

**CALIFORNIA WATER COMMISSION**

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May 25, 2018

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South County Ag Program

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Member

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**Joseph Byrne**  
Member

Dear Ms. Mitchell:

**Daniel Curtin**  
Member

**Joe Del Bosque**  
Member

Attached please find the Water Storage Investment Program technical review for the South County Ag Program. The technical review contains the preliminary application scores and related reviewer comment. Additional documents including California Department of Fish and Wildlife and State Water Board Relative Environmental Value reviews and public benefit findings of the Department of Fish and Wildlife, Department of Water Resources, and State Water Resources Control Board, as appropriate, can be found at the following link:

**Maria Herrera**  
Member

<https://cwc.ca.gov/Pages/WSIP/RegSanTech.aspx>

**Catherine Keig**  
Member

Additionally, staff is finalizing summaries of information related to Commission determinations. We will transmit and post this information no later than 5:00 p.m. on June 4.

Staff from the Commission, Department of Fish and Wildlife, Department of Water Resources, and State Water Resources Control Board look forward to engaging with applicants and stakeholders at the scheduled meetings on June 6 and 7. These meetings are intended to focus on the preliminary scores and determination information. Any issues of clarification identified at the June 6 and 7 meetings will be reported by staff to the Commission at the June 27-29 meeting for its consideration in making final application scores and project determinations.

We look forward to your continued engagement in the Water Storage Investment Program.

Sincerely,

A handwritten signature in blue ink that reads "Joe Yun".

Joe Yun  
Executive Officer  
California Water Commission

## Water Storage Investment Program Technical Review

### South Sacramento County Agriculture and Habitat Lands Recycled Water, Groundwater Storage, and Conjunctive Use Program

#### Sacramento Regional County Sanitation District

The Sacramento Regional County Sanitation District (Regional San) is proposing a conjunctive use project, the South Sacramento County Agriculture and Habitat Lands Recycled Water, Groundwater Storage, and Conjunctive Use Program (South County Ag Program), to store and manage groundwater while improving stream flow, enhancing groundwater-dependent riparian habitats, sustaining prime agricultural lands, and improving regional water supply reliability. Sources of water would be up to 50 thousand acre-feet (TAF) per year of Title 22 tertiary-treated recycled water produced by Regional San. Water produced from the South County Ag Program would be used to irrigate up to 16,000 acres of agriculture and habitat lands in Sacramento County near the lower Cosumnes River and Stone Lakes National Wildlife Refuge.

#### Component Scores

The Water Storage Investment Program (WSIP) scoring components were reviewed and scored in accordance with the WSIP regulations section 6007 and 6009<sup>1</sup>. The scores are recommendations to the Commission and the Commission will assign final scores at the June meeting.

The raw scores for Public Benefit Ratio (PBR), Relative Environmental Value (REV), and Implementation Risk component scores are in a different number scale than the regulation component score scale. The raw scores are normalized to the regulation scoring scale using the formula contained in section 6009(c)(1) of the regulations. The result is the highest raw score receives the maximum points for the scoring component and all other raw scores are assigned point values relative to where they fall in relation to the highest raw score.

Table 1 contains the staff recommended normalized scores for the various component items and the total score for the project.

<b>Table 1. Preliminary Component Scores</b>		
Component	Max Value	Score
Public Benefit Ratio and Non-Monetized Benefits	33	12
Relative Environmental Value	27	27
Resiliency*	25	20
Implementation Risk	15	15
<b>Preliminary Expected Return for Public Investment Score</b>		<b>74</b>

\*Resiliency score is a non-normalized component score.

<sup>1</sup> All references to WSIP regulations refer to California Code of Regulations, title 23, section 6000 et. seq.

### Public Benefit Ratio and Non-Monetized Benefit

The Commission determined the monetized value of public benefits at its May 1-3, 2018 meeting. At that meeting, the Commission afforded the applicant an opportunity to modify its funding request prior to final calculation of the PRB. The applicant did not alter its funding request that was contained in its February 2018 PBR review. The PBR was calculated by dividing the total public benefits provided by the project by the applicant’s funding request and then normalized. The maximum points possible for this category is 33. The monetized public benefits accepted by the Commission for this project are:

- Ecosystem Improvement—Fall-run Chinook flows
- Ecosystem Improvement—Wetland habitat
- Ecosystem Improvement—Riparian habitat
- Ecosystem Improvement—Greater sandhill crane habitat
- Ecosystem Improvement—Vernal pool habitat
- Water Quality Improvement—Reduced salinity load

Where applicable, Non-Monetized Benefit (NMB) scores were added to the PBR score, if the normalized PBR score was less than 33. NMB scores are solely for recreation, emergency response, or flood control benefits. Ecosystem and water quality benefits that were not monetized were scored in the REV process. The applicant included NMBs in its application.

For Emergency Response, the applicant described an NMB that could, in concept, be a public benefit. The proposed project could provide an ancillary benefit by making recycled water available for rural firefighting outside of the municipal areas. However, the applicant states that “*minor modifications to the planned infrastructure*” would be needed for the claimed benefits to materialize, implying that the non-monetized physical benefit is not part of the proposed project. Therefore, this was not an applicable NMB.

Additionally, although the applicant made references to examples of comparable efforts, there was no supporting information regarding how this process has been used elsewhere, how it would be highly valuable in terms of human health and property for rural communities, and what constituted “rural communities” within and near the project area. Lastly, there was no information on the possible amounts of water that would be available for use, whether it is cost effective for the firefighters to use, if it would be available in a timely manner during a fire or what impacts the use of this water may have on operations.

Table 2 presents the Public Benefit Ratio and associated normalized score, along with the NMB and the staff recommended scores.

<b>Table 2. Public Benefit Ratio and Non-Monetized Benefits</b>			
Public Benefit Ratio, as determined by Commission	Normalized PBR Score	Non-Monetized Benefit Score	Preliminary Component Score
1.05	12	0	12

### Relative Environmental Value

There are two types of REVs: ecosystem and water quality provided by the California Department of Fish and Wildlife (CDFW) and the State Water Board (SWB), respectively. Each application indicated the CDFW or SWB priorities the project would address. A score was assigned by the degree to which

ecosystem and/or water quality improvements associated with each claimed priority would be provided by a project.

An explanation of the REV percentage and how it was calculated can be found in the CDFW and SWB REV analysis documents located on the Commission website. For applications with both ecosystem and water quality priorities, the score was split 70% ecosystem and 30% water quality. The score was then normalized to a maximum of 27 points. For applications that had only ecosystem priorities, the score is based solely on the ecosystem REV.

Table 3 presents the REV scores, as determined by the CDFW, for ecosystem benefits, and the SWB, for water quality benefits.

Table 3. Relative Environmental Value		
Component	Comment	Score
Ecosystem	<p>By raising the elevation of groundwater levels, Regional San concludes the South County Ag Program would provide multiple ecosystem benefits and increase base flows to the Cosumnes River. The primary ecosystem improvements would be to wetland, riparian, and vernal pool habitats in the program area with some focused benefits targeting Chinook salmon in the Cosumnes River and greater sandhill crane. These enhancements would be achieved through a combination of surface and groundwater management, surface water applications to the landscape (agriculture), and by bringing the groundwater close to the surface so that plants can tap into sub-surface water. The applicant also proposes that through management, and through these habitat improvements, the population of greater sandhill crane in the Program area, and fall-run Chinook salmon in the Cosumnes River, would increase. The ecosystem priorities identified by the applicant are:</p> <ul style="list-style-type: none"> <li>• Priority 8 – Maintain or restore groundwater and surface water interconnection to support instream benefits and groundwater dependent ecosystems.</li> <li>• Priority 9 – Enhance flow regimes or groundwater conditions to improve the quantity and quality of riparian and floodplain habitats for aquatic and terrestrial species.</li> <li>• Priority 11 – Enhance the temporal and spatial distribution and diversity of habitats to support all life stages of fish and wildlife species.</li> <li>• Priority 14 – Provide water to enhance seasonal wetlands, permanent wetlands, and riparian habitat for aquatic and terrestrial species on State and Federal wildlife refuges and on other public and private lands.</li> <li>• Priority 15 – Develop and implement invasive species management plans utilizing techniques that are supported by best available science to enhance habitat and increase the survival of native species.</li> <li>• Priority 16 – Enhance habitat for native species that have commercial, recreational, scientific, or educational uses.</li> </ul>	73.20

Table 3. Relative Environmental Value		
Component	Comment	Score
Water Quality	<p>The proposed South County Ag Program has the potential to provide a reliable regional water resource by supplying up to 50 TAF per year of recycled water from the upgraded Sacramento Regional Wastewater Treatment Plant. Recycled water from the proposed Program would be used to irrigate agricultural and habitat lands in Sacramento County. This would reduce groundwater withdrawals and thereby allow groundwater levels in the proposed program area to recover. The primary goals of the proposed Program are to provide recycled water to agriculture, contribute to a more resilient water supply for the county and surrounding region, and provide significant multiple ecosystem benefits.</p> <p>Regional San claimed that the proposed Program would address the following one SWB water quality priority:</p> <ul style="list-style-type: none"> <li>• Priority 5: Improve salinity conditions in surface water bodies that are not meeting water quality standards for sodium, total dissolved solids, chloride, or specific conductance/electrical conductivity.</li> </ul>	88.90

Table 4 shows the calculation combining the Ecosystem score and the Water Quality score to determine the total REV score.

Table 4. Combined Relative Environmental Value Calculation						
Ecosystem Score Calculation			Water Quality Score Calculation			
Eco Score	Eco Portion Score		WQ Score	WQ Portion Score	Eco Score	WQ Score
73.20	x 0.7	= 51.24	88.90	x 0.3 = 26.67	51.24	+ 26.67 = 77.91

Table 5 shows the normalization calculation for the REV component Score.

Table 5. Normalized Relative Environmental Value Calculation			
Total REV Score	Max REV Score	Max Possible Score	Preliminary Component Score
77.91	÷ 77.91	x 27	= 27

## Resiliency Score

The resiliency score (total of 25 points) is made up of two pieces: the project’s integration and flexibility (10 points) and its response to an uncertain future (15 points). Applications that demonstrated a high quality of analysis and high level of integration and system flexibility scored higher than those that demonstrated a low quality of analysis or low levels of integration and added system flexibility.

Applications with a good quality of analysis, and that demonstrated the project would perform well in future climate conditions including showing water would be available during a drought, scored higher than those that demonstrating a low quality of analysis, public benefits reduced, or low performance during a drought.

Table 6 is the staff recommended score for Resiliency and the evaluation of the two components:

a) Integration and Flexibility and b) Uncertainty.

Table 6. Resiliency		
Component	Comment	Score
Integration and Flexibility	<p>The applicant described a high level of integration of the proposed South County Ag Program with regional and local water agencies. Potential consistency with federal, statewide, regional, and local planning efforts is described. The proposed South County Ag Program is identified as a high priority project in the Sacramento Regional Water Authority’s Integrated Regional Water Management Plan. The South County Ag Program would add greater flexibility to the conjunctive use of local groundwater and surface water resources to improve the management of water resources at the regional and state level.</p> <p>The applicant described that the proposed South County Ag Program would benefit the overall long-term sustainability of local and regional water resources through improved groundwater and surface water conditions because of in-lieu and wintertime groundwater recharge operations. The project would recharge up to 50 TAF per year of recycled water produced by Regional San. The South County Ag Program would add greater flexibility to the conjunctive management of the local groundwater and surface water resources and contribute to the improved management of water resources at the regional and statewide level. The South County Ag Program would also benefit the broader Central Valley water system, including the State Water Project, Central Valley Project, and the Sacramento-San Joaquin Delta through increased streamflow in the lower Cosumnes River and Mokelumne River, both of which are Delta tributaries. These increases in streamflow would be a result of increased groundwater elevations due to the South County Ag Program.</p> <p>The applicant is a member of the Sacramento Regional Water Authority which has developed an Integrated Regional Water Management Plan that identified the proposed project as a high-priority project. The expected groundwater banking partner(s) include the Sacramento Central Groundwater Authority (the primary Groundwater Sustainability Agency (GSA) where the project is located) which supports the project because it contributes to</p>	10

<b>Table 6. Resiliency</b>		
<b>Component</b>	<b>Comment</b>	<b>Score</b>
	<p>groundwater basin resiliency and Sustainable Groundwater Management Act (SGMA) compliance.</p> <p>The improved groundwater and surface water conditions resulting from the South County Ag Program can help the region mitigate the negative effects of droughts and recover from impacts sooner. During dry and critical dry years, the extraction of banked water can provide supplies to a variety of users and allow surface water diversions to be reduced, benefiting the state water system, specifically the Sacramento region and Delta.</p>	
Uncertainty	<p>The applicant provided a qualitative analysis of the potential effects of more extreme climate conditions than the 2070 conditions on the project operations. It is not clear if the applicant’s analysis used the two extreme climate scenarios (2070 Wetter/Moderate Warming and 2070 Drier/Extreme-Warming) provided by WSIP. The applicant stated that 50 TAF per year of recycled water is expected to be available to the project for groundwater regardless of climate conditions, and that the recycled water supply would be drought and climate change resilient because the quantity of recycled water for the proposed project comprises only 38% of annual discharge volume by Regional San. The timing of availability of that water could be impacted by climate conditions in any given water year. The applicant stated that project operations can be adjusted for changes in the timing of recycled water availability, but some benefits may be impacted by major and regular changes to the timing of recycled water deliveries.</p> <p>The applicant stated that under more extreme conditions than those represented in the 2070 climate change, the recharged water left in the basin and resulting benefits will become more important to mitigate, or even reverse the negative effects of climate change on groundwater resources, streamflows, and ecosystems. However, the applicant did not describe how each of the substantiated public physical benefits would change under the two extreme climate conditions or how the operations of the proposed project could be adapted to sustain public physical benefits claimed under the extreme climate scenarios.</p> <p>The applicant described the effects of cumulative hydrology impacts, cumulative effects of California WaterFix, and changes related to water storage, flood management, ecosystem conditions and management, groundwater and other water management actions, and Delta operations and management on the project. The applicant’s analysis indicated that the project’s effects on the CVP and SWP operations would be minimal because reductions in discharge are offset by increases in surface water flows due to higher groundwater conditions. With California WaterFix, the project’s cumulative impacts to system storage is minimal and can be fully mitigated. Because the project is not dependent on other water storage projects for water supply, changes related to water storage operations would not be</p>	10

Table 6. Resiliency		
Component	Comment	Score
	<p>expected to impact project benefits. Changes in flood management is not expected to affect the project operations. Changes to ecosystem conditions and management are not expected to negatively impact the project benefits and that project operations may be adjusted to enhance benefits in different locations within the region if other activities resulted in changes to targeted benefits. Changes in agricultural water conservation could reduce recycled water deliveries. On changes related to Delta operations and management, the applicant stated that the project’s benefits related to groundwater recharge and increased streamflows on the Cosumnes and Mokelumne rivers would have positive effects on sea water intrusion impacts to the subbasin and adjoining basins. The applicant did not describe how each of the substantiated public physical benefits would be affected by the changes or how the operations of the proposed project could be adapted to sustain public physical benefits claimed.</p> <p>The applicant stated that other sources of uncertainty cannot presently be adequately quantified but will be considered in the future project operations. Such project uncertainties are related to the actual water accounting framework for the banking operations, operations in the context of the SGMA implementation, wintertime irrigation regulatory requirements, and the project’s petition for change related to recycled water and the corresponding reduction in Regional San’s discharge.</p> <p>The applicant described that if future conditions differ from those anticipated under the current understanding, it will continue to use resources to improve understanding of uncertainties and adapt to changing conditions. The applicant also explained that the South County Ag Program operations will be closely monitored and adaptively managed to maintain public benefits claimed.</p> <p>The applicant analyzed and described the project performance in providing public benefits during a 5-year drought for the 1988-1992 drought period under the 2070 climate conditions. The amount of water stored in the water system due to the project at the beginning and end of a five-year drought is 497 TAF and 511 TAF, respectively.</p>	
<b>Preliminary Component Score</b>		<b>20</b>

### Implementation Risk

The implementation risk score is the total of the technical, environmental, economic and financial feasibility scores. One to five points, per category, were assigned depending on whether the information provided in the application showed a high or low risk of the project being built or operated in the timeframes provided, as well as whether the information was or was not well supported. The points total, maximum of 20, was then normalized for a maximum of 15 points.



Table 7 is the staff recommended score for Implementation Risk and the evaluation of the four component factors: Technical Feasibility, Financial Feasibility, Economic Feasibility, and Environmental Feasibility.

Table 7. Implementation Risk		
Implementation Risk	Comments	Score
Technical Feasibility	<p>The applicant demonstrated that the project can be constructed with existing technology and available construction materials, work force, and equipment. The applicant also demonstrated that the project is technically feasible consistent with the preliminary operations plan, as discussed below.</p> <p>Feasibility level cost estimates, design drawings, and construction schedule indicated the project can be constructed. The preliminary operations plan contains the four required components and are well supported by the information provided. There is a high certainty that the project can be operated to provide the substantiated public benefits, as described in the preliminary operations plan.</p> <p>Preliminary operations plan components, as required by the regulations, are listed below:</p> <ul style="list-style-type: none"> <li>• Project operations and public benefits under a range of hydrologic conditions, including wettest and driest years and multiple dry years - Well supported</li> <li>• The actions that will be taken to meet the desired public benefit objectives - Well supported</li> <li>• How operations will be monitored to ensure public benefit outcomes - Well supported</li> <li>• Preliminary adaptive management strategies - Well supported</li> </ul> <p>The preliminary operations plan describes how ecosystem benefits will be achieved because of the water application and delivery, active management to achieve the ecosystem benefits, habitat restoration requiring active management or implementation, and complimentary changes in land management to support wildlife. Recycled water delivery operations, including deliveries for refuges, are shown for dry and wet years and describes operations under multi-year dry conditions.</p> <p>The preliminary operations plan describes the applicant’s commitment to building its project to provide environmental benefit and describes operational rules to provide the public benefits and are well supported.</p>	5

<b>Table 7. Implementation Risk</b>		
<b>Implementation Risk</b>	<b>Comments</b>	<b>Score</b>
	<p>The operations monitoring plan is well supported. The monitoring plan will include three main components:</p> <ul style="list-style-type: none"> <li>• An assessment of the land management practices (wintertime field flooding, crop residue management) that are in place to create habitat and support wildlife</li> <li>• Riparian and wetland vegetation surveys to evaluate site conditions and function, and</li> <li>• Monitoring to assess biological responses.</li> </ul> <p>This three-tiered monitoring approach would allow the applicant to track and evaluate the progress toward meeting the ecosystem benefit objectives. The monitoring would be conducted in cooperation with The Nature Conservancy and other resource managers responsible for lands in the project area.</p> <p>The applicant states the adaptive management of the project would be implemented on a five-year review cycle. The five-year review cycle would allow the applicant to review the data from the previous years of implementation, maintenance, and monitoring and incorporate new technologies and lessons learned through from past years. The five-year review cycle provides sufficient flexibility to collect and analyze the data and make operations and management changes as necessary and allow course correction on implementation milestones.</p>	
Financial Feasibility	<p>The applicant has demonstrated that sufficient funds are likely to be available from public and non-public sources to cover the construction and operation and maintenance (O&amp;M) of the project over the planning horizon. However, no explicit funding source has been identified for some of the O&amp;M costs required to operate the water supply and ecosystem projects.</p> <p>The financial analysis provided by the applicant indicates a low risk that the applicant would be unable to build or operate the project. The applicant's monetized non-public benefits are almost as large as the non-public costs. The applicant has an established rate base that is large relative to unfunded costs. However, some of the financial feasibility information is not well-supported because no funding source has been identified for some of the future O&amp;M required. Additional non-monetized financial benefits may exist such as avoided future costs or ecosystem benefits of reduced wastewater discharge, which would increase the certainty that the project could be built or operated.</p>	4
Economic Feasibility	<p>Considering all benefits and costs quantified and monetized by the applicant and adjusted by staff, the calculated Benefit/Cost (B/C) ratio is 0.73. However, calculated water supply benefits include a water supply</p>	4

<b>Table 7. Implementation Risk</b>		
<b>Implementation Risk</b>	<b>Comments</b>	<b>Score</b>
	<p>impact of \$112 million. Hydrologic model results confirm that the project causes reduced water supply to other users downstream, but reviewers believe that the water supply impact cost should be excluded, for the purpose of the implementation risk score, because the applicant expects to obtain a water right to the wastewater. If so, the applicant would not pay for the water supply impact and their risk “of being unable to build or operate the project,” (the implementation risk criteria specified by Regulation 6009 (h)(1)) is not affected by the water supply impact cost.</p> <p>Without the water supply impact cost, the B/C ratio would be 0.99. Public and non-public benefits are 70 and 30 percent of total benefits, respectively.</p> <p>The applicant’s analysis of total costs relative to total monetized public and non-public benefits, as adjusted by staff, indicates a high certainty of being able to build or operate the project. However, some of the feasibility information is not fully supported.</p>	
Environmental Feasibility	<p>The application materials indicate that there is a moderately-high certainty that the project could be built or operated. A comprehensive list of permits was provided, indicating some permits will be obtained as early as 2019 and others as construction phasing requires in 2020, 2023, 2025, and 2028. Applicant indicated that it currently has a protest to its wastewater change petition for a change in the point of discharge, place of use, or purpose of use of treated water. Phase 1 construction begins in 2020 and the change petition will be needed by then. Between the phasing of the project and wastewater change petition, the schedule could be affected.</p> <p>The Draft EIR was completed in 2016 and the Final EIR in 2017. The Draft EIR evaluated the proposed project at both the project-level and program-level of detail. Banking and extraction were evaluated at the project level. Detailed plans of the distribution mains, service connection laterals, and customer turnouts of the proposed project were not known at the time of EIR preparation, they are contingent upon the completion of the project-level components: pump station at Sacramento Regional Wastewater Treatment Plant and the transmission pipeline from the pump station to Twin Cities Road.</p> <p>The EIR describes how significant impacts will be mitigated or reduced. No significant impacts that would require overriding considerations. Sustaining flow in the Sacramento River is a concern, and the applicant would work with resources agencies to adjust the timing of discharge reductions to ensure that adverse effects on fisheries were avoided due to reduced flows in drier years.</p>	4

Table 7. Implementation Risk		
Implementation Risk	Comments	Score
	In the project's schedule, the applicant states that it will be able to fast track project construction (complete all 4 phases) to be completed by mid-2023 if WSIP funding is available for the entire project. Without funding available for the entire project, the applicant will have to phase construction and that could affect the schedule.	
<b>Preliminary Component Score</b>		<b>17</b>

Table 8 shows the normalization calculation for the Implementation Risk Score.

Table 8. Normalized Implementation Risk (IR)			
Total IR Score	Maximum IR Score	Maximum Possible Score	Preliminary Component Score
17	÷ 17	x 15	= 15