



Willow Springs  
Water Bank

WATER STORAGE INVESTMENT PROGRAM  
**PROGRESS REPORT**

Willow Springs Water Bank  
Conjunctive Use Project

31 July 2019



Willow Springs  
Water Bank

## PURPOSE OF NARRATIVE

This Narrative explains the items listed in Tables 1 and 2 (Attachment A) of this 2019 Quarter 3 WSIP progress report. The two tables are required components of the initial and quarterly reports to be provided to California Water Commission and staff. This Narrative provides an easy-to-follow explanation of many of the items listed in both tables along with significant, new developments over the past few months that could impact Willow Springs Water Bank (WSWB) and its development.

The major Narrative components are, (1) Complimentary Grants, (2) CEQA, (3) Facilities Planning, and (4) Schedule Update.

## 1. COMPLIMENTARY GRANTS

On June 14 of 2018, WSWB successfully obtained a commitment of \$15 M in Federal Emergency Management Agency (FEMA) grant funds from the Hazard Mitigation Grant Program (FEMA-I). The basis of the grant application is WSWB's ability to respond to flood and drought emergencies. A letter was sent from the State Office of Emergency Services (OES) notifying WSWB that its application had been accepted and submitted to FEMA .

WSWB was notified on September 28, 2018 that it is also eligible to apply for a second OES/FEMA grant of \$10 M (FEMA-II) for DR-4382. Again, the basis of the application is WSWB's ability to respond to flood and drought emergencies. Formal application was submitted on April 18, 2019. WSWB meets the criteria and appears to be well positioned to receive funding through this program.

On April 25th, 2019 WSWB was notified of eligibility for additional FEMA grants based on DR-4407 (Attachment B). The two grants have been determined eligible by Cal OES for a combined total of \$108M. The application for these funds was submitted to OES on July 5th, 2019.

These OES/FEMA applications lead to a finance agreement with FEMA. The FEMA funds are already allocated to California. Receipt is now dependent upon a signed finance agreement with FEMA. FEMA will prepare an Environmental Assessment, in compliance with the National Environmental Policy Act (NEPA), for the grants. When NEPA is complete for FEMA I, a finance agreement with FEMA will be executed. WSWB will build a 48" diameter pipe connection to existing aqueduct systems and make 16 existing wells operational which enables additional recharge into WSWB. It is estimated that these facilities will be online by 2021.

Kern County has partnered with WSWB and is the sponsor for the FEMA-I grant. Kern County will also be the sponsor for the FEMA-II grant as well. This sponsorship with Kern County will streamline the many permits and approvals that WSWB will need from Kern County. WSWB is primarily located in eastern Kern County, so this partnership is important.

These federal FEMA grants leverage local, state and federal funding. They also demonstrate the multi-purpose benefits of WSWB and its ability to meet statewide emergency goals as well as water storage and supply goals.

Phased facility construction may enable use of the additional \$28 M for which WSWB was found eligible to receive. The WSWB Eligible Amount of \$123 M can be used to build more wells beyond those possible with the initial \$95M grant amount. This would reduce the amount of money that must be financed from loans and equity along with the ability to ensure the delivery of the fully proposed public benefits.

In summary, WSWB has obtained \$15 M in complementary federal grants, has a plan to use an additional \$28 M in WSIP funds should they become available, and is pursuing additional grant funding for conjunctive use. The project will be ready soon to start spending the \$95 M in WSIP grant funds for the facilities needed to partially build out the bank.

Additionally, the EIR Addendum described in the next section means that the state's storage portfolio will now be able to realize an actual storage volume increase of 1.00 million acre-feet (MAF) rather than the 0.50 MAF specified in the WSWB grant application.

## 2. CEQA

The original EIR was prepared and filed with the state clearinghouse in 2006 It is available online at: [https://cwc.ca.gov/WISPDocs/WSWB\\_EvnDoc\\_1of1.pdf](https://cwc.ca.gov/WISPDocs/WSWB_EvnDoc_1of1.pdf) It was implemented via a 2008 Memorandum of Understanding with Kern County.

An EIR Addendum was started in July of 2017. It was finalized in August 2018 and has been filed with the state clearinghouse (<https://www.rosamondcscd.com/home/showdocument?id=2363>). A copy of the Addendum and Appendices are available on request.

The 2018 Addendum enhances the amount of storage that WSWB will add to California's storage portfolio by increasing volume from 0.50 to 1.00 MAF. This enables an increase in bank shares to be sold from 100,000 to 225,000. The capacity increase is accomplished primarily by adding more wells. The Addendum also reduces the impact of the project on the environment

by altering the alignment of the recharge pipe slightly to avoid Sensitive Environmental Areas (SEAs) that contain Joshua Trees.

This reduces the risk that the project construction and online dates will be delayed due to environmental issues. The Addendum also enables the full put and take capacity planned for WSWB. Put is 280 thousand acre-feet per year (TAFY). Take is 225 TAFY. The planned volume is 1,000 thousand acre-feet (TAF). This enables 214,000 new bank shares plus 11,000 existing shares. A share is defined as 1.0 AFY of put and take. One-third of those shares, or 71,000 shares, will be dedicated to WSIP ecosystem needs. This is based on the results of the CalSim modeling in the original grant application.

Additional CEQA and potentially NEPA work in conjunction with the Water Commission staff will be needed. Pulse flow operations and capturing unallocated surplus SWP water will need to be vetted under CEQA and other regulatory agencies. It is unclear at this point who will be the responsible party for development of these documents and look forward to coordinating these efforts with CWC and staff. The form and extent of required CEQA documentation has not been determined yet. It will also be coordinated with NEPA documents being prepared by FEMA. Process and progress on these documents will be described in future quarterly reports.

### 3. FACILITIES PLANNING

Considerable feasibility planning for the new facilities has already been completed. Past studies include the following:

- 2005 initial feasibility study prepared for the 2006 EIR (by Western Development and Storage)
- 2011 master plan for site buildout (by GEI)
- 2014 groundwater model (by HDR)
- 2016 master plan update (by GEI)

Additional planning is needed to start design/build process. Design/build enables a rapid online date. It also controls the risk of cost overruns with the use of a Guaranteed Maximum Price type of contract. This will reduce project risk. It is assumed that 20% to 30% of

design will need to be complete before the design/build process can proceed.

A Conjunctive Use Feasibility Study is part of the WSIP Regulation. WSWB will conduct its Feasibility Study in 2019. GEI Consultants Inc. have been hired and are close to completion.

### 4. SCHEDULE UPDATE

WSWB recharge capability is targeted to be online in 2020. The existing AVEK West Feeder already connects to the WSWB percolation ponds and can be used for recharge under a 2012 Agreement with AVEK and can occur immediately. Also, the pipe planned for construction using FEMA money enables additional recharge. Both pipes represent a backup plan to make sure recharge operations can begin in 2020.

Recharge capacity is the initial priority for facilities. The bank needs to catch the next wet cycle and put it into the ground.

Bringing well capacity online early is not as urgent as providing recharge capability because water cannot be extracted from the bank until it is recharged. Much like a surface reservoir, water cannot be taken out of storage in WSWB until it is banked. The AV Watermaster enforces this requirement. Unless an agreement to borrow groundwater can be developed, water must be stored before it can be extracted.

Institutional issues and agreements may be difficult to resolve before starting recharge. Agreements are needed with DWR, USBR, and the SWP contractors to initiate pre-delivery of water from San Luis Reservoir into WSWB. The impacted parties must be convinced that there will be no negative impact on them due to the pre-delivery of water.

Well drilling will be phased to optimize production and recognize local drilling limitations. Drilling too many wells too fast can result in poor per well production, poor water quality, or both. This will be detailed in a formal operations and startup plan, which is under development.

Early start storage can also be used to provide new carryover and emergency storage for the state. This will be part of ongoing discussions with various state agencies.

Figure 1 WSWB Potential Construction Schedule

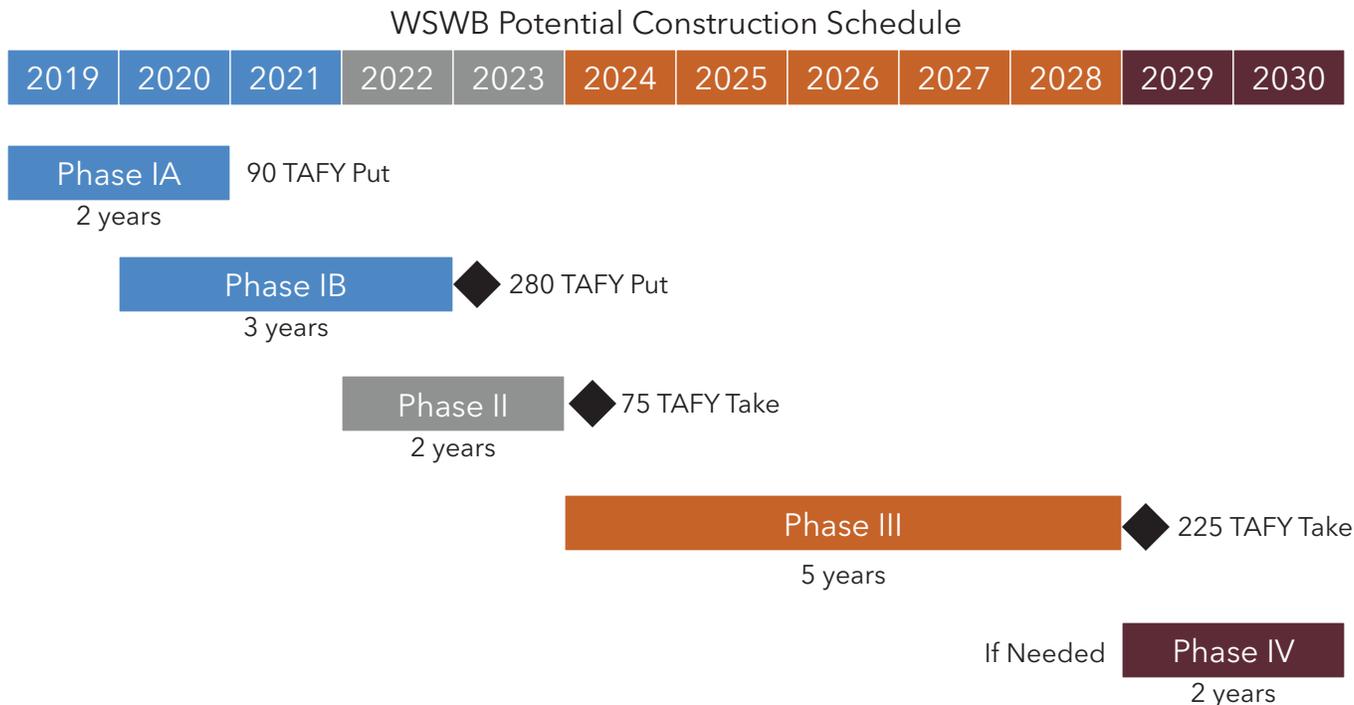


Table 1. WSWB Early Start Phasing and Capital Cost

**WSWB Early Start Phasing and Capital Cost**

Phase	Major Facilities	Year Online	Put (cfs)	Take (cfs)	\$M
Existing	AVEK West Feeder, 320 acres of ponds, 7 irrigation wells	Now	100	14	0
IA	FEMA-I: 48" pipe to LAA #2, 50cfs from well equipping	2020	225	50	16
IB	Recharge pipe, remainder of percolation ponds	2022	385	50	94
II	16 new wells, 150cfs lift station (60% of 250cfs)	2024	385	106	67
III	60 new wells, full lift station, substation, and pipes	2028	385	310	129
All					306

## SUMMARY

The most significant events of the WSWB project implementation are as follows:

- Acquisition of more FEMA grants to leverage WSIP grants
- Approval of an EIR Addendum, increasing the WSWB capacity to 1.00 MAF

## ATTACHMENTS

Attachment A: Table 1. Project Schedule

Table 2: Quarterly Reporting Items for Commission Hearing on Final Awards

Attachment B: MWD Attachment B Notification of Eligibility for HMGP

## ATTACHMENT A

Required Components of Progress Report  
Table 1: Project Schedule

Funding Agreement Milestone	Start Date	Finish Date	% Complete
Non-public benefits cost share contracts - 154,000 shares in WSWB out of 225,000 shares total (68%) <ul style="list-style-type: none"> <li>Executed non-public benefit contract: Rosamond CSD (6,000 shares)</li> <li>Executed non-public benefit contract: San Diego CSD (5,000 shares)</li> <li>Unallocated non-public shares available: 143,000 shares</li> </ul>	Done Done TBD	Done Done TBD	100% 100% 0%
Contracts for Administration of Public Benefits - 71,000 shares in WSWB out of 225,000 shares total (32%)* <ul style="list-style-type: none"> <li>DFW (ecosystem)</li> <li>SWRCB (ecosystem)</li> <li>DWR (emergency response)</li> </ul>	TBD TBD TBD	TBD TBD TBD	0% 0% 0%
Completed Feasibility Studies <ul style="list-style-type: none"> <li>2005 Feasibility Evaluation</li> <li>2011 Master Plan</li> <li>2014 groundwater hydrologic model</li> <li>2016 Master Plan Update</li> <li>2019 Conjunctive Use Feasibility Study</li> </ul>	2004 2010 2015 2013 2019	2005 2011 2016 2014 2019	100% 100% 100% 100% 75%
Environmental documents <ul style="list-style-type: none"> <li>Prior CEQA Environmental Impact Report (2006)</li> <li>Prior CEQA Environmental Impact Report Addendum (2018)</li> <li>New CEQA needed for SWP spill capture</li> <li>New NEPA for FEMA-I grant</li> <li>New NEPA for FEMA-II grant</li> <li>New NEPA for FEMA-III grant</li> </ul>	2005 7/2017 TBD 8/2018 TBD TBD	2006 8/2018 TBD 12/2019 TBD TBD	100% 100% 0% ~50% 0% 0%
Federal, State, and Local Approvals <ul style="list-style-type: none"> <li>Federal: USBR, FEMA</li> <li>State: DFW, DWR, SWRCB, CWC</li> <li>Local: Kern Co. Los Angeles Co., AVEK</li> </ul>	TBD TBD TBD	TBD TBD TBD	0% 0% 0%
Funding Agreement <ul style="list-style-type: none"> <li>Updated budget</li> <li>Updated Schedule</li> <li>Phasing Plan</li> </ul>	TBD TBD TBD	TBD TBD TBD	0% 0% 0%

JULY 31 WSIP PROGRESS REPORT

Funding Agreement Milestone	Start Date	Finish Date	% Complete
Project Planning for design/build			
• Project planning	Done	Done	100%
• Right-of-way acquisition and pipeline easements	1/2017	TBD	25%
• 20% to 30% design (or sufficient to start design/build)	TBD	TBD	0%
Construction			
• Phase IA facilities to comply with FEMA grant obligations	TBD	TBD	0%
• Phase IB facilities to comply with Prop.1 gran obligations	TBD	TBD	0%
• Phases II, III, and possibly IV: new wells needed to extract the full 225 TAFY extraction capacity	TBD	TBD	0%
Begin Operations			
• Recharge pipes online in 2020	TBD	TBD	0%
• Extraction wells online in phases over a 7-year period	TBD	TBD	0%
• Backup plan if recharge facilities are delayed	TBD	TBD	0%
• Early start operations	TBD	TBD	0%

\* WSWB will provide 225,000 shares of bank capacity based on 225 TAFY of extraction. 71,000 shares or 71 TAFY of capacity must be dedicated to ecosystem (fish pulse flows) and backstopping (putting water back into San Luis to avoid the low point problem). This is 1/3 of the WSWB available capacity. Extraction capacity constrains the total number of shares available. 375 TAF of volume (5.0 AF/share) will be dedicated to WSIP needs to store captured SWP spill water. This is consistent with the CalSim modeling presented in the WSWB grant application.

JULY 31 WSIP PROGRESS REPORT

Description	Instructions	Estimated Completion Date	Percent Complete %
Contracts for non-public cost share	<ul style="list-style-type: none"> <li>Existing contract with RCSD (6,000 shares)</li> <li>Existing contract with SDCWA (5,000 shares)</li> <li>New contracts</li> </ul>	Done Done 2022	100% 100% 1%
Contracts for Administration of public benefits	<ul style="list-style-type: none"> <li>DFW contract for ecosystem benefits</li> <li>DWR contract for San Luis backstopping</li> <li>DWR contract for emergency response water</li> </ul>	TBD TBD TBD	0% 0% 0%
Completed feasibility studies	<ul style="list-style-type: none"> <li>2005 initial feasibility evaluation prepared for the 2006 EIR (prepared by WDS)</li> <li>2011 master plan for site buildout (prepared by GEI)</li> <li>2014 groundwater model (prepared by HDR)</li> <li>2016 master plan update (prepared by GEI)</li> </ul>	Done Done Done Done	100% 100% 100% 100%
Final environmental documentation	<ul style="list-style-type: none"> <li>Existing 2006 Environmental Impact Report (EIR)</li> <li>Existing 2018 EIR Addendum</li> <li>New Environmental Assessment for NEPA compliance for FEMA grant(s)</li> <li>New CEQA documents to secure water rights for SWP spill capture</li> </ul>	Done Done 12/2018 TBD	100% 100% 50% 0%
Construction	<ul style="list-style-type: none"> <li>FEMA approval of finance agreement for grant</li> <li>DWR approval to draw down San Luis Reservoir</li> <li>DWR approval to draw down Oroville Reservoir</li> <li>OES approval of finance agreement for FEMA grant</li> <li>Kern County Conditional Use Permit</li> <li>Los Angeles County Conditional Use Permit</li> <li>AVEK agreement for turnout to CA Aqueduct</li> </ul>	TBD TBD TBD TBD TBD TBD TBD	0% 0% 0% 0% 0% 0% 0%

Permits needed: [https://cwc.ca.gov/WISPDocs/WSWB\\_Permits\\_1of1.pdf](https://cwc.ca.gov/WISPDocs/WSWB_Permits_1of1.pdf) . Permits and approvals listed in Table 2 are only the major ones; the link to the application contains the comprehensive list.

ATTACHMENT B

## Mark Beuhler

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**From:** Emily Winchell <Emily.Winchell@caloes.ca.gov> on behalf of Governor's Office of Emergency Services <Governor's\_Office\_of\_Emergency\_Services@oes.ca.gov>  
**Sent:** Thursday, April 25, 2019 12:09 PM  
**To:** Mark Beuhler  
**Subject:** Your HMGP NOI is eligible - Control No. is 0160

The California Governor's Office of Emergency Services (Cal OES) has received the Hazard Mitigation Grant Program (HMGP) Notice of Interest (NOI) submitted by your agency.

Project Number: DR-4407-0160.  
Subapplicant Name: Kern County.  
Activity Title: Willow Springs Water Bank (WSWB)-Lake Isabella Conjunctive Use Project.  
Federal Share Request: \$97,800,000.00.  
Required Applicant Match: \$32,600,000.00.

Your NOI was reviewed by Cal OES staff and determined to represent an eligible HMGP activity. This email confirms the formal invitation for Kern County to develop a full subapplication for consideration of HMGP funding.

The project and planning subapplications are available on our website  
[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_www.caloes.ca.gov\\_cal-2Does-2Ddivisions\\_recovery\\_disaster-2Dmitigation-2Dtechnical-2Dsupport\\_404-2Dhazard-2Dmitigation-2Dgrant-2Dprogram&d=DwIBAg&c=yhz6ApPhdGGGFsAiHwVKyg&r=bJwIJmtMnuiJvnxMXLvLdj5ZZ3NIRI72KmZK42divY&m=cA7DIbOcGqw90gdMWYTY8E6LgbhB6QQynnjgYPkrfZ8&s=hvmFE7mcOpJXibU1dOeGMpFYTejDjBW3PTsMRlu30n4&e=](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.caloes.ca.gov_cal-2Does-2Ddivisions_recovery_disaster-2Dmitigation-2Dtechnical-2Dsupport_404-2Dhazard-2Dmitigation-2Dgrant-2Dprogram&d=DwIBAg&c=yhz6ApPhdGGGFsAiHwVKyg&r=bJwIJmtMnuiJvnxMXLvLdj5ZZ3NIRI72KmZK42divY&m=cA7DIbOcGqw90gdMWYTY8E6LgbhB6QQynnjgYPkrfZ8&s=hvmFE7mcOpJXibU1dOeGMpFYTejDjBW3PTsMRlu30n4&e=)

Subapplications must be mailed to Cal OES, postmarked by July 5, 2019.

Subapplications Development and Benefit Cost Analysis (BCA) workshops will be offered at locations throughout California. You will be notified via email of the date(s) and location(s) of the workshop.

Please direct any questions to [HMA@caloes.ca.gov](mailto:HMA@caloes.ca.gov)

## Mark Beuhler

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**From:** Emily Winchell <Emily.Winchell@caloes.ca.gov> on behalf of Governor's Office of Emergency Services <Governor's\_Office\_of\_Emergency\_Services@oes.ca.gov>  
**Sent:** Thursday, April 25, 2019 11:48 AM  
**To:** Mark Beuhler  
**Subject:** Your HMGP NOI is eligible - Control No. is 0153

The California Governor's Office of Emergency Services (Cal OES) has received the Hazard Mitigation Grant Program (HMGP) Notice of Interest (NOI) submitted by your agency.

Project Number: DR-4407-0153.  
Subapplicant Name: Kern County.  
Activity Title: Willow Springs Managed Aquifer Recharge - Resilient Infrastructure Project.  
Federal Share Request: \$9,997,500.00.  
Required Applicant Match: \$3,332,500.00.

Your NOI was reviewed by Cal OES staff and determined to represent an eligible HMGP activity. This email confirms the formal invitation for Kern County to develop a full subapplication for consideration of HMGP funding.

The project and planning subapplications are available on our website  
[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_www.caloes.ca.gov\\_cal-2Does-2Ddivisions\\_recovery\\_disaster-2Dmitigation-2Dtechnical-2Dsupport\\_404-2Dhazard-2Dmitigation-2Dgrant-2Dprogram&d=DwIBAg&c=yhz6ApPhdGGGFsAiHwVKyg&r=bJwIJmtMnuiJvnxMXLvLdj5ZZ3NIRI72KmZK42dlvY&m=990IT20AZ64g3KaO\\_KcH05wYPgqXallW\\_DD2ZpasqrQ&s=aTgpbXoq-cdyycU7uBTyd05sV7KSnkM9jCt8Ueb2C8&e=](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.caloes.ca.gov_cal-2Does-2Ddivisions_recovery_disaster-2Dmitigation-2Dtechnical-2Dsupport_404-2Dhazard-2Dmitigation-2Dgrant-2Dprogram&d=DwIBAg&c=yhz6ApPhdGGGFsAiHwVKyg&r=bJwIJmtMnuiJvnxMXLvLdj5ZZ3NIRI72KmZK42dlvY&m=990IT20AZ64g3KaO_KcH05wYPgqXallW_DD2ZpasqrQ&s=aTgpbXoq-cdyycU7uBTyd05sV7KSnkM9jCt8Ueb2C8&e=)

Subapplications must be mailed to Cal OES, postmarked by July 5, 2019.

Subapplications Development and Benefit Cost Analysis (BCA) workshops will be offered at locations throughout California. You will be notified via email of the date(s) and location(s) of the workshop.

Please direct any questions to [HMA@caloes.ca.gov](mailto:HMA@caloes.ca.gov)

# About Willow Springs Water Bank Conjunctive Use Project



The WSWB captures surplus water from existing surface reservoirs and saves it for a dry day.

## CONTACT INFORMATION

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