

# KINGS COUNTY WATER DISTRICT

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Department of Water Resources  
Sustainable Groundwater Management Grant Program  
Programmatic Program Manager  
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RE: ***Kings CWD Project List for Potentially Available  
Grant Funds***

Dear Mrs. List,

In a recent discussion about a Round 1 Implementation Grant application, you relayed that it would be helpful to understand the projects that Kings County Water District (Kings CWD or District) is currently considering for implementation given that additional grant funds may soon become available. These near-term efforts are currently in some form of development and, generally, could proceed very quickly if funding became available. Given the dry conditions in 2021, Kings CWD is focused on implementing projects that will yield significant benefits in the next wet year. However, given that revenue from surface water sales is a significant part of the District's annual budget, those efforts are financially challenging when conditions are this dry. Grant funds in a drought year would provide the available finances to move projects forward during a time when there are minimal conflicts with irrigation deliveries and would accomplish long-term goals to improve flood control capabilities and wet year groundwater recharge capacity.

The following pages contain brief project descriptions of several planned near-term Kings CWD projects along with other information and estimates on cost and associated benefits. What is provided is not intended to be an exhaustive list, but is provided to help DWR staff understand the kind of efforts and types of benefits that could be developed with grant funding quickly in this area. Development schedule estimates assume that the specific effort would be completely grant funded and that effort alone was being pursued within the next 12-18 months. The District can accomplish multiple efforts in parallel, but that would likely shift the provided schedules.

Keys to understanding parts of this information rest in two primary points. First, Kings CWD is a District that operates with a very small staff of four employees while servicing an area of 143,000 acres. This is accomplished through relationships with qualified consultants to take on District efforts that don't come up every year. So the construction efforts

described in the following list and their associated costs are heavily reliant on efforts through qualified local consultants and contractors. Second, the District has not targeted the cheapest properties for high priority projects, but rather properties that can be the most effective. Generally these are properties that are very close to existing surface water conveyance systems, and properties that are very sandy which would have high recharge rates over long extended months of delivery.

**KINGS CWD’S CURRENT PROJECT LIST SUMMARY TABLE**

	<b>Project Titles</b>	<b>Area</b> (acres)	<b>Construction</b> <b>Cost</b> <b>Estimate</b>	<b>Wet Yr</b> <b>Benefit</b> (AF)	<b>Dry Yr</b> <b>Benefit</b> (AF)
1	Griswold Recharge Basin, Phase #1	67	\$1,710,000	2,600	200
2	Griswold Recharge Basin, Phase #2	23	\$1,161,000	1,000	50
3	New Last Chance Recharge Basin #1	9	\$800,000	1,100	0
4	New Last Chance Recharge Basin #2	13	\$1,100,000	1,500	50
5	New Recharge Basin at the Excelsior Overpass	13	\$800,000	1,000	0
6	New Bookout Recharge Basin	26	\$1,834,000	2,000	40
7	Esajian Recharge Basin, Phase #2	10	\$500,000	1,000	40
8	Garner Recharge Basin, Phase #2	9	\$400,000	1,000	0
9	Lopez Recharge Basin, Phase #2	12	\$934,000	1,000	50
10	Cody Recharge Basin, Phase #2	10	\$688,000	1,000	40
11	Northern Apex Banking Expansion	30	\$1,000,000	5,000	500
12	Sand Creek Recharge Project	--	\$500,000	1,500	0
13	Improved Basin Turnouts	--	\$1,350,000	3,000	0
	<b>Near-term Subtotal</b>	<b>222</b>	<b>\$12,777,000</b>	<b>22,700</b>	<b>970</b>
14	New Elder Ave Recharge Basin	55	\$4,400,000	3,700	220
15	New 6th Ave Recharge Basin	80	\$6,452,000	5,400	320
16	New 8.5 Ave Recharge Basin	8	\$785,000	1,000	32
17	New Delta View Canal and Basin	200	\$5,000,000	15,000	450
18	New North Hanford Basin	6	\$638,000	400	20
19	New Lacey Blvd. Recharge Basin	18	\$1,319,000	1,000	70
20	New Railroad Recharge Basin	43	\$2,920,000	3,000	170
21	New Hollywood Ave Recharge Basin	7	\$630,000	1,000	0
22	New Iona Ave Recharge Basin	25	\$1,767,000	2,000	100
23	Additional Recharge Basins	800	\$37,200,000	60,000	2,400
24	1600 Acre Reservoir	1,600	\$10,923,000	10,000	0
	<b>Long-term Subtotal</b>	<b>2,842</b>	<b>\$72,034,000</b>	<b>102,500</b>	<b>3,782</b>

It should be noted that a list of longer-term projects was also included in the summary table above. This information was included to help provide perspective on the magnitude of efforts that will likely be undertaken over the next several years associated with projects developed during the GSP Implementation Period.

Kings CWD appreciates DWR staff's interest in the efforts being pursued in this area and potential funding opportunities. If you have any questions or need any clarification, please do not hesitate to let me know.

Sincerely,

*Dennis Mills*

Dennis Mills, PE  
Kings CWD, General Manager

## PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS

### NEW GRISWOLD RECHARGE BASIN, PHASE #1:

#### ***Project Description:***

The New Griswold Recharge Basin, Phase #1 (Project) would develop a new recharge basin on the 67 acre site, currently owned by Kings CWD (Kings County APNs 002-150-072, 002-150-073 and 002-150-074), and will increase the groundwater recharge capacity of Kings River surface water in wet years. The Project will help stabilize declining groundwater levels in the area through the recharge of high quality Kings River surface water during wet years and when floodwater is available. Surface water will be delivered to the Project via Riverside Ditch which is operated and maintained by Kings CWD using existing Kings River water rights. The Project will develop two new recharge basin cells of about 19 acres and 16 acres that may be submerged to depths of 10 feet and 5 feet, respectively. An area of about 14 acres on the northern part of the Project will be set aside to stockpile excavated material. Four structures in Riverside Ditch will either be rehabilitated or newly constructed. An existing 4-bay concrete weir will be rehabilitated. The conveyance capacity of an existing crossing will also be increased. Two new large diameter turnout facilities will be constructed to manage and measure water deliveries to the new basin cells. Also, a new clustered monitoring well will be developed. The new monitoring well will fill a data gap identified in the 2020 Tulare Lake Subbasin Groundwater Sustainability Plan (GSP) and will be used to quantify local changes in groundwater levels, storage, and quality.

#### ***Project Benefits:***

The New Griswold Recharge Basin, Phase #1 (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project will be one of the northernmost facilities in the overall network of new and improved recharge facilities in the MKR GSA area. The Project is expected to receive surplus surface water on average every 4 to 5 years and will have a recharge on the order of 2,600 AF each wet year. Over the next 20 years of GSP implementation, a total infiltration volume of roughly 13,000 AF is expected.

*Wet Yr Benefit:* 2,600 AF recharge

*Dry Yr Benefit:* 200 AF reduced pumping

#### ***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 12/31/21

Construction

01/01/22 – 12/31/22

#### ***Project Cost:***

\$1,710,000

***Proponent:*** Kings CWD      ***County:*** Kings

***Subbasin:*** Tulare Lake      ***GSA:*** Mid-Kings River

## PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS

### NEW GRISWOLD RECHARGE BASIN, PHASE #2:

#### ***Project Description:***

The New Griswold Recharge Basin, Phase #2 (Project) would develop a sandy property adjacent to the 67 acre Griswold Basin site owned by Kings CWD (or District). The new recharge basin site (Kings County APN 002-150-065) is roughly 23 acres, and has been up for sale for some time. The Project would require the purchase of property the District does not currently own. The District recently communicated with the owner and he is open to selling the property to the District for basin development. The property has an abandoned flood water channel on the north side, Riverside Ditch on the south, and there are 13 acres of young almonds on the central part of the property. Surface water will be delivered to the Project via Riverside Ditch which is operated and maintained by Kings CWD using existing Kings River water rights. The Project will develop one new recharge basin cell of about 14 acres that may be submerged to a depth of 5 feet. One new large diameter turnout facility will be constructed to manage and measure water deliveries to the new basin cell. The Project will expand the recharge capacity of the Phase #1 Griswold Recharge Basin and will help stabilize declining groundwater levels in the area through the recharge of high quality Kings River surface water during wet years and when floodwater is available.

#### ***Project Benefits:***

The New Griswold Recharge Basin, Phase #2 (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project will be one of the northernmost facilities in the overall network of new and improved recharge facilities in the MKR GSA. The Project is expected to receive surplus surface water on average every 4 to 5 years and will have a recharge on the order of 1,000 AF each wet year. Over the next 20 years of GSP implementation, a total infiltration volume of roughly 5,000 AF is expected.

*Wet Yr Benefit:* 1,000 AF recharge

*Dry Yr Benefit:* 50 AF reduced pumping

#### ***Construction Start Date:***

Purchase/Planning/Design/Environmental	06/01/21 – 12/31/22
Construction	01/01/23 – 12/31/23

***Project Cost:*** \$1,161,000

***Proponent:*** Kings CWD      ***County:*** Kings

***Subbasin:*** Tulare Lake      ***GSA:*** Mid-Kings River

**PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS**

**NEW LAST CHANCE RECHARGE BASIN #1:**

***Project Description:***

The New Last Chance Recharge Basin #1 (Project) would develop a new recharge basin on an 11 acre site (Kings County APN 002-140-005) currently owned by Last Chance Water Ditch Company (LCWDC). Kings CWD is a stockholder in LCWDC and has been investigating and developing the Project for several months. Kings CWD would obtain an easement to develop, operate and maintain roughly 9 acres of the property while LCWDC would retain ownership of the property. The Project is intended to recharge groundwater in the area of the Kings River and the LCWDC diversion to increase groundwater sustainability and address increasing channel losses in the Kings River that decrease surface water supplies available to LCWDC. The LCWDC canal system delivers to the thousands of acres of rural farmland around Hardwick, Hanford, Grangeville, Armona and Lemoore in Kings County. The wet year surface water delivered to the Project would be available from floodwater and also using existing Kings River water rights. Developed Project facilities would include a new earthen recharge basin, a new 20 cubic-feet per second (CFS) pump station to manage and measure water deliveries from the Kings River to the new basin and several shallow groundwater monitoring locations around the facility.

***Project Benefits:***

The New Last Chance Recharge Basin #1 (Project) is intended to receive surplus surface water through existing rights as well as floodwater in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is also intended to reduce the channel losses in the Kings River near the Last Chance Water Ditch Company (LCWDC) diversion and increase the amount of surface water available to LCWD stockholders. The Project is expected to receive surface water on average every 4 to 5 years and recharge amounts will be on the order of 1,100 AF each wet year. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 7,500 AF is expected.

*Wet Yr Benefit:* 1,100 AF recharge

*Dry Yr Benefit:* 0 AF reduced pumping

***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 12/31/21

Construction

01/01/22 – 12/31/22

***Project Cost:***

\$800,000

***Proponent:*** Kings CWD

***County:*** Kings

***Subbasin:*** Tulare Lake

***GSA:*** Mid-Kings River

## PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS

### NEW LAST CHANCE RECHARGE BASIN #2:

#### ***Project Description:***

The New Last Chance Recharge Basin #2 (Project) would develop a new recharge basin on an 25 acre site (Kings County APN 002-140-007) currently owned by Last Chance Water Ditch Company (LCWDC). Kings CWD is a stockholder in LCWDC and has been investigating and developing the Project for several months. Kings CWD would obtain an easement to develop, operate and maintain 13 acres of the property while LCWDC would retain ownership. The Project is intended to recharge groundwater in the area of the Kings River and the LCWDC diversion to increase groundwater sustainability and address increasing channel losses in the Kings River that decrease surface water supplies available to LCWDC. The LCWDC canal system delivers to the thousands of acres of rural farmland around Hardwick, Hanford, Grangeville, Armona and Lemoore in Kings County. The wet year surface water delivered to the Project would be available from floodwater and also using existing Kings River water rights. Developed Project facilities would include a new earthen recharge basin, a new 20 cubic-feet per second (CFS) pump station to manage and measure water deliveries from the Kings River to the new basin and several shallow groundwater monitoring locations around the facility.

#### ***Project Benefits:***

The New Last Chance Recharge Basin #2 (Project) is intended to receive surplus surface water through existing rights as well as floodwater in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is also intended to reduce the channel losses in the Kings River near the Last Chance Water Ditch Company (LCWDC) diversion and increase the amount of surface water available to LCWD stockholders. The Project is expected to receive surface water on average every 4 to 5 years and recharge amounts will be on the order of 1,500 AF each wet year. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 7,500 AF is expected.

*Wet Yr Benefit:* 1,500 AF recharge

*Dry Yr Benefit:* 50 AF reduced pumping

#### ***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 12/31/22

Construction

01/01/23 – 12/31/23

#### ***Project Cost:***

\$1,100,000

***Proponent:*** Kings CWD      ***County:*** Kings

***Subbasin:*** Tulare Lake      ***GSA:*** Mid-Kings River

## PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS

### ESAJIAN RECHARGE BASIN, PHASE #2:

#### ***Project Description:***

The current Kings CWD Esajian Basin (Kings County APN 002-190-003) is in construction and to develop a 70 acre recharge basin just west of Peoples Ditch. Kings CWD is a stockholder in Peoples Ditch Company (PDC) and has been investigating and developing the Project for a couple years. The Esajian Recharge Basin, Phase #2 (Project) effort would involve the relocation of Peoples Ditch and nearby control structures to make it possible to expand the Esajian Basin by an additional 10 acres. The very sandy Project area is currently owned by Kings CWD and would significantly increase the developing facility's groundwater recharge capacity. The PDC canal system delivers to the thousands of acres of rural farmland around Hanford in Kings County. The wet year surface water delivered to the Project would be available from floodwater and also using existing Kings River water rights. Project efforts would include the additional earthwork to expand the recharge basin, the expansion of the diversion facilities from Peoples Ditch to the Esajian Basin, the earthwork to relocate Peoples Ditch, a modified diversion structure for the Peoples Ditch East Branch, a relocated Farmers weir structure and a few other minor structure modifications.

#### ***Project Benefits:***

The Esajian Recharge Basin, Phase #2 (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to receive surface water on average every 4 to 5 years and recharge amounts will be on the order of 1,000 AF each wet year. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 5,000 AF is expected.

*Wet Yr Benefit:* 1,000 AF recharge

*Dry Yr Benefit:* 40 AF reduced pumping

#### ***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 10/31/21

Construction

11/01/21 – 12/31/22

#### ***Project Cost:***

\$500,000

***Proponent:*** Kings CWD      ***County:*** Kings

***Subbasin:*** Tulare Lake      ***GSA:*** Mid-Kings River



**PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS**

**NEW RECHARGE BASIN AT THE EXCELSIOR OVERPASS:**

***Project Description:***

The California High Speed Rail Authority (CHSRA) has been under development for the last few years in the Kings CWD area. As part of that effort, an overpass has been developed at the Excelsior Avenue crossing. The property that has been acquired by the CHSRA (Kings County APN 002-190-031) includes a 13 acre area, outside of the developed overpass, that appears to be surplus to the effort. Kings CWD would like to acquire and develop the 13 acre area, which is immediately adjacent to Peoples Ditch, as a new groundwater recharge basin known as the New Recharge Basin at the Excelsior Overpass (Project). The wet year surface water delivered to the Project would be available from floodwater and also using existing Kings River water rights. Developed Project facilities would include a new earthen recharge basin, a new 20 cubic-feet per second turnout from Peoples Ditch to manage and measure water deliveries from the Kings River to the new basin and several shallow groundwater monitoring locations around the facility.

***Project Benefits:***

The New Recharge Basin at the Excelsior Overpass (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to receive surface water on average every 4 to 5 years and recharge amounts will be on the order of 1,000 AF each wet year. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 5,000 AF is expected.

*Wet Yr Benefit:* 1,000 AF recharge

*Dry Yr Benefit:* 0 AF reduced pumping

***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 12/31/22

Construction

01/01/23 – 12/31/23

***Project Cost:***

\$800,000

***Proponent:*** Kings CWD

***County:*** Kings

***Subbasin:*** Tulare Lake

***GSA:*** Mid-Kings River

**PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS**

**NEW BOOKOUT RECHARGE BASIN:**

***Project Description:***

The New Bookout Recharge Basin (Project) would develop two sandy properties (portions of Kings County APNs 006-020-106 and 006-020-107) adjacent to the Hardwick Side Ditch that diverts from the Last Chance Water Ditch Company system. The new recharge basin site is roughly 27 acres, and would create a cell on the south and a cell on the north side of the Hadwirck Side Ditch. The Project would require the purchase of property the Kings CWD (or District) does not currently own. Surface water will be delivered to the Project via Riverside Ditch which is operated and maintained by Kings CWD using existing Kings River water rights. The Project will develop one new recharge basin cell of about 22 acres that may be submerged to a depth of 5 feet. Two new large diameter turnout facilities will be constructed to manage and measure water deliveries to the new basin cells. The Project will expand the recharge capacity in the area and will help stabilize declining groundwater levels in the area through the recharge of high quality Kings River surface water during wet years and when floodwater is available.

***Project Benefits:***

The New Bookout Recharge Basin (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to receive surface water on average every 4 to 5 years and recharge amounts will be on the order of 2,000 AF each wet year. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 10,000 AF is expected.

*Wet Yr Benefit:* 2,000 AF recharge

*Dry Yr Benefit:* 40 AF reduced pumping

***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 12/31/22

Construction

01/01/23 – 12/31/23

***Project Cost:***

\$1,834,000

***Proponent:*** Kings CWD

***County:*** Kings

***Subbasin:*** Tulare Lake

***GSA:*** Mid-Kings River

**PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS**

**GARNER RECHARGE BASIN, PHASE #2:**

***Project Description:***

The current Kings CWD Garner Basin (Kings County APN 016-070-101) is a 35 acre recharge basin at the tail end of Settlers Ditch. Kings CWD is a stockholder in Settlers Ditch Company (SDC) and has been investigating and developing the Project over the last few years. The Garner Recharge Basin, Phase #2 (Project) effort would involve the relocation of Settlers Ditch and nearby control structures to make it possible to expand the Garner Basin by an additional 8 acres. The sandy Project area is currently owned by Kings CWD and would significantly increase the developing facility’s groundwater recharge capacity. The SDC canal system delivers to the thousands of acres of rural farmland east of Hanford in Kings County. The wet year surface water delivered to the Project would be available from floodwater and also using existing Kings River water rights. Project efforts would include the additional earthwork to expand the recharge basin, the relocation and expansion of the diversion facility from Settlers Ditch to the Garner Basin, the earthwork to relocate Settlers Ditch, and modifications to a few other minor structures.

***Project Benefits:***

The Garner Recharge Basin, Phase #2 (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to receive surface water on average every 4 to 5 years and recharge amounts will be on the order of 1,000 AF each wet year. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 4,000 AF is expected.

*Wet Yr Benefit:* 1,000 AF recharge

*Dry Yr Benefit:* 0 AF reduced pumping

***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 10/31/21

Construction

11/01/21 – 12/31/22

***Project Cost:***

\$400,000

***Proponent:*** Kings CWD

***County:*** Kings

***Subbasin:*** Tulare Lake

***GSA:*** Mid-Kings River

## PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS

### LOPEZ RECHARGE BASIN, PHASE #2:

#### ***Project Description:***

The existing Lopez Basin has been operated as a recharge basin by Kings CWD for decades. The Lopez Recharge Basin, Phase #2 Project (Project) would expand the existing facility and develop an adjacent 12 acres as a new recharge area. The existing facility is immediately adjacent to the Peoples Ditch Main Canal. Kings CWD is a stockholder in Peoples Ditch Company (PDC) and has been investigating and developing the Project over the last few years. The Project effort would involve the acquisition of 12 acres of property (portions of Kings County APN 006-040-123), the excavation of the new basin areas and the development of new turnout and measurement facilities. The wet year surface water delivered to the Project would be available from floodwater and also from existing Kings River water rights. The Project will expand the recharge capacity in the area and will help stabilize declining groundwater levels in the area through the recharge of high quality Kings River surface water during wet years and when floodwater is available.

#### ***Project Benefits:***

The Lopez Recharge Basin, Phase #2 Project (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to receive surface water on average every 4 to 5 years and recharge amounts will be on the order of 1,000 AF each wet year. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 5,000 AF is expected.

*Wet Yr Benefit:* 1,000 AF recharge

*Dry Yr Benefit:* 50 AF reduced pumping

#### ***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 12/31/21

Construction

01/01/22 – 12/31/23

#### ***Project Cost:***

\$934,000

***Proponent:*** Kings CWD      ***County:*** Kings

***Subbasin:*** Tulare Lake      ***GSA:*** Mid-Kings River

**PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS**

**CODY RECHARGE BASIN, PHASE #2:**

***Project Description:***

The existing Cody Slough has been operated as a recharge basin by Kings CWD since the 1960s. The Cody Recharge Basin, Phase #2 Project (Project) would expand the existing facility and develop an adjacent 10 acres as a new recharge area. The existing facility is immediately adjacent to the Last Chance East Main Canal. Kings CWD is a stockholder in Last Chance Water Ditch Company (LCWDC) and has been investigating and developing the Project over the last few years. The Project effort would involve the acquisition of 10 acres of property (portions of Kings County APN 017-100-010), the excavation of the new basin areas and the development of new turnout and measurement facilities. The wet year surface water delivered to the Project would be available from floodwater and also from existing Kings River water rights. The Project will expand the recharge capacity in the area and will help stabilize declining groundwater levels in the area through the recharge of high quality Kings River surface water during wet years and when floodwater is available.

***Project Benefits:***

The Cody Recharge Basin, Phase #2 Project (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to receive surface water on average every 4 to 5 years and recharge amounts will be on the order of 1,000 AF each wet year. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 5,000 AF is expected.

*Wet Yr Benefit:* 1,000 AF recharge

*Dry Yr Benefit:* 40 AF reduced pumping

***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 10/31/21

Construction

11/01/21 – 12/31/22

***Project Cost:***

\$688,000

***Proponent:*** Kings CWD

***County:*** Kings

***Subbasin:*** Tulare Lake

***GSA:*** Mid-Kings River

**PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS**

**NORTHERN APEX BANKING EXPANSION:**

***Project Description:***

Kings CWD has owned and operated the Apex Ranch Groundwater Bank (GW Bank) since 2002 and banked wet year Kings River surface water supplies for recovery in drier years. The Northern Apex Banking Expansion (Project) effort would develop a second delivery system to the existing bank that would allow for many additional acre to be used to recharge groundwater in wet years. The Project would significantly increase the groundwater bank’s wet year recharge capacity. The wet year surface water delivered to the Project would be available from floodwater and also using existing Kings River water rights. The GW Bank delivers to local canal system that convey needed supplies to the thousands of acres of rural farmland around Hanford in Kings County. Developed Project facilities would include a new 50 cubic-feet per second (CFS) pump station to manage and measure water deliveries, a large diameter pipe conveyance facility that is roughly 1,000 feet long, and outlet structure and modifications to a few existing facilities along the alignment.

***Project Benefits:***

The Northern Apex Banking Expansion (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to receive surplus surface water on average every 4 to 5 years and will have a recharge on the order of 5,000 AF each wet year. Over the next 20 years of GSP implementation, a total infiltration volume of roughly 20,000 AF is expected.

*Wet Yr Benefit:* 5,000 AF recharge

*Dry Yr Benefit:* 500 AF recovered supply

***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 12/31/21

Construction

01/01/22 – 12/31/22

***Project Cost:***

\$1,000,000

***Proponent:*** Kings CWD

***County:*** Kings

***Subbasin:*** Tulare Lake

***GSA:*** Mid-Kings River

## PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS

### DELTA VIEW CANAL AND BASIN:

#### ***Project Description:***

The Delta View Canal and Basin Project (Project) is located in a surface water “white area” in Kings CWD, east of Cross Creek, within the Kaweah Subbasin. The Project would develop a new canal on a 200 foot wide alignment over roughly 6.5 miles. The planned diversion rate for the facility is 100 CFS and the availability of floodwater was assumed to occur every four years and last 100 days each occurrence. The preliminary alignment for this project is along the western side of 1st Avenue in Kings County, from Cross Creek to Houston Avenue (Caldwell Ave in Tulare County). The facility would begin at a new diversion from Cross Creek and would terminate at the City of Visalia’s Basin #4 (previously owned by Kaweah Delta WCD). Two major facilities that would also be necessary would be a crossing under the railroad near Grangeville Blvd. and another at State Highway 198. The Project envisions improvements to 120 acres (3/4ths) of the 160 acre Basin #4 facility to improve recharge capacity at the site so that delivered floodwater can be recharged. Basin #4 would also function as a terminal basin for deliveries along the new canal alignment and prevent operational spills. It is envisioned that growers along this new system would develop turnout and conveyance facilities necessary to take delivery of this wet year supply.

Water supply for the Project would come from flood water on the Kaweah River. Currently, floodwater that makes it to this area is managed either by Lakeside IWD or Corcoran ID. Corcoran ID has both Kings River and Kaweah River water rights, so if they are forced to manage the Kaweah River floodwater, then Kings River supplies go unused. The Project would increase flood protection in the area and would also allow Corcoran ID to take advantage of more Kings River floodwater, while allowing others to divert the Kaweah River supplies and benefiting the groundwater just north of their well field.

#### ***Project Benefits:***

The Delta View Canal and Basin (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to receive surface water on average every 4 to 5 years. Benefits from the Project were estimated on a wet year scenario where diversion occurred at 100 CFS for 100 days which diverted 20,000 AF. Of this amount it was estimated that 12,400 AF went to groundwater recharge and 7,600 AF went to irrigation demands. Also, the Project alignment was converted from irrigated agriculture to a canal which yielded 450 AF of offset agricultural pumping every year after the conversion.

*Wet Yr Benefit:* 12,400 AF recharge, 7,600 AF irrigation delivery (reduced pumping)

*Dry Yr Benefit:* 450 AF reduced pumping

**PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS**

***Construction Start Date:***

Acquisition/Planning/Design/Environmental	06/01/21 – 12/31/23
Construction	01/01/23 – 12/31/25

***Project Cost:*** \$5,000,000

***Proponent:*** Kings CWD      ***County:*** Kings

***Subbasin:*** Kaweah      ***GSA:*** Greater Kaweah



**PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS**

**SAND CREEK RECHARGE PROJECT:**

***Project Description:***

There is a portion of Sand Creek, south of Hanford, which is a very sandy historic slough. Kings CWD has an existing easement to deliver surface water for groundwater recharge to Sand Slough. However, the facilities that were originally developed to deliver these supplies have been impacted by many years of new development in the area. For that reason, Kings CWD plans to develop the Sand Creek Recharge Project (Project) which would involve developing a new delivery pipeline to Sand Creek to increase the deliverable surface water from Peoples Ditch to the available recharge location during wet years. The wet year surface water delivered to the Project would be available from floodwater and also using existing Kings River water rights. Project efforts would include the development of a new pipeline from Peoples Ditch to the Sand Slough, a new turnout and metering stand in/near Peoples Ditch, a new outlet structure in Sand slough, at least one new road crossing, resolving constructions issues along the pipeline alignment and modifications to a few other minor structures.

***Project Benefits:***

The Sand Creek Recharge Project (Project) is intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to receive surface water on average every 4 to 5 years and recharge amounts will be on the order of 1,500 AF each wet year. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 7,500 AF is expected.

*Wet Yr Benefit:* 1,500 AF recharge

*Dry Yr Benefit:* 0 AF reduced pumping

***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 12/31/22

Construction

01/01/23 – 12/31/23

***Project Cost:***

\$500,000

***Proponent:*** Kings CWD

***County:*** Kings

***Subbasin:*** Tulare Lake

***GSA:*** Mid-Kings River

**PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS**

**IMPROVED BASIN TURNOUTS PROJECT:**

***Project Description:***

There are several existing recharge basins within Kings CWD that have capacity limited turnouts that could be improved to make the existing basins more productive during times or available water supply. These older facilities were developed in a time prior to SGMA when groundwater recharge efforts were viewed very differently. Many recharge basins were viewed as primarily being emergency spill locations for ditch systems, which lead to the turnout capacities being much smaller than optimal. Kings CWD has evaluated its existing facilities over the flood years of 2017 and 2019 and found that capacity improvements would significantly increase groundwater recharge at several existing facilities. Efforts at these facilities could be undertaken very quickly as the properties are already owned by Kings CWD and the issues at each site are well understood. The existing basin locations are: Smith, Azevedo, Railsback, Rose, Walker, Weidman, Nehls, Kishue, and Star-Height.

***Project Benefits:***

The Improved Basin Turnouts Project (Project) is intended increase existing facilities capacity to divert surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to increase surface water diversions on the order of 3,000 AF each wet year with a like amount of increased groundwater recharge. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 15,000 AF is expected.

*Wet Yr Benefit:* 3,000 AF recharge

*Dry Yr Benefit:* 0 AF reduced pumping

***Construction Start Date:***

Planning/Design/Environmental

06/01/21 – 10/31/21

Construction

11/01/21 – 06/01/23

***Project Cost:***

\$1,350,000

***Proponent:*** Kings CWD

***County:*** Kings

***Subbasin:*** Tulare Lake

***GSA:*** Mid-Kings River

**PROJECT LIST FOR POTENTIALLY AVAILABLE GRANT FUNDS**

**ADDITIONAL 800 ACRES OF RECHARGE BASINS:**

***Project Description:***

Kings CWD plans to develop roughly 800 acres of additional groundwater recharge basins throughout its service area to put available wet year surface water to beneficial use. There are many priorities in the Kings CWD area that are sandy and would have high recharge rates. These properties will be investigated so that facilities can be developed to put floodwater to use during extremely wet years like 2011, 2017 and 2019. In these years, ag demand is very low given the amount of precipitation that falls, so local recharge basins are critical components for the beneficial use of available surface water. These facilities will be developed to use water both from the Kings River as well as the Kaweah River through existing water rights. Kings CWD is working with qualified consultants to evaluate soil conditions at potential basin locations. This has historically be done with soil borings, but more recently with a TowTEM system operated by Ramboll. Local conveyance systems generally have sufficient capacity to deliver floodwater for recharge during wet conditions. The development of each recharge basin would include the acquisition of the property, the excavation and earthwork for the basin development, the construction of diversion and measurement facilities from existing canals and the modifications of any existing structures as necessary.

***Project Benefits:***

These basins are intended to receive surplus surface water in wet years and recharge the underlying groundwater aquifer from which many local landowners pump. The Project is expected to receive surface water on average every 4 to 5 years and recharge amounts will be on the order of 60,000 AF each wet year. Over the next 20 years of Tulare Lake Subbasin GSP implementation, a total infiltration volume of roughly 300,000 AF is expected.

*Wet Yr Benefit:* 60,000 AF recharge

*Dry Yr Benefit:* 2,400 AF reduced pumping

***Construction Start Date:***

Planning/Design/Environmental

01/01/22 – 12/31/25

Construction

01/01/23 – 12/31/30

***Project Cost:***

\$37,200,000

***Proponent:*** Kings CWD      ***County:*** Kings

***Subbasins:*** Tulare Lake & Kaweah

***GSAs:*** Mid-Kings River & Greater Kaweah