Monitoring will be a combination of field assessments of habitat, remote sensing analysis, field measurements of groundwater levels, and model projections of the habitat acreage within the 10ft bgs groundwater area. The number of acres for passive benefits will be tracked and compared to the assessed future baseline condition established as the number of wetland and riparian acres achieving groundwater elevation levels of 10 ft bgs or higher (shallower) without-Program water delivery based on Scenario 2, 2030 climate change, years 43-84, and to the Program commitments identified in Section 4.1.3 of the CAPB.

The Program will use a model mutually agreed upon by the Program and the Department, with consideration for cost and value of information provided, to analyze extent of wetland and riparian habitat acres supported by groundwater elevation improvements. Modeling methods are subject to review and change as new technologies and methods become more effective, efficient, or affordable. The current model used for the Program is the Sacramento Area Integrated Water Resources Model (SacIWRM).

Location: Groundwater monitoring will occur within the Program Area at a total of approximately 18 existing and newly installed monitoring wells. Approximately ten monitoring wells will monitor depths of the aquifer typically accessed by agricultural production wells, sited across the Program area, for improvements in groundwater elevations. Approximately eight monitoring wells will monitor shallow aquifer conditions, with approximately five of those wells focused in the Cosumnes River corridor to monitor for improvements related to streamflow and ecosystem benefits, approximately two wells located in the western portion of the Program area to monitor for ecosystem benefits and agricultural waterlogging, and approximately one well located in the central portion of the Program area to monitor for overall shallow aquifer Program benefits and for agricultural waterlogging.

Timing and frequency: Groundwater level measurements will be taken monthly and may be taken manually or with automated pressure transducers. Groundwater elevation modeling will be completed within six months of the end of the year being analyzed.

3.3.4 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this document, the Program will provide the following information pertaining to specific Passive Wetland and Riparian Habitat Benefit Implementation Activities:

Annual Report: The Program will report the number of acres and their respective location, of wetland and riparian wetland habitats receiving groundwater elevation improvement benefits to within 10 ft bgs. Additionally, groundwater well monitoring data, field verification surveys, satellite imagery, or any other pertinent data collected to determine the acreage will be provided.

Review Report: The Program will provide the annual average number of acres receiving groundwater elevation improvements to within 10 ft bgs considering the preceding five years of data. They will also provide analysis showing the general trend of groundwater elevations within the Program's Groundwater Benefit Area as demonstrated through groundwater monitoring well measurements and Program modeling. Cumulative groundwater improvements as well as improvements relative to the water year types of the preceding five years, as defined by DWR's Bulletin 120, will be reported. Maps will be developed identifying the locations of the passive wetland and riparian habitat acres benefiting from groundwater level improvements.

If during the ramp-up period Implementation Milestones are missed as a result of restrictions placed on the Program by the State Water Board, Division of Water Rights Order approving Regional San's Wastewater Change Petition WW0092 limiting water deliveries in Dry and Critically Dry water years and Shasta critical cutback years, the Program shall report this in the Review Report and Adaptive Management Actions will not be triggered.

3.3.5 Adaptive Management Triggers

Performance evaluation will be based on the number of acres of wetland and riparian habitat supported by passive groundwater benefits (i.e., groundwater elevations improved to within 10 feet bgs) resulting from Program implementation.

Trigger for Adaptive Management: A trigger is defined as the number of wetland and riparian habitat acres receiving passive groundwater benefits below the milestone at the associated Program year. Starting Program Year 20, the five-year average of total wetland and riparian habitat acres receiving passive groundwater benefits as a result of the Program is below 2,633 acres.

3.3.6 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the process described in Section 1.5. Potential adaptive management actions for passive wetland and riparian habitat involve water delivery for other facets of the Program that allow for the benefits of an elevated groundwater table to accrue. Adaptive management actions include:

1. Increase irrigation water delivery (subject to overall water availability).
2. Increase winter water delivery (subject to overall water availability).
3. Eliminate any Regional San-controlled groundwater export until 10 feet bgs groundwater elevations are achieved to support 2,633 acres of passive wetland.

3.4 ACTIVE WETLAND BENEFIT

3.4.1 Benefit Objective

Wetlands are an important facet of California's Central Valley for an abundance of native species including breeding waterfowl, the federally and state-listed giant garter snake, and an array of plant species that depend on this type of habitat. The Program's recycled water delivery has the potential to increase both the quantity and quality of wetlands throughout the Program Area.

The Program will create, restore, or enhance a total of 1,300 acres of active wetland habitat within the Program Area through increased groundwater levels of 10 feet bgs or higher (shallower) or through delivery of recycled water for the Program life, management via landowner agreement, and protection via long-term agreements that are agreed upon by the Department and Regional San, easement, or fee title. All active wetland acres enrolled in the Program will have associated parcel-specific management plans that include details of improvements needed to implement management objectives. These management plans will be either internal or external agreements or contracts, prescribing agreed upon terms for the management of acres enrolled under the active wetland benefit. Management strategies will include delivery of recycled water for acres outside of the Program's Groundwater Benefit Area and land management activities such as invasive weed control, plantings, and/or protection from herbivory.

3.4.1 Monitoring Metrics and Performance Thresholds

Performance evaluation will be based on the number of wetland acres benefitting from water support either from direct recycled water delivery or groundwater elevation improvements to within 10 ft bgs and active habitat management.

3.4.1.1 Metric 1: Enrolled Acreage of Active Wetlands

To count toward the Performance Threshold, wetland acres enrolled for active management

must meet the habitat criteria established in Section 4.1.4 of the associated CAPB and described in the active wetland benefit-specific land management agreement [Exhibit C]. Each land management agreement will specify habitat management criteria for the active wetland benefit (e.g., irrigation needs, native species plantings, etc.) specific to the acreage enrolled.

Performance Threshold: Starting Program Year 10, the Program will manage and maintain 1,300 protected active wetland acres.

3.4.1.2 Metric 2: Water Support to Active Wetlands

Active wetland vegetation will be supported by delivery of Program water until underlying groundwater elevations reach 10 ft bgs or higher (shallower), or for term of the Contract.

Performance Threshold: Consistent with Section 3.4.1 Metric 1, by the end of Program Year 10, the Program will supply water to all 1,300 acres by direct delivery or groundwater elevation improvements to 10 ft bgs or higher (shallower).

3.4.1.3 Metric 3: Active Management of Enrolled Habitat

The Program will conduct an annual assessment of management activities performed on enrolled habitat acres consistent with Section 2.1.1.2 in this Adaptive Management Plan and Section 4.1.1 of the associated CAPB. Land management activities, including water delivery, will commence consistent with acreage enrollment as described in Section 3.4.1 Metric 1.

3.4.2 Monitoring Methodology

The Program will monitor compliance with parcel-specific management plans and account for the number of enrolled acres receiving active groundwater benefits and/or direct application of Program water, and land management activities. The number of protected active wetland habitat acres will be tracked and compared to the Program objectives identified in Section 4.1.5 of the CAPB. Maps will be developed for the locations of the active wetland acres receiving land management activities. For acres within the Program's Groundwater Benefit Area, the Program will monitor groundwater elevations consistent with Section 3.3.3 of this Adaptive Management Plan.

Location: Monitoring is parcel-specific and will be implemented within the Program Area according to the terms and conditions in the parcel-specific land management agreements.

Timing and frequency: Monitoring and assessment of eligible wetland habitat created and/or enhanced by the Program will be conducted on an annual basis. An annual review between landowners/managers and Program staff/consultants of how well the land management plan was followed should include discussions of accomplishments of management activities and information about the wetland habitat condition.

3.4.3 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this Adaptive Management Plan, the Program will provide the following information pertaining to specific Active Wetland Benefit Implementation Activities:

Annual Report: The Program will report the acreage enrolled 1) receiving water delivery and 2) benefiting from groundwater elevation improvements. A summary of active land management activities (i.e., acres receiving native plantings, invasive weed management, and or browsing control actions) will also be provided with results of the Program's land management plan

implementation annual review. Executed land management agreements will also be provided.

Review Report: The average annual acreage receiving 1) water delivery and 2) groundwater benefits in the preceding five years will be reported along with a breakdown of accompanying active land management activities. For each land management activity employed, the Program will report on the success rate of implementation (e.g., percentage survival rate of native plantings, percentage of invasive species removed per acre, effectiveness of browse control actions) and discuss any accomplishments or shortfalls. Services Agreements relative to active management activities will be provided with identification of any proposed changes.

3.4.4 Adaptive Management Triggers

Trigger for Adaptive Management: Starting Program Year 15, the five-year average of total enrolled and protected wetland acres receiving water supply and active management is below 1,300 acres.

3.4.5 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the process described in Section 1.5. Potential adaptive management actions for active wetland habitat involve changes to water delivery, enrollment of wetland acres for active management, and adjustments to land management practices. Adaptive management actions include:

1. Increase delivery of water directly to actively managed wetland acres (subject to overall water availability).
2. Increase the number of contracted/protected acres, consistent with Section 4.1.4 of the CAPB.
3. Implement reasonable and feasible incentives for participation.
4. Increase and/or change active management strategies employed, consistent with Section 4.1.4 of the CAPB.

3.5 ACTIVE RIPARIAN BENEFIT

3.5.1 Benefit Objective

Over 90% of riparian ecosystems in the Central Valley have been lost or modified. These ecosystems provide tremendous value in many forms such as providing habitat for a variety of plant and wildlife species, flood control, and water quality improvements. The Program's in-lieu groundwater recharge and active recycled water delivery, coupled with active land management practices, has the potential to increase both the quantity and quality of riparian forests throughout the Program Area.

The Program will create, enhance, or restore a total of 500 acres of riparian habitat that are supported by increased groundwater elevations to 10 feet bgs or higher (shallower) and/or by direct water delivery, as needed, to vegetation for the Term of the Contract or until groundwater is within 10 feet bgs and supportive of native vegetation. In addition, these acres will receive active land management strategies, and will be protected through a conservation easement or equivalent that is approved by the Department. All active riparian acres enrolled in the Program will have associated parcel-specific management plans, that include details of improvements needed to implement management objectives. These management plans will be either internal or external agreements or contracts that prescribe agreed upon terms for the management of acres enrolled under the active riparian benefit. Management strategies may include delivery of recycled water and land management activities including weed control, plantings, and protection

from herbivory.

3.5.2 Monitoring Metrics and Performance Thresholds

Performance evaluation will be based on the number of protected riparian habitat acres benefitting from 1) elevated groundwater levels and/or 2) direct recycled water application and receiving active management techniques consistent with criteria described in Section 4.1.5 of the associated CAPB.

3.5.2.1 Metric 1: Active Riparian Habitat Acres

To count toward the Performance Threshold, riparian habitat acres enrolled for active management must meet the habitat criteria described in the benefit-specific land management agreement [Exhibit C]. Specific parcel land management agreements will specify habitat management criteria for all acres of the active riparian benefit enrolled (e.g., irrigation needs, distance from an existing water body, native species plantings, etc.).

Performance Threshold: Starting Program Year 10, the Program will enroll, actively manage, and protect 500 active riparian habitat acres.

3.5.2.2 Metric 2: Water Support for Active Riparian Benefit

Active riparian forest vegetation will be supported by delivery of Program water until underlying groundwater elevations reach 10 ft bgs or higher (shallower), or for the Term of this Contract.

Performance Threshold: Consistent with Section 3.5.2 Metric 1, Starting in Program Year 10, the Program will provide water supply to all 500 acres by direct delivery or groundwater elevation improvements to 10 ft bgs or higher (shallower).

3.5.2.3 Metric 3: Active Management of Enrolled Acres

The Program will conduct an annual assessment of management activities preformed on enrolled habitat acres consistent Section 4.1.5 of the associated CAPB. Land management activities, including water delivery, will commence consistent with acreage enrollment as described in Section 3.5.2 Metric 1.

3.5.3 Monitoring Methodology

The Program will monitor compliance with land management plans and account for the number of enrolled acres receiving 1) passive groundwater benefits and/or 2) direct application of Program water, and land management activities. The number of acres for active riparian habitat protection will be tracked and compared to the Program objectives. Maps will be developed for the locations of the activities, as well as graphical comparison of the expected versus the achieved Program objectives on an individual water year and on a cumulative basis.

Location: Monitoring is parcel-specific and will be implemented according to the terms and conditions in the parcel-specific land management agreements. Accounting of water delivery method and approximate volume will be achieved consistent with Section 2.1.

Timing and frequency: Monitoring and assessment of eligible riparian habitat acreage created and/or enhanced by the Program will be conducted on an annual basis. An annual review between landowners/managers and Program staff/consultants of how well the land management plan was followed should include discussions of accomplishments of management activities and information about the riparian habitat condition.

3.5.4 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this document, the Program will provide the following information pertaining to specific Active Riparian Benefit Implementation Activities:

Annual Report: The Program will report the acreage enrolled 1) receiving water delivery and 2) benefiting from groundwater elevation improvements. A summary of active land management activities (i.e., acres receiving native plantings, invasive weed management, and or browning actions) will also be provided with executed land management agreements and results of the Program's land management plan implementation annual review.

Review Report: The average annual acreage receiving 1) water delivery and 2) groundwater benefits in the preceding five years will be reported along with a breakdown of accompanying active land management activities. For each land management activity employed, the Program will report on the success rate of implementation (e.g., percentage survival rate of native plantings, percentage of invasive species removed per acre, effectiveness of browse control actions) and discuss any accomplishments or shortfalls. Services Agreements relative to active management activities will be provided with identification of any proposed changes.

3.5.5 Adaptive Management Triggers

Trigger for Adaptive Management: Starting Program Year 15, the five-year average of total enrolled and protected active riparian acres receiving water supply and active management is below the 500 acres.

3.5.6 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the process described in Section 1.5. Potential adaptive management actions include:

1. Increase delivery of water directly to actively managed riparian acres (subject to overall water availability).
2. Increase the number of contracted/protected acres, consistent with Section 4.1.5 of the CAPB.
3. Implement reasonable and feasible incentives for participation.
4. Increase intensity or change active management strategies employed, consistent with criteria identified in the CAPB Section 4.1.5.

3.6 VERNAL POOL COMPLEX BENEFIT

3.6.1 Benefit Objective

California's vernal pool complexes are considered an endangered ecosystem as a result of land conversion and development. The objective of the vernal pool complex benefit is to permanently protect and enhance 353 acres of vernal pool complex habitat and maintain habitat functionality through targeted land management activities. Specifically, the Program intends to influence vernal pool complex habitat through the management of annual grasses using cattle grazing strategies.

3.6.2 Monitoring Metrics and Performance Thresholds

Performance evaluation of the vernal pool complex benefit will be based on the number of acres permanently protected by the Program and management in support of increased vernal pool

complex functionality.

3.6.2.1 Metric 1: Vernal Pool Complex Acres

To count toward the performance threshold, vernal pool complex acres must be enrolled into the Program and permanently protected or working toward protection and receive water support from the Program consistent with criteria described in Section 2.1.

Performance Threshold: Starting Year 5 following the execution of the Funding Agreement, 353 acres of permanently protected vernal pool complex managed to support increased vernal pool complex functionality.

3.6.2.2 Metric 2: Vernal Pool Complex Residual Dry Matter (RDM)

Annual grasses are best measured through a technique that assesses the intensity of grazing (# of animals, time and timing of grazing, and vegetation precipitation response), known as residual dry mater (RDM). RDM assesses the amount of plant material left on the ground at the beginning of a new growing season, effectively indicating the previous season's forage production and its consumption by grazing animals. Properly managed RDM can provide protection from soil erosion and nutrient loss and inform grazing management strategies.

Implementation Milestone: Achievement of RDM levels on all parcels at or below 1,000 pounds per acre by Program Year 5.

Performance Threshold: A five-year average annual RDM level at or below 1,000 pounds per acre starting in Program Year 10.

3.6.3 Monitoring Methodology

Vernal pool complex acres enrolled in the Program are privately owned acres that will require agreements with landowners concerning property conservation and grazing management. Monitoring enrollment will focus on verifying the terms of these agreements are followed.

Location: RDM monitoring will be parcel-specific and will be implemented according to the terms and conditions in the parcel-specific land management agreements.

Timing and frequency: RDM monitoring will be conducted on an annual basis. A post-season review between landowners/managers and Program staff/consultants of how well the cattle grazing land management plan was followed should include discussions of accomplishments of management activities and information about the vernal pool habitat condition.

3.6.4 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this document, the Program will provide the following information pertaining to specific Vernal Pool Complex Benefit Implementation Activities:

Annual Report: The Program will report the acreage enrolled and protected and present any successes and or difficulties encountered while implementing cattle grazing land management plans. Executed land management agreements will be provided.

Review Report: The Program will describe grazing strategies employed including approximate volumes of water delivered for grazing consistent with Section 2.1, and average RDM monitoring results for the preceding five years. A summary of the preceding five years

successes and or challenges with implementation of grazing management plans will be provided along with any proposed change to ongoing management strategies employed (e.g., changes to RDM targets, grazing strategies, water supply).

3.6.5 Adaptive Management Triggers

Program evaluation will be based on the annual average of acres permanently protected by the Program and managed for the enhancement or maintenance of vernal pool complex habitat.

Trigger for Adaptive Management: For Metric 1, the total acres of protected and managed vernal pool complex habitat are less than 353. For Metric 2, starting Program Year 10, the 5-year average annual RDM level is above 1,000 pounds per acre.

3.6.6 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the process described in Section 1.5. The potential vernal pool complex adaptive management actions involve increasing land management activities of acreage enrolled in the Program. These include:

1. Increase acres of permanently protected vernal pool complex habitat, consistent with Section 4.1.6 of the CAPB.
2. Adjust RDM targets and or grazing strategies.
3. Implement a focal weed management program.

SECTION 4 ADAPTIVE MANAGEMENT OF BENEFIT ENVIRONMENTAL RESPONSES

4.1 SANDHILL CRANE BENEFIT

4.1.1 Benefit Environmental Response

The goal of the Sandhill crane benefit is to provide additional foraging and roosting Sandhill crane habitat, anticipated to support an average of 700 additional cranes through the practices of winter field flooding and agricultural/crop management. It is recognized that wintering crane numbers within the Program Water Delivery Area will be influenced by factors beyond the control of the Program including stressors on breeding grounds, population response to climate change, pathogenic disease impacts, and surrounding land uses.

4.1.2 Monitoring Metrics and Performance Thresholds

Benefit Environmental Response evaluation is based on Sandhill crane use of the habitat created or enhanced and maintained by the Program.

4.1.2.1 Metric 1: Average Number of Crane Utilizing Roosting and Foraging Habitat

Performance Threshold: Starting Program Year 15, Program habitat (roosting and foraging) will support an annual average of 700 Sandhill cranes, based on the preceding five years of monitoring.

4.1.3 Monitoring Methodology

Monitoring shall include observational assessment of Sandhill crane response to Program created forage and roosting habitat through dusk or dawn crane counts, using established methods. For each survey, the following information should be recorded for the roost or forage habitat unit: observer's name, date, time, flock tally or total count, and roost or forage habitat type (e.g., seasonal wetland, flooded corn field, etc.), and habitat management conditions. Survey start time and general weather conditions, including temperature, should be recorded at

the beginning of surveys.

Location: Monitoring of Sandhill crane occupancy of roosting and foraging habitat shall occur on parcels within the Program Water Delivery Area with enrolled acreage for the benefit.

Timing and frequency: Formal survey efforts of roosting and foraging sites should be initiated during the last half of September and continued through mid-March. During this period, monitoring of roosting and foraging sites will be conducted every year, in monthly intervals when Sandhill cranes are expected to be present. If surveys indicate a positive crane response to habitat for consecutive years, the survey frequency may be reduced to a mutually agreed schedule by the Program and Department.

4.1.4 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this document, the Program will provide the following information pertaining to anticipated Sandhill crane Benefit Ecosystem Response:

Annual Report: The Program will report the number of crane utilizing 1) forage and 2) roosting habitat created or enhanced and maintained by the Program through management agreements.

Review Report: The Program will provide average annual crane usage statistics for the preceding five years, identifying the type of habitat utilized.

4.1.5 Adaptive Management Triggers

Trigger for Adaptive Management: Starting Program Year 15, the five-year average number of Sandhill crane utilizing the Program habitat is below 700.

4.1.6 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the process described in Section 1.5. The potential adaptive management actions for maximizing Sandhill cranes use of habitat are aimed at adjusting habitat available for Sandhill crane use. These actions include:

1. Adjustment to the ratio of forage vs roosting habitat acres supported by the Program.
2. Adjustment to the timing, frequency, and or duration of habitat flooding, subject to overall water availability.
3. Adjustments to agricultural management agreements for forage.

4.2 COSUMNES RIVER BENEFIT

4.2.1 Benefit Environmental Response

During the fall-run Chinook salmon migration period (October to December), fish passage through the lower Cosumnes River is limited by reduced instream flow causing decreased stream connectivity. A minimum instream flow of approximately 20 cfs (0.57 m^3/s) would increase stream connectivity helping to aid in and expand Chinook salmon migration. The in-lieu recharge of groundwater levels due to the delivery of recycled water will improve Cosumnes River flows, providing an average annual improvement of 31 days with flows ≥ 20 cfs, and 11 days with connectivity flow ≥ 20 cfs between October and December compared to future baseline conditions, as modeled, and measured at Twin Cities Road.

4.2.2 Monitoring Metrics and Performance Thresholds

Benefit Environmental Response evaluation will be based on the modeled and measured number of additional days with baseflow volumes in the Cosumnes River equal to or in excess of 20 cfs.

4.2.2.1 Metric 1: Modeled Additional Days with Connectivity Flow

Performance Threshold: The same cumulative improvement technique will be used here as is used in Section 3.2.2.1. Each year, the additional days with ≥ 20 cfs flow at Twin Cities Road (additional days with connectivity flow) will be calculated and added to the additional days from all of the previous years to get the cumulative total for that year. Starting Program Year 15, the assumed annual days with connectivity flow improvement at Twin Cities Road ≥ 20 cfs is 30, the modeled Program average of 11 additional days will be added subsequently to this value each five years, consistent with targets identified in Table 2. This will continue for the term of the Contract.

Table 3. Adaptive Management Triggers by Program Year for the Cosumnes River Benefit Environmental Response based on modeled cumulative annual days with connectivity flow improvement October to December at Twin Cities Road.

Program Year	Implementation Milestone/Performance Threshold (cumulative additional days with 20+ cfs flow Oct-Dec at Twin Cities)
15	30
20	85
25	140
30	195
35	250
40	305

4.2.3 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this document, the Program will provide the following information pertaining to anticipated Cosumnes River Benefit Ecosystem Response:

Review Report: The Program will provide modeled analysis of with and without-Program baseflow improvements to the Consumes River, specifically identifying the number of days in the previous five years and the cumulative number of days at or above 20 cfs as modeled at Twin Cities Road.

4.2.4 Adaptive Management Triggers

Through model simulation, the number of days with measured connectivity flow ≥ 20 cfs will be compared to future baseline conditions and the Performance Threshold.

Trigger for Adaptive Management: The cumulative additional number of days with flow ≥20 cfs October through December at Twin Cities Road is below the corresponding Program Year (Table 2), analyzed every five years.

4.2.5 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the process described in Section 1.5. All potential adaptive management actions for the Cosumnes River flow benefit

are aimed at increasing groundwater elevation and decreasing water loss from the Cosumnes River. These actions include:

1. Increase enrollment in the recycled water delivery program (subject to overall water availability).
2. Increase amount (and/or modify location) of recycled water delivered, especially in the time of the year when deliveries most enhance fall streamflow volumes and rates (subject to Program water delivery limits).
3. Specifically target new enrollment in the recycled water delivery program along the Cosumnes corridor.
4. Eliminate any Regional San-controlled groundwater extraction until Performance Thresholds are achieved.

4.3 PASSIVE WETLAND AND RIPARIAN HABITAT BENEFIT

4.3.1 Benefit Environmental Response

The goal of the passive wetland and riparian benefit is to uplift and improve the functionality of these habitats through elevated groundwater levels. Functionality of these habitats is anticipated to be improved by 10% as measured by modified California Rapid Assessment Method (CRAM).

4.3.2 Monitoring Metrics and Performance Thresholds

Benefit Environmental Response evaluation will be based on the measured ecological functionality of passive wetland and riparian habitat acres enrolled.

4.3.2.1 Metric 1: Passive Wetland and Riparian Habitat Functionality

Performance Threshold: Starting Program Year 20, 2,633 acres enrolled will demonstrate an improvement of 10% in their modified CRAM score, as compared to pre-project baseline.

4.3.3 Monitoring Methodology

Monitoring should demonstrate functional improvement of wetland and riparian habitat where groundwater elevations are improved to within 10 ft bgs. Changes in wetland functionality will be measured and analyzed to evaluate program performance, responses to adaptive management actions, and benefit maintenance over time. Passive wetland and riparian functionality will be assessed through modified CRAM. CRAM is a rapid, qualitative, yet standardized approach that produces a functional assessment score for each surveyed wetland on a scale of 0 to 100. Remote sensing monitoring strategies will also be used to track wetland habitat trends to complement modified CRAM. An equivalent ecological index may be used instead of CRAM if mutually agreed to by the Regional San and the Department.

This modified CRAM assessment will be conducted through observation of the following attributes: (1) buffer and landscape context, (2) hydrology, (3) physical structure, and (4) biotic structure (Table 3). Each of these attributes is evaluated using the general metrics identified, whereby scoring correlates field observations to a value defined from a list of descriptive narrative conditions for each metric and metric scores are compiled into numerical score for each attribute. Modified CRAM assessments also identify key stressors that may be affecting condition, and accounts for potential low scores.

Table 3 – Modified CRAM attributes and metrics

Attribute	Metrics
Buffer and landscape context	Aquatic area abundance or stream corridor continuity
Hydrology	Hydrologic connectivity
Biotic Structure	% invasion
	Endemic species richness
	Horizontal interspersion
	Number of co-dominant species
	Number of plant layers
	Vertical biotic structure
Physical Structure	Structural patch richness
	Topographic complexity

Location: Representative monitoring sites mutually agreed on between the Program and Department will be used to generate modified CRAM scores demonstrative of the specific habitat types they characterize.

Frequency and timing: Pre-project baseline modified CRAM scores will be established for representative monitoring sites prior to Program Year 15. CRAM surveys should take place during the growing season. Starting Program Year 15, modified CRAM scores will be obtained annually during the growing season, with an option to reduce monitoring frequency once trends are established if mutually agreed upon by the Program and Department.

4.3.4 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this document, the Program will provide the following information pertaining to anticipated Passive Wetland and Riparian Habitat Benefit Ecosystem Response:

Annual Report: The Program will report the classification of enrolled habitat acres, for which a representative monitoring site is demonstrative, along with the results of the measured modified CRAM scores for the representative sites.

Review Report: The Program will report average modified CRAM scores for the representative monitoring sites mutually agreed upon by the Program and Department, during the preceding five years. Maps depicting the location of each representative monitoring site, and all acres enrolled in the Program characteristic of its associated representative monitoring site. Average percentage improvements, calculated as the difference between the pre-project baseline modified CRAM and the five-year average CRAM score as a percentage of the pre-project baseline modified CRAM, for habitat enrolled will also be provided.

4.3.5 Adaptive Management Triggers

Trigger for Adaptive Management: Starting Program Year 20, the five-year average modified CRAM score is below 10% improvement as a percentage of the associated pre-project baseline modified CRAM scores for any representative site of passive wetland and riparian acres.

4.3.6 Management Actions

If evaluation of the modified CRAM score improvements reach an Adaptive Management

Trigger, decision-making shall follow the process described in Section 1.5. All potential adaptive management actions for the Passive Wetland and Riparian Habitat benefit are aimed at adjusting groundwater elevation improvements. These actions include:

1. Increase in-lieu irrigation water delivery (subject to overall water availability).
2. Increase winter water delivery (subject to overall water availability).

4.4 ACTIVE WETLAND BENEFIT

4.4.1 Benefit Environmental Response

The goal of the active wetland benefit is to uplift and improve the functionality of wetland habitats created, enhanced, or restored by the Program through water supply, and land management activities such as invasive weed management, native species plantings, and browse control. The Program's aims to improve modified CRAM scores or equivalent ecological index if mutually agreed upon by the Program and the Department, by 10% on lands protected and managed by entities other than the Program (e.g., Cosumnes River Preserve and Stone Lakes NWR) and 50% on lands not previously managed as a percentage of pre-project baseline modified CRAM scores.

4.4.2 Monitoring Metrics and Performance Thresholds

Performance evaluation will be based on the measured ecological functionality of active wetland habitat acres enrolled.

4.4.2.1 Metric 1: Active Wetland Functionality

Performance Threshold: Starting Program Year 15, 1,300 acres enrolled and managed by the Program will demonstrate an improvement of 10% in their modified CRAM score for lands protected and managed by entities other than the Program (e.g., Cosumnes River Preserve and Stone Lakes NWR) and 50% on lands not previously managed, as a percentage of pre-project baseline modified CRAM scores.

4.4.3 Monitoring Methodology

Monitoring should demonstrate functional improvement of actively managed wetland habitat. Changes in wetland functionality will be measured and analyzed to evaluate program performance, responses to adaptive management actions, and benefit maintenance over time. Wetland functionality will be assessed through modified CRAM consistent with the methodology described in Section 4.3.3. Remote sensing monitoring strategies will also be used to track wetland habitat trends to complement modified CRAM measurements.

Location: Representative monitoring sites mutually agreed on between the Program and Department will be used to generate modified CRAM scores demonstrative of the specific habitat types they characterize.

Frequency and timing: Modified CRAM surveys should take place during the growing season. Pre-project baseline modified CRAM scores will be established for representative monitoring sites prior to the implementation of Program management. Following pre-project baseline establishment, modified CRAM scores will be obtained annually during the growing season, with an option to reduce monitoring frequency once trends are established if mutually agreed upon by the Program and Department.

4.4.4 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of

this document, the Program will provide the following information pertaining to anticipated Active Wetland Habitat Benefit Ecosystem Response:

Annual Report: The Program will report the classification of each enrolled habitat acre, for which a representative monitoring site is demonstrative, along with the results of the measured modified CRAM scores for the representative sites.

Review Report: The Program will report average modified CRAM scores for the representative monitoring sites mutually agreed upon by the Program and Department, during the preceding five years. Maps depicting the location of each representative monitoring site, and all acres enrolled in the Program characteristic of its associated representative monitoring site.

4.4.5 Adaptive Management Triggers

Trigger for Adaptive Management: Starting Program Year 15, if the five-year average modified CRAM score is below 10% improvement as a percentage of the associated pre-project baseline CRAM scores for acres managed within lands already protected by other entities (i.e., Cosumnes River Preserve and Stone Lakes NWR) and below 50% for acres protected and managed by the Program.

4.4.6 Management Actions

If evaluation of modified CRAM score improvements reach an Adaptive Management Trigger, decision-making shall follow the process described in Section 1.5. Potential adaptive management actions for active wetland are aimed at increasing ecosystem functionality on enrolled actively managed acres, as measured via modified CRAM. Adaptive management actions include:

1. Increase delivery of water directly to actively managed wetland acres (subject to overall water availability).
2. Increase native species plantings or replanting, consistent with Section 4.1.4 of the CAPB.
3. Increase invasive species control actions, consistent with Section 4.1.4 of the CAPB.
4. Increase browse contract actions, consistent with Section 4.1.4 of the CAPB.

4.5 ACTIVE RIPARIAN BENEFIT

4.5.1 Benefit Environmental Response

The Program aims to create, restore, or enhance riparian habitat through elevated groundwater levels and/or direct application of recycled water to vegetation, and land management strategies such as invasive weed management, native species plantings, and browsing protection. It is anticipated that active riparian habitat acres will achieve a minimum modified CRAM score of 70.

4.5.2 Monitoring Metrics and Performance Thresholds

Monitoring Performance evaluation will be based on the measured ecological functionality of active riparian habitat acres.

4.5.2.1 Metric 1: Active Riparian Habitat Functionality

Performance Threshold: Starting Program Year 15, 500 acres enrolled and managed by the Program will achieve a modified CRAM score of 70 or better.

4.5.3 Monitoring Methodology

Monitoring should demonstrate functional improvement of actively managed riparian habitat. Changes in riparian functionality will be measured and analyzed to evaluate program performance, responses to adaptive management actions, and benefit maintenance over time. Riparian functionality will be assessed through modified CRAM consistent with the methodology described in Section 4.3.3. Remote sensing monitoring strategies will also be used to track riparian habitat trends to complement modified CRAM.

Location: Representative monitoring sites mutually agreed on between the Program and Department will be used to generate CRAM scores demonstrative of the specific habitat types they characterize.

Frequency and timing: Modified CRAM surveys should take place during the growing season. Pre-project baseline modified CRAM scores will be established for representative monitoring sites prior to the implementation of Program management. Following the establishment of pre-project baseline, modified CRAM scores will be obtained annually during the growing season for acres enrolled and actively managed by the Program, with an option to reduce monitoring frequency once trends are established to a mutually agreed upon frequency by the Program and Department.

4.5.4 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this document, the Program will provide the following information pertaining to anticipated Active Riparian Habitat Benefit Ecosystem Response:

Annual Report: The Program will report the classification of each enrolled habitat acre, for which a representative monitoring site is demonstrative, along with the results of the measured modified CRAM scores for the representative sites.

Review Report: The Program will report average modified CRAM scores for the representative monitoring sites mutually agreed upon by the Program and Department, during the preceding five years. Maps depicting the location of each representative monitoring site, and all acres enrolled in the Program characteristic of its associated representative monitoring site.

4.5.5 Adaptive Management Triggers

Trigger for Adaptive Management: Beginning Program Year 15*,* the five-year average modified CRAM score is below 70.

4.5.6 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the process described in Section 1.5. Adaptive Management actions for active riparian habitat are aimed at increasing ecosystem functionality on enrolled actively managed acres, as measured via modified CRAM. Adaptive management actions include:

1. Increase delivery of water directly to actively managed riparian acres (subject to overall water availability).
2. Increase native species plantings or replanting, consistent with Section 4.1.5 of the CAPB.
3. Increase invasive species control actions, consistent with Section 4.1.5 of the CAPB.

4. Increase browse contract actions, consistent with Section 4.1.5 of the CAPB.

4.6 VERNAL POOL COMPLEX BENEFIT

4.6.1 Benefit Environmental Response

The Program will maintain or enhance the condition of the vernal pool complex habitat as assessed by modified CRAM, through permanent protection of existing habitats and grazing management strategies. This will be achieved by implementation of conservation easement or obtaining fee title and cooperative grazing plans for three properties (353 acres) within in the Program Area to protect vernal pool complex habitat from future conversion to agricultural or urban uses.

4.6.2 Monitoring Metrics and Performance Thresholds

Monitoring Performance evaluation will be based on the measured ecological functionality of vernal pool complex acres including the average number of wetted acres.

4.6.2.1 Metric 1: Wetted Acres

Performance Threshold: Starting Year 10 following the Funding Agreement, a five-year average of at least 50 wetted venal pool acres measured within the 353 acres of vernal pool complex.

4.6.2.2 Metric 2: Vernal Pool Complex Functionality

Performance Threshold: Starting Year 10 following the Funding Agreement, the Program will maintain a five-year average modified CRAM score equivalent to or better than the pre-project baseline score established as the average score measured during Years 1 through 5 following acreage enrollment.

4.6.3 Monitoring Methodology

Monitoring should demonstrate maintenance or improvement of vernal pool complex habitat. Vernal pool complex functionality will be measured and analyzed to evaluate program performance, responses to adaptive management actions, and benefit maintenance over time. Vernal pool complex functionality will be assessed through modified CRAM consistent with the methodology described in Section 4.3.3.

Location: Modified CRAM monitoring will be conducted in each parcel of vernal pool complex habitat enrolled within the Program Area.

Timing and Frequency: Starting Year 1 following the acreage enrollment, modified CRAM scores will be obtained annually during the growing season on all parcels enrolled, with an option to reduce monitoring frequency once pre-project baseline scores have been established and subsequent trends observed, if mutually agreed upon by the Program and Department.

4.6.4 Reporting Components

Consistent with, and in addition to, items identified in the CAPB Section 4.3.1 and Section 1.6 of this AMP, the Program will provide the following information pertaining to anticipated Vernal Pool Complex Habitat Benefit Ecosystem Response:

Annual Report: The Program will report wetted acreage and modified CRAM scores for acres enrolled and supported by Program activities.

Review Report: The Program will report average wetted acreage and modified CRAM scores for

acres enrolled and supported by Program activities during the preceding five years. A comparison of the preceding five-year average modified CRAM score to the baseline modified CRAM score (established Years 1 through 5 following the Funding agreement) for each parcel enrolled, will also be provided.

4.6.5 Adaptive Management Triggers

Trigger for Adaptive Management: Starting Year 10 following the Funding Agreement, if the five-year average modified CRAM score is below that of pre-project baseline conditions (established as the average modified CRAM score measured in Years 1 through 5), or the average wetted acreage is less than 50 then adaptive management actions will be triggered.

4.6.6 Management Actions

If an Adaptive Management Trigger occurs, decision-making shall follow the process described in Section 1.5. Adaptive management actions are aimed at increasing ecosystem functionality on enrolled acres, as measured using modified CRAM. These include:

1. Change RDM targets or modify grazing strategies employed to improve pool connectivity, supplement and or support hydraulic conditions.
2. Provide invasive species control actions.