

FRESNO IRRIGATION DISTRICT

HORNOR AND LAUB RECHARGE BASINS

FRESNO COUNTY, CA



**Application Submitted to the United States Bureau of Reclamation for a
WaterSMART: Drought Response Program
Funding Opportunity No. R24AS00007**

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1 . TECHNICAL PROPOSAL

(A) EXECUTIVE SUMMARY

General Project Information

Proposal Name: Hornor and Laub Recharge Basins

Date: October 31, 2023

Applicant Name: Fresno Irrigation District

City, County, and State: Fresno, Fresno County, California

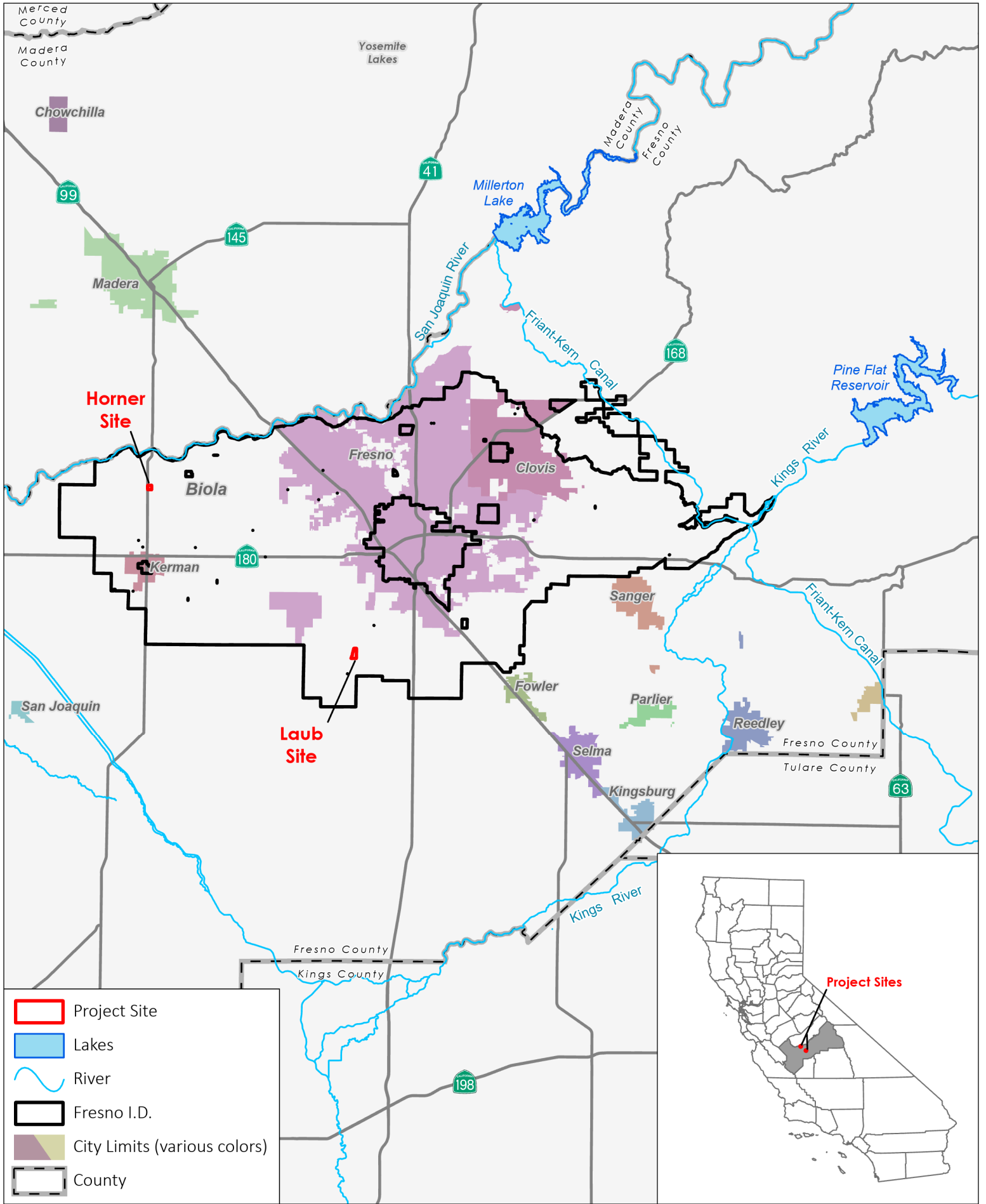
Project Summary

The Fresno Irrigation District (FID) is a Category A applicant and provides agricultural water to approximately 247,000-acre area in Fresno County, California. The District proposes to construct 115 acres of recharge basins, monitoring wells, inlet structures, outlet structures and flow measurement equipment. The project will capture and recharge flood and storm water that would otherwise leave the region. Nearby landowner wells will pump the recharged water during drought or dry periods. The basins will also serve as a regulation reservoir for short-term storage. The project will raise groundwater levels, increase groundwater storage, reduce groundwater pumping costs in the local area, and benefit a local disadvantaged community area. Groundwater recharge is estimated to average about 2,350 AF/year based on local hydrology.

The property is already owned by FID and the CEQA process has been completed. The project will not include any modification to Federal facilities. An environmental evaluation did not identify significant issues or hurdles to project development. The project includes components of a Task A Project (recharge basin) and Task B Project (groundwater recovery through neighboring wells), Task C Project (flow measurement equipment) and will be implemented by a California Water District. There are no project partners, and the project is not a phase in a larger overall project. However the District has acquired over 400 acres of land to construct additional recharge basins and these two locations are a part of the plan and considered one project for the purposes of this application. Preliminary design has already started. The project can be completed well within the three year required term. The total project cost is estimated to be \$10,000,000 with a requested grant of \$5 million.

(B) PROJECT LOCATION

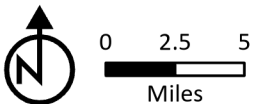
The proposed project includes construction of two new recharge basins totaling approximately 112 acres. The sites are located at the SE corner of Ashlan and Madera Avenues, APN 016-330-20, and the SW corner of American and Marks APN 035-300-41 in Fresno County. The project is located in the western portion of Fresno Irrigation District (FID). FID was organized in 1920 and has a service area of approximately 247,000 acres and diverts San Joaquin River and Kings River water into the 680-mile canal and pipeline distribution system for both agricultural and municipal water uses. Refer to **Appendix A** for an aerial photograph of the project location and parcels. **Figure 1** is a vicinity map of the project. The project latitude is 36.791283°N and the longitude is -120.058416°W.



Fresno Irrigation District

Vicinity Map

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(C) PROJECT DESCRIPTION

The proposed project includes construction of two basins totaling approximately 115 acres. Water from the Kings River and San Joaquin River (Friant Division of Central Valley Project) will be delivered to the basin. The property was previously planted in grape vines and has been since purchased by FID and cleared. **Appendix A** includes preliminary design drawings and a Basis of Design Memorandum for the project. The proposed project includes the following components:

- Recharge Basin. The recharge basin will include up to two recharge cells at each site to allow for operational flexibility and maintenance. The levees will be less than 6 feet tall.
- Wells. As many as two monitoring wells will be installed at each site to monitor changes in groundwater levels.
- Piping and Connections. An inlet structure and outlet structure on the adjacent canals will allow for water to be delivered to and drained from the basins.
- Monitoring and Control. The project will include a flowmeters to measure inflow and outflow, and a staff gauge in each cell to monitor infiltration rates.

(D) PERFORMANCE MEASURES

The following performance measures will be used to evaluate the project:

- Volume of water delivered to the recharge basin
- Volume of water left in the aquifer as a benefit to the region
- Change in local groundwater levels as measured in the monitoring wells
- Change in regional groundwater levels and regional groundwater storage
- Recharge rates based on observed seepage using two staff gauges

(E) EVALUATION CRITERIA

EVALUATION CRITERION A—PROJECT BENEFITS

Sub-Criterion A1: Available Water Supplies and Water Better Managed

Sub-Criterion A1.a: Adds to Available Water Supplies

- *How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?*

Long-Term Resilience to Drought. The project will capture and recharge flood and storm waters that typically leave the region. The project will provide an average of 2,350 AF/yr of groundwater recharge (10-year average). Groundwater recharge is needed to halt the current groundwater overdraft in the region, and help FID achieve groundwater sustainability. The project will provide regional benefits over the entire 247,000-acre District, since new water supplies will increase the allocation for all water users. The project is not intended to provide water supply for population growth or new cropping, but rather to help improve water reliability in future droughts, helping the area reach sustainability.

Project Life Expectancy. The life expectancy of the project is conservatively estimated to be 50 years based on a combination of FID experience, manufacturer’s information, and life expectancies listed for various facilities in *Design and Operation of Farm Irrigation Systems*, ASAE Monograph No. 3, 1981 (pg 58). Over the 50-year life of the basin recharge is estimated to be 36,000 AF. With proper maintenance the facilities could last more than 50 years.

- *What percentage of the total water supply does the additional water supply represent? How was this estimate calculated?*

On average, the percentage of water recharged would be $2,350 \text{ AF} / 500,000 \text{ AF} = 0.47\%$ of the total annual water delivered by FID. In a significantly dry year, the water recharged would comprise $2,350 \text{ AF} / 250,000 \text{ AF} = 0.94\%$ of the total annual water delivered by FID.

- *What is the estimated quantity of additional supply the project will provide and how was this estimate calculated? Provide the quantity in acre-feet per year as the average annual benefit over ten years (e.g., if the project captures flood flows in wet years, state this and provide the average benefit over ten years or longer including dry years)*

Water recharged at the project will include flood waters and other water supplies that would otherwise flow out of the area either due to inadequate surface storage or lack of demands when the water is available. The water supplies available for recharge include: floodwaters (local stream floodwater, local stormwater, Kings River floodwater, Central Valley Project (CVP) Friant Division Section 215 Water from the San Joaquin River), CVP Friant Division Class II Water, CVP Friant Division Uncontrolled Season water, CVP Friant Division Unreleased Restoration Flow (URF) water, Recovered Water Account, and Kings River Fisheries Management water.

Previous analysis in the 2022 North Kings Groundwater Sustainability Plan (Section 3.4 – Water Supply for Augmentation) determined that these water supplies would be available on average for 120 days every 4 out of 10 years. The project will have a wetted area of 98 acres. The infiltration rate was estimated to be 0.5 feet/day based on the local soils, as well as observed recharge rates at other nearby FID recharge basins, including Wanger Basin, Empire Basin and Lambrecht Basin. This results in the following annual project recharge: $120 \text{ days} \times 4/10 \text{ years} \times 98 \text{ acres} \times 0.5 \text{ feet/day} = 2,350 \text{ AF/year}$.

- *Provide a qualitative description of the degree/significance of the benefits associated with the additional water supplies.*

The new water supply is significant for the following reasons:

- **Groundwater Sustainability.** The project is located in the Kings Groundwater Subbasin, which was determined in California Department of Water Resources Bulletin 118-03 to be a “critically overdrafted” basin. FID must also now manage their groundwater sustainably due to new state laws, so utilizing all available water supplies is imperative.
- **Permanent Plantings.** Having a secure water supply is particularly important for FID since about 85% of the irrigable acres are planted in permanent crops, and farmers have little ability to reduce demand or fallow land during droughts. The project will store water for use in droughts and reduce the need for fallowing and vine/tree losses in droughts.

- **Regional Project Benefits.** The project will benefit the entire area served by FID, which covers 247,000 acres. The recharged water will benefit a local area, and the recovered water will be delivered to an area covering about 13,000 acres. However, the recovered water will increase the water supply available to all FID landowners and stakeholders.
- **Disadvantaged Community Benefits.** One of the sites is due north of the City of Kerman, a disadvantaged community, and both sites are located within a DAC census tract, and will raise their water levels and improve their water quality.

Sub-Criterion A1.b: Water Better Managed

- *How will the project build long-term resilience to drought? How many years will the project continue to provide benefits??*

See answers under Sub-Criterion A1.a above.

- *How will the project improve the management of water supplies?*

Water management improvements will include the following:

- **Improved Groundwater Quality.** San Joaquin River and Kings River water will be delivered to the Basin. Both of these water supplies originate in the Sierra Nevada Mountains and have excellent water quality. This water will mix with lower quality groundwater, and, through blending, will improve the local groundwater quality.
- **Utilizing Surplus Water Supplies.** The project area generally has a deficit of surface water supplies. However, in certain periods, due to a rainy season or large storms, there is inadequate reservoir capacity to store the water and it flows out of the region. The project will help capture and beneficially use these water supplies.

- *How will the project increase efficiency or operational flexibility?*

The project will improve efficiency and operational flexibility as follows:

- **Increase Portfolio of Water Supplies.** FID has several water supplies and sources. The Project will improve the flexibility of District water operations by increasing the portfolio of water supplies available. The project will also improve operational flexibility by providing FID a convenient on-demand supply that can be used any time of the year.
- **Long-term Flow Regulation.** FID's surface water is stored in Millerton Lake and Pine Flat Reservoir. These reservoirs have specific operational criteria; capacity is limited often resulting in spills and early releases when demands are low. In some years carry-over storage is also limited or there is the risk of losing the carry-over water. FID will have full control over water stored in the project and will be able to store water for longer periods. This will also free up valuable reservoir storage capacity for other water users. Lastly, the reservoirs suffer considerable evaporation losses while banked water has minimal evaporation losses.
- **Short-Term Flow Regulation.** The project can also be used as a short-term regulation reservoir, since there will be an outlet structure to nearby Canals. The project will provide about 400 AF of short-term storage capacity. Regulation reservoirs are important in the FID

conveyance system for providing water supplies when requested, preventing operational spills, and increasing the overall flexibility of operations.

- *What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated? Provide this quantity in acre-feet per year as the average annual benefit over ten years.*

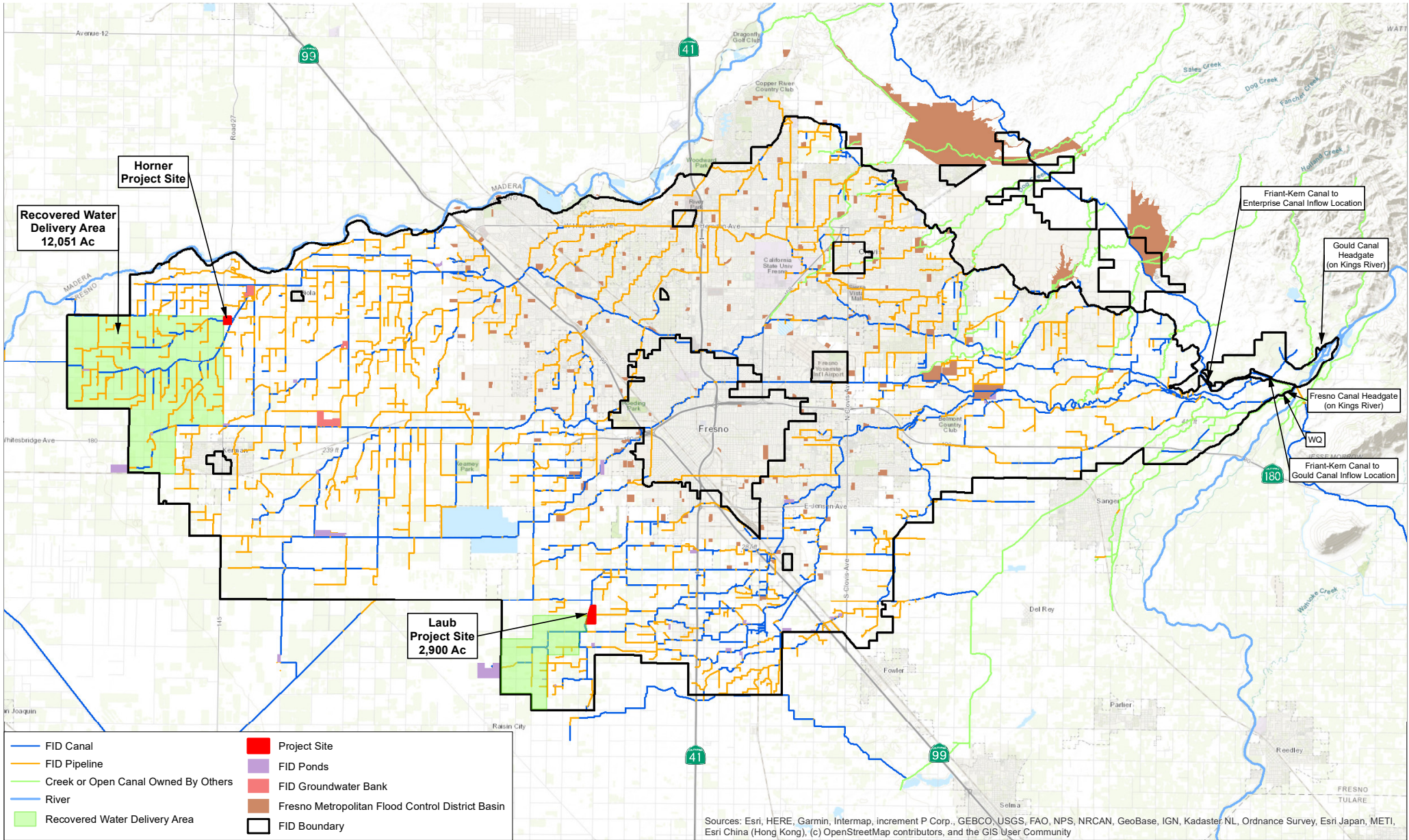
All of the water recharged and recovered will be better managed through either short-term storage or long-term storage. The water recharged is estimated to average 2,350 AF/year.

- *What percentage of the total water supply does the water better managed represent? How was this estimate calculated?*

It is expected that water will be stored up to three years before recovery. In a normal year, the percentage of water better managed through long-term storage would be $3 \times 2,350 \text{ AF} / 500,000 \text{ AF} = 0.4\%$ of the water delivered by FID. In a dry year, the water better managed would comprise $3 \times 2,350 \text{ AF} / 250,000 \text{ AF} = 0.9\%$ of the water delivered by FID.

- *Provide a brief qualitative description of the degree/significance of anticipated water management benefits.*

The project will recharge water that will be recovered by landowners in FID through their nearby wells, providing additional supply during dry or drought periods. Approximately 13,000 acres downgradient of the project will benefit from the groundwater, as shown in **Figure 2**. This will provide significant operational benefits to FID.



Fresno Irrigation District
 Horner Recharge Basin Recovered Water Delivery Area

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The proposed project is north of the City of Kerman, a Disadvantaged Community (see [Error! Reference source not found.](#)), and is located with a DAC census tract. The recharged water will raise their groundwater levels, help maintain the capacity of their wells, and improve their groundwater quality.

Additional long-term storage capacity is significant due to storage limitations at Millerton Lake and Pine Flat Dam. FID can store water in each reservoir, but this storage is subject to the operations criteria of the facility and FID can only store water for a limited period. The two reservoirs also lack sufficient carry-over storage capacity to balance the wet and dry year needs for conservation storage. The project will add additional groundwater storage to partially compensate for the shortage of surface storage.

- *Will the project make new information available to water managers? If so, what is that information and how will it improve water management?*

New information will be available from the measured diversions into the basin for recharge/regulation, new monitoring well and data collected on recharge using the two staff gauges. Geologic logs will be developed during well construction that will provide information about the local geology. Water levels in the wells will provide information on project operations, as well as data for developing regional groundwater contour maps and estimating change in groundwater storage. Each of the basin cells will have a staff gauge that will provide information on the soil infiltration potential in the area.

Wells

What is the estimated capacity of the new well(s), and how was the estimate calculated?

The project will include a monitor well at each site. No recovery well is planned.

How much water do you plan to extract through the well(s), and how does this fit within and comply state or local laws, ordinance, or other groundwater governance structures applicable to the area?

No recovery well is planned with the project. Water recharged at the basin will replenish the aquifer. FID is a conjunctive use District and most landowners within the District have wells to use for supply during dry or drought periods. The project planned is a critical component of the North Kings Groundwater Sustainability Agency's approved Groundwater Sustainability Plan that requires the region to reach groundwater sustainability by 2040.

Will the well be used as a primary supply or supplemental supply when there is a lack of surface supplies?

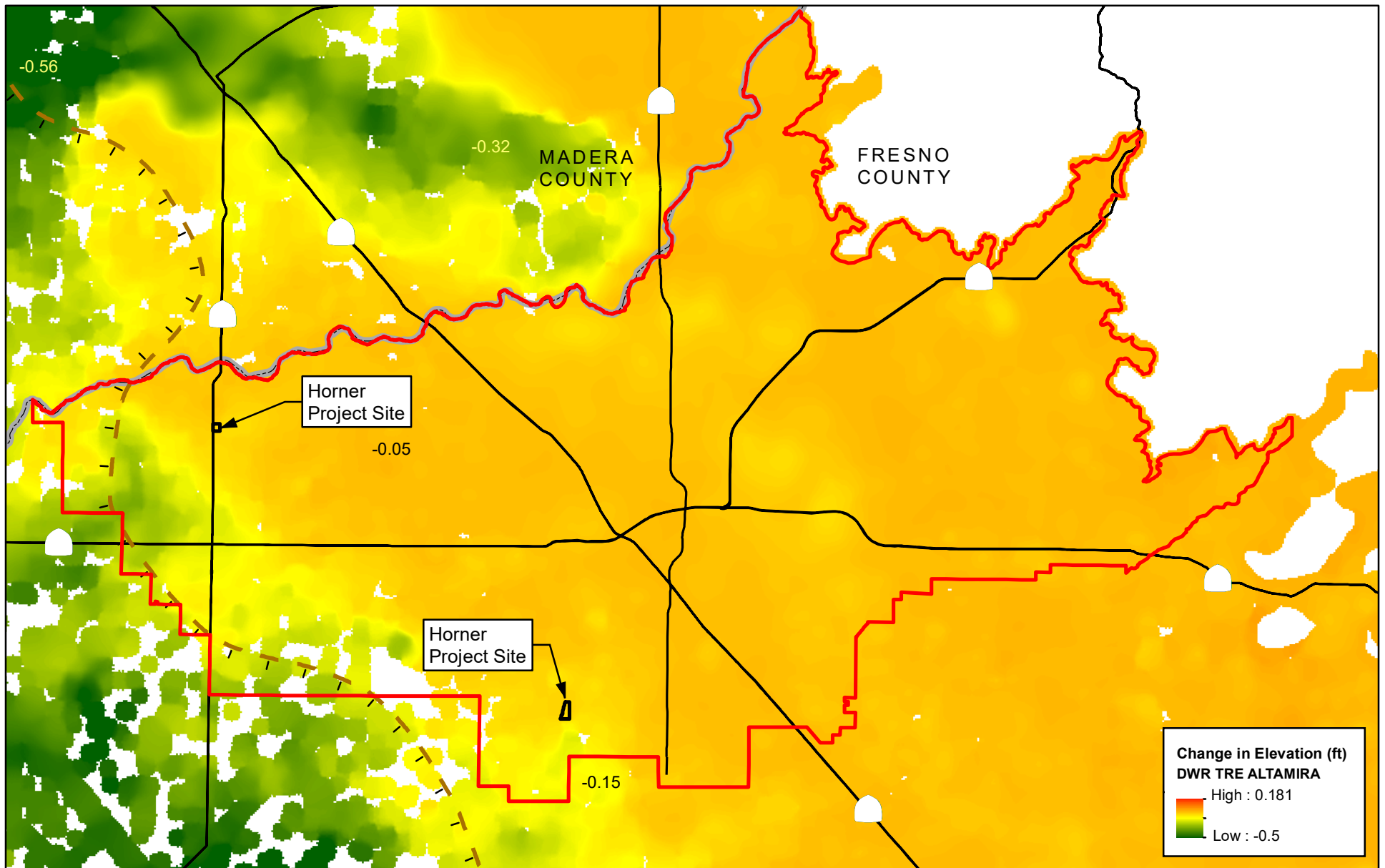
No recovery well is planned with the project.

Provide information documenting that proposed well(s) will not adversely impact the aquifer it/they are pumping from (overdraft or land subsidence). At a minimum, this should include aquifer description, information on existing or planned aquifer recharge facilities, a map of the well location and other nearby surface water supplies, and physical descriptions of the proposed well(s) (depth, diameter, casing description, etc.). If available, information should be provided on

nearby wells (sizes, capacities, yields, etc.), aquifer test results, and if the area is currently experiencing aquifer overdraft or land subsidence.

No recovery well is planned with the project. As described, the project is located within an area of overdraft. The project will help reduce groundwater overdraft and provide an improvement to overall aquifer conditions as the project will recharge additional water supplies at the basin location. FID and the NKGSA closely monitor groundwater conditions within the area. FID typically develops a monitoring network consisting of nearby wells to monitor any effects of the project. A new monitor well may also be constructed as part of the project if nearby wells are not suitable. A site plan and preliminary construction plans are included in **Appendix A**. Well sizes within the area vary. The project is located within an agricultural area within some rural residences. Well within the project area are typically 200-400 feet deep. Domestic wells are typically shallower.

FID and the proposed project is located within the North Kings Groundwater Sustainability Agency (NKGSA). The project is included within the NKGSA's GSP as a priority project to improve groundwater conditions. As described in Section 4.6.1 of the North Kings GSA's GSP that has been approved by the California Department of Water Resources, *"The NKGSA has minimal to no land subsidence as described in detail in Section 3.2.6, and there have been no known significant impacts from land subsidence within the NKGSA."* Further, the GSP describes that subsidence primarily occurs from pumping below the Corcoran Clay, which is west of the project location as shown in **Figure 4**. **Figure 5** shows groundwater elevation contours and that project will increase groundwater levels and improve water quality within the area.



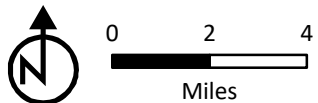
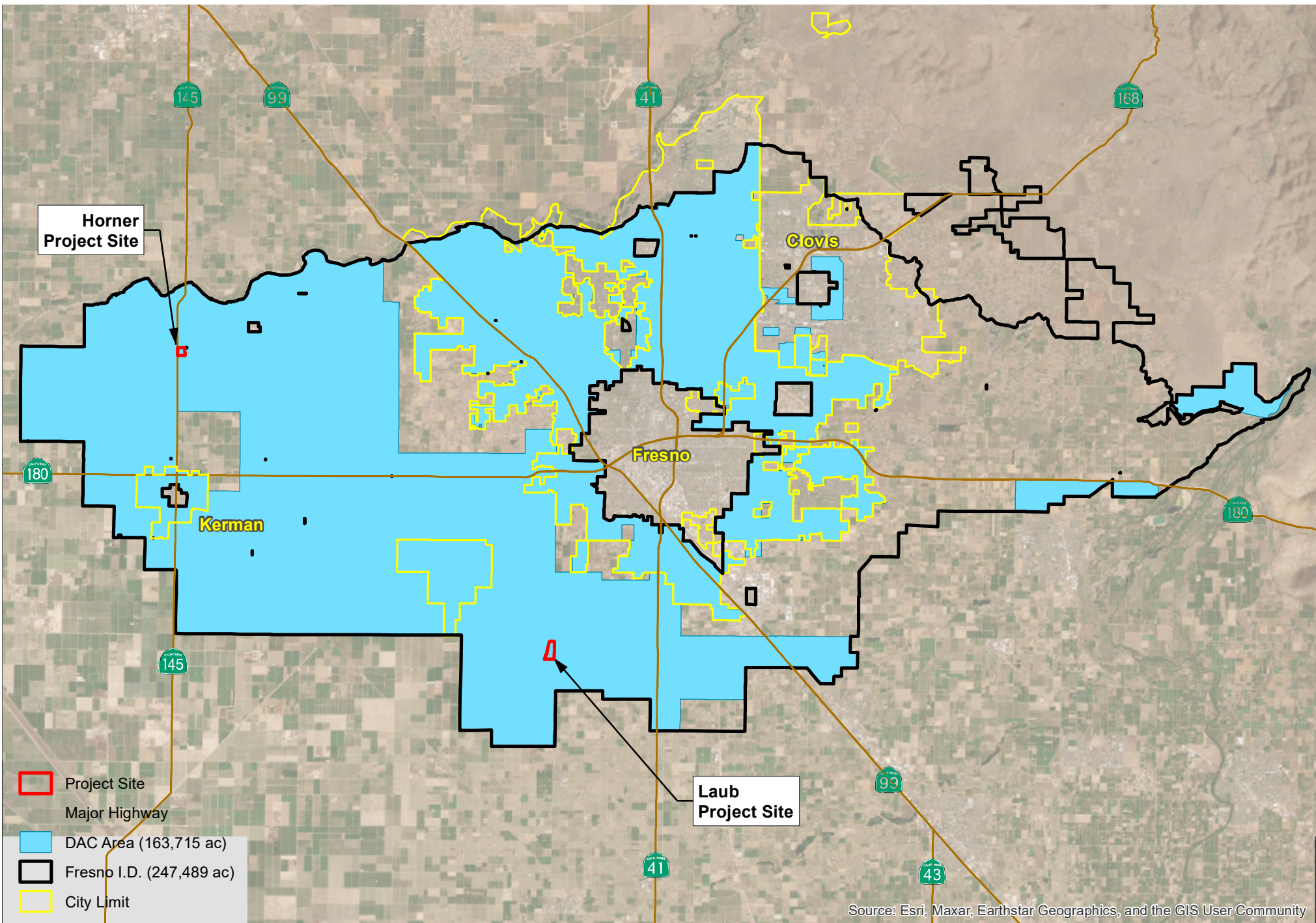
Legend

- North Kings GSA
- County
- E Clay Eastern Extent (Page and LeBlanc1969, modified by KDSA)

The legend shows the change in ground surface elevation from June 2015 to April 2017. The positive values indicate rebound while the negative values indicate land subsidence.

**Change in Elevation (ft)
 DWR TRE ALTAMIRA**

High : 0.181
 Low : -0.5



Fresno Irrigation District

Disadvantaged Community Areas within Fresno Irrigation District

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INC.

Describe the groundwater monitoring plan that will be undertaken and the associated monitoring triggers for mitigation actions. Describe how the mitigation actions will respond or help avoid any significant adverse impacts to third parties that occur due to groundwater pumping.

As noted, no recovery well is planned for the project. All recharge deliveries will be measured with flow meters and closely monitored and reported by FID. At each project site, FID develops a detailed monitoring plan that includes neighboring wells. A copy of the Table of Contents for the Monitoring Plan for another one of FID’s facilities is included in **Appendix A**. FID will collect frequent water level readings at the nearby wells, and construct an additional monitor well at the site if nearby wells are not suitable.

Other Project Components

The project will use well-tested flow measurement and water level measurement equipment that have been in service within the District for many decades. The additional monitor wells near the basin will provide additional groundwater level data that could help estimate groundwater changes and any needed mitigation action triggers for the area to reach sustainability. The project will not include saltwater barriers or wells or new water marketing tool or program.

Sub-Criterion A2: Environmental & Other Benefits

Sub-Criterion A2.a: Climate Change

- *In addition to drought resiliency measures, does the proposed project include other natural hazard risk reductions for hazards such as wildfires or floods?*

The project can lessen flooding on the San Joaquin River and Kings River. The project will primarily recharge stormwater, flood water and high flows from the local streams and rivers. Having additional areas to take flows off the river or local streams in flood events could be the difference in flow that prevents overtopping of a levee or embankment downstream, as experienced this past year particularly along the Kings River.

- *Will the proposed project establish and use a renewable energy source?*

The electrical energy supplied to the well pumps in the area is supplied by Pacific Gas & Electric Co. (PG&E), who delivered 50% of their electricity from renewable resources in 2021 that qualify under California’s Renewable Portfolio Standard (RPS) (https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page?WT.mc_id=Vanity_cleanenergy retrieved 06/02/2022). Therefore 50% of energy used by the project will be renewable. The District is also considering solar powered operational gates for controls at the site, and may add a solar array.

- *Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation?*

The project will improve water reliability for agriculture as well as the Disadvantaged Communities in the area. The project will help keep lands within FID in agricultural production, which will continue to sequester carbon in the soils.

- *Does the proposed project include green or sustainable infrastructure to improve community climate resilience, including reducing the energy needed to manage water?*

Energy will be saved by raising groundwater levels and reducing pumping lifts. If it is assumed that the recharged water spreads out over ten square miles, then water levels will rise several feet each year. It is assumed that this water is available on average for two years before it is pumped out and used. Using these criteria energy savings will be about 317,000 KWH which has a value of about \$48,000. This also equates to a reduction in greenhouse gasses of 224 metric tons/year (see **Appendix C** for calculations).

- *Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?*

Energy will be saved by raising groundwater levels and reducing pumping lifts for nearby wells. **Appendix C** includes assumptions and calculations showing that the project will reduce greenhouse gasses by 224 metric tons/year.

- *Does the proposed project have a conservation or management component that will promote healthy lands and soils or serve to protect water supplies and its associated uses?*

The project will provide additional storage/recharge capacity that will capture and beneficially use water that would otherwise be lost to the region.

- *Does the proposed project contribute to climate change resiliency in other ways?*

Climate change is expected to result in more precipitation as rainfall and less as snowfall. Hence, the watershed will have lower ability to serve as a reservoir for storing water. The recharge basin will serve as an alternative way to store water if runoff volumes increase or change because of climate change.

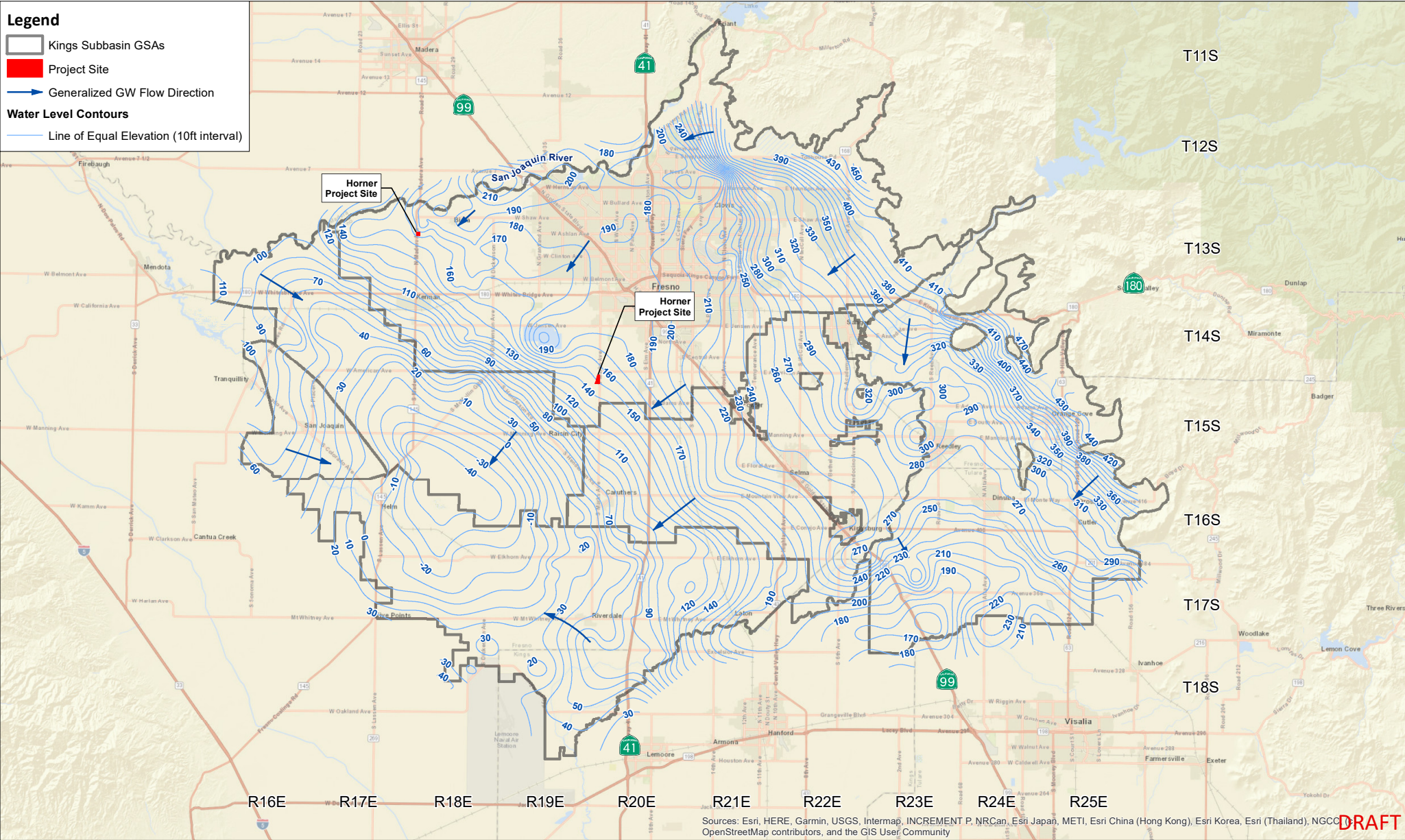
Sub-Criterion A2.b: Environmental Benefits

- *Does the project seek to improve ecological climate change resiliency of a wetland, river, or stream to benefit to wildlife, fisheries, or habitats? Do these benefits support an endangered or threatened species?*

The proposed project will add to FID's portfolio of water supply options, and will reduce demand for other water supplies, or the timing of demand, from the San Joaquin River and Kings Rivers. This may result in providing greater storage capacity available behind the dams on the river or reduce flood flows in the river. This could benefit federally-recognized candidate species, threatened species and endangered species in and around the two rivers. It is not feasible to precisely quantify the project's environmental benefits due to the complexity of river operations and endangered species habits and life cycles. However, reducing reliance on river water could have a real and tangible benefit to numerous threatened and endangered species.

Legend

- Kings Subbasin GSAs
- Project Site
- Generalized GW Flow Direction
- Water Level Contours**
- Line of Equal Elevation (10ft interval)



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, **DRAFT** OpenStreetMap contributors, and the GIS User Community



Kings Subbasin Coordinated Effort
Spring 2020 Groundwater Elevation Contours

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11/27/2023 6:57 Fresno ID - 1038103823005-Laub Basin\400 GIS\Map\GrantApp\groundwater_flow.mxd

• *What are the types and quantities of environmental benefits provided?*

FID plans to develop a groundwater bank that stores water and also improves wildlife habitat. Accordingly, the project will include numerous design features to enhance habitat for terrestrial, upland, waterfowl and aquatic species.

Project Features Benefitting Endangered Species

The project sites will be converted from agricultural land to recharge basins that are periodically flooded. This will provide the following benefits to local wildlife:

- Creation of waterfowl, upland, wetland and aquatic habitat
- Resting, roosting, nesting, drinking, and foraging habitat for waterfowl, shorebirds, resident and migratory birds and a variety of other wildlife
- Waterfowl habitat for bird species on the Pacific flyway
- Water supply for terrestrial wildlife
- Reduction in fugitive dust and pesticide applications from changing the land use

The project will also include the following features that will improve wildlife habitat:

- Flat Levee Slopes. Interior levee slopes will be 5H:1V, which will promote the growth of native wetland and upland vegetation to provide wildlife habitat.
- Varying Water Depths. Water depths in the basin will frequently vary, providing a variety of habitat environments for different species, including foraging areas for waterfowl, shorebirds, and other wildlife.
- Interior Levees. The basin will include interior levees that will provide semi-isolated habitat and safer conditions from predation.

These features will significantly improve habitat for local wildlife, which has been highly disturbed for many years due to agricultural activity.

• *Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?*

The project could help reduce demands on water supplies in the San Joaquin River and Kings River, which support various aquatic and terrestrial endangered species.

Sub-Criterion A2.c: Other Benefits

• *Will the project assist States and water users in complying with interstate compacts?*

No.

• *Will the project benefit multiple sectors and/or users? Describe the associated sector benefits.*

The project will benefit multiple sectors including agricultural, rural and urban water users. The project will directly increase water supplies for agricultural water users. The local landowners with domestic wells and nearby disadvantaged communities will benefit from higher groundwater levels and improved water quality. FID also has an agreement with the City of Clovis to provide them a supplemental surface water supply, which would eventually provide them up

to 7,000 AF/year. The project could make more water available for this transfer or other water marketing opportunities. The project will also provide operational flexibility for FID to meet its obligations under the Kings River Fisheries Management Program. As part of this program, FID is required to convey water in the Kings River to its diversion point to maintain river flows particularly in non-irrigation periods and longer in drier years. The project will provide a location for these waters to be conveyed and later recovered by nearby wells, thereby providing a multi-use benefit for the routed water and preventing lost water to the region.

- *Will the project benefit a larger initiative to address sustainability?*

FID is required to comply with California’s Sustainable Groundwater Management Act (SGMA), which requires groundwater basins to gradually achieve sustainability from 2020 to 2040. FID is located in the Kings Groundwater Subbasin, which is considered ‘critically overdrafted’ by the State of California. Surface water supplies are fully allocated in the area, so new supplies can only be realized by capturing flood waters that normally leave the region during floods and wet years. The project will capture, store and later recover such flows, and subsequently reduce the need for growers to pump from private wells.

- *Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?*

Yes, the project will help FID and the basin to reach sustainability by capturing and recharging flood waters that would then be available for recovery in drier years through nearby wells. The NKGSA’s GSP was approved, which has helped reduce tension in the area, however there continues to be significant work required to reach sustainability by 2040. This project is a critical component of FID’s plan to increase recharge in the area, helping to replenish the aquifer and ultimately reduce tensions caused by overdraft.

EVALUATION CRITERION B - PLANNING AND PREPAREDNESS

The District’s Drought Management Plan (2016) is found in **Appendix B**. The Plan is the primary drought management strategy document used by the District, is a supplement to the District’s Water Management Plan and is the focus of the discussions below. Supplementary documents include the Kings Basin Integrated Regional Water Management Plan (IRWMP) (2018) and North Kings Groundwater Sustainability Plan (revised 2022), both regional documents. They both address climate change since that is best addressed on a watershed scale. Project lists have been maintained in the Kings Basin IRWMP for many years and are not included in the Drought Management Plan since the efforts would be duplicative.

These two documents are not provided due to their size but can be found at the following links:

Kings Basin Integrated Regional Water Management Plan:

<https://www.kingsbasinauthority.org/governance/governing-documents/irwmp/>

North Kings Groundwater Sustainability Agency

<https://northkingsgsa.org/groundwater-sustainability-plan/>

- *Does the drought plan contain drought focused elements (e.g., a system for monitoring drought projections that consider climate change, identification of drought mitigation projects, drought response actions, and an operational and administrative framework)?*

The FID Drought Management Plan was prepared to specifically address drought in FID, and not in a larger regional area. The plan includes the following drought-focused elements (sections):

- Drought Monitoring
- Water Shortage Allocations
- Operational Adjustments (response actions)
- Demand Management (response actions)
- Dry Year Alternative Water Supplies (mitigation actions)
- Stages of Actions
- Coordination and Collaboration
- Revenue and Expenditure Impacts

The two supplementary reports, the Kings Basin Integrated Regional Water Management Plan and North Kings Groundwater Sustainability Plan, include a list of prioritized projects and detailed analysis of climate change impacts.

- *Describe how the drought plan includes consideration of climate change impacts to water resources or drought?*

FID's Drought Management Plan acknowledges that if *"global climate change predictions indicating less precipitation as snow and more as rainfall are correct, then increased reservoir storage will be essential in the future to capture water for beneficial uses"*. This concern is the impetus for developing additional recharge projects.

The Kings Basin IRWMP (Chapter 17) and North Kings GSP (Section 3.3.10) are regional water management documents, and address climate change more comprehensively, since it is best evaluated on a regional or watershed scale. Topics discussed in these documents include water supplies, water demands, impacts to river flows, impacts to precipitation, and a climate change vulnerability assessment checklist. Climate change impacts are also directly incorporated into a water budget in the North Kings Groundwater Sustainability Plan.

- *When was the plan developed and how often is it updated?*

FID's Drought Management Plan was developed in 2016 and is updated every five (5) years in conjunction with FID's Agricultural Water Management Plan that was last updated in 2021.

- *Was the drought plan developed through a collaborative process?*

The Drought Management Plan acknowledges that FID coordinates and collaborates extensively with others to coordinate operations in all years. This outreach effort includes coordination with Kings River Water Association, cities of Fresno and Clovis, USBR and other partnerships.

- *Describe who was involved in preparing the plan and whether the plan was prepared with input from stake holders with diverse interests such as water, land, or forest management*

interests.

The Drought Management Plan was developed as a supplemental document to the District’s Water Management Plan. The Water Management Plan was adopted at an advertised public hearing in 2021. The plan was adopted by the District Board of Directors, which is composed entirely of local landowners, thus signifying support from local water users. There was no known public opposition to the Plan. In addition, page 11 of the Drought Management Plan includes a section on Coordination and Collaboration that discusses FID’s established protocols for working with other agencies during droughts.

The two supplementary documents were both developed with significant outreach and stakeholder involvement. The outreach included public meetings, soliciting public comments, websites, social media, email lists, public notices, public meetings, outreach materials, committees and workgroups. These outreach efforts are described in Section 2.5 of the Kings Basin Integrated Regional Water Management Plan and Section 2.5 of the North Kings Groundwater Sustainability Plan.

- *Describe the process used for interested stakeholders to provide input during the development of the plan.*

As noted above, the development of the IRWMP and GSP included significant outreach, stakeholder engagement, technical workgroups comprised of a wide cross section of all stakeholders within the District and area. Groundwater sustainability has become the primary driver of drought management within the area because of the dependence on groundwater within the area. The Plans were adopted by the Board of Directors at public noticed processes that solicited input and engagement.

- *If the plan was prepared by an entity other than the applicant describe whether and how the applicant was involved in the development of the plan. If the applicant was not involved in the development, explain why.*

FID’s Drought Management Plan was prepared by FID staff as a supplemental document to the District’s Agricultural Water Management Plan.

- *Describe how your proposed drought resiliency project is supported by an existing drought plan.*

The Kings Basin IRWMP discusses Resources Management Strategies for Conjunctive Use and Drought Planning. The report states:

“In the Kings Basin, the most appropriate response to drought planning is to develop conjunctive use and groundwater banking projects that reduce overdraft and capture wet year water for storage in the groundwater basin.”

- *Does the drought plan identify the proposed project as a potential mitigation or response action?*

The FID Drought Management Plan identifies ‘Dry Year Alternative Water Supplies’ as a possible mitigation action. The Plan also notes that the District’s Class 2 Friant CVP supply is typically only

available in wet years. To utilize this supply, the water needs to be captured in wet years and stored for later use in more critical water years.

- *How is the proposed project prioritized in the drought plan?*

The proposed project was listed as a priority project in an FID memorandum on possible recharge basin sites (see **Appendix A**). These basins are also identified as the highest priority of FID’s remaining projects listed in the North Kings GSA’s GSP to help the District reach sustainability.

- *Does the proposed project implement a goal or need identified in the drought plan?*

The project meets the Drought Management Plan’s broad goals of reducing overdraft, finding dry year water supplies, and developing mitigation options for drought.

The Kings Basin IRWMP (Section 5.2) includes specific goals related to the project including the following:

- Regional Goal 1: Halt, and ultimately reverse, the current overdraft
- Regional Goal 2: Increase the water supply reliability, enhance operational flexibility and reduce system constraints
- Regional Goal 4: Provide additional flood protection

- *Is the supported goal or need prioritized within the plan?*

The project goal is to capture flood water in wet years for groundwater banking and recovery during dry years from District or neighboring wells. FID’s Drought Management Plan supports projects that align with that objective. FID’s groundwater recharge and banking program has been the foundation for its drought management activities and this project will continue to expand the program. The proposed project was listed as a priority project in an FID memorandum on possible recharge basin sites (see **Appendix A**). The project has been prioritized by the project as the next highest priority project for funding.

- *Attach relevant sections of the plan that are referenced in the application, as an appendix to your application.*

See **Appendix A**, as well as the previously mentioned GSP and IRWMP available online through the links reference.

EVALUATION CRITERION C—SEVERITY OF ACTUAL OR POTENTIAL DROUGHT OR WATER SCARCITY IMPACTS TO BE ADDRESSED BY THE PROJECT

- *Is the project in an area that is currently suffering from drought, or which has recently suffered from drought? Please describe existing or recent drought conditions.*

Although this past year was an historic wet year, it followed a three-year drought period of 2020-2022, which was soon after the historically worst drought of 2012-2016. The District has experienced numerous droughts over the past 22 years according to the US Drought Monitor (<https://droughtmonitor.unl.edu>). **Figure 6** shows the Drought Severity and Coverage Index for the Fresno, California Area for the past 22 years. This index ranges from 0 to 500. Zero means

that none of the area is abnormally dry or in drought, and 500 means that all of the area is in an exceptional drought. **Figure 6** shows that the area experienced some form of drought the majority of the time since 2000.

Drought conditions in California as of May 24, 2022 are shown below in **Figure 7**. According to this figure, 98% of California is currently experiencing a “Severe”, “Extreme” or “Exceptional” drought. The project site is shown on the figure and is within an area of “Extreme Drought”.

Figure 8 shows the groundwater level decline throughout FID versus surface water diversions. **Figure 9** shows Kings River runoff since 1895, including a trending decline, possibly due to climate change, change in watershed conditions, or some other factor outside of FID’s control.

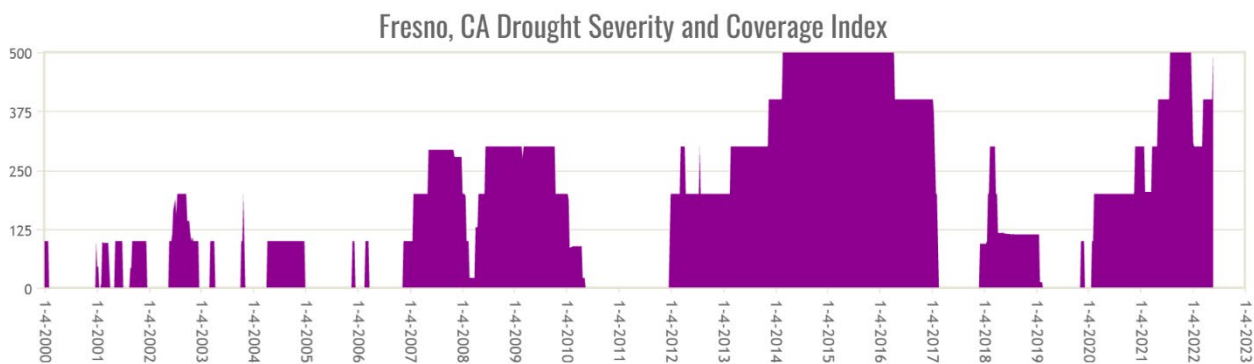


Figure 6 – Drought Severity and Coverage Index for Fresno, California Area

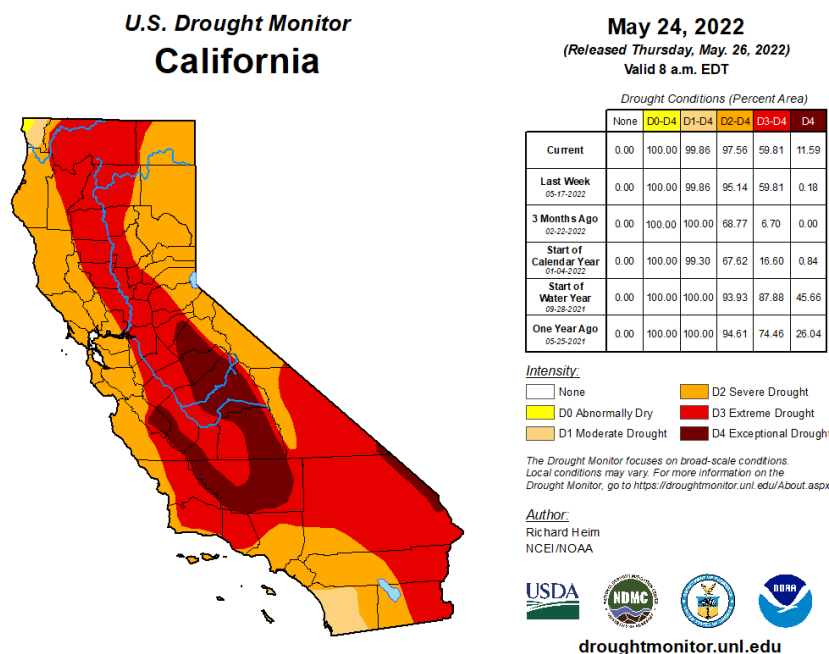
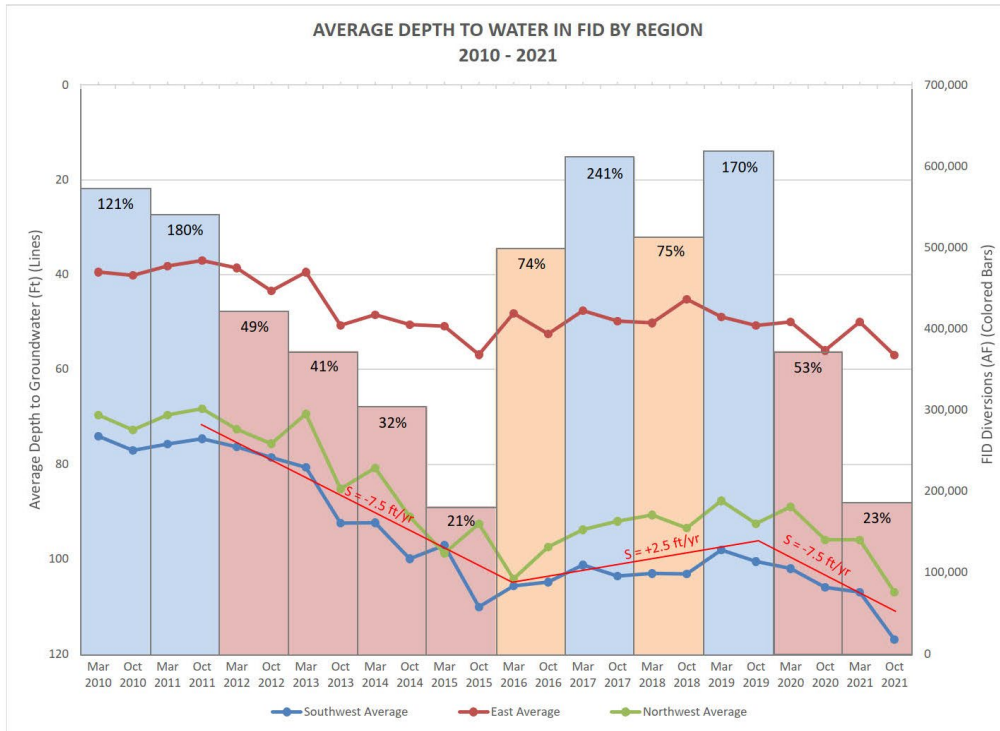


Figure 7 - U.S Drought Monitor Report (May 24, 2022)



Notes: FID Diversions are for calendar year (January - December). Percentages shown are Kings River water year runoff percent of normal.
 G:\Reports\FID\Groundwater\Depth to GW\Depth to Groundwater Report

Figure 8 – Groundwater Depth vs Surface Water Diversions

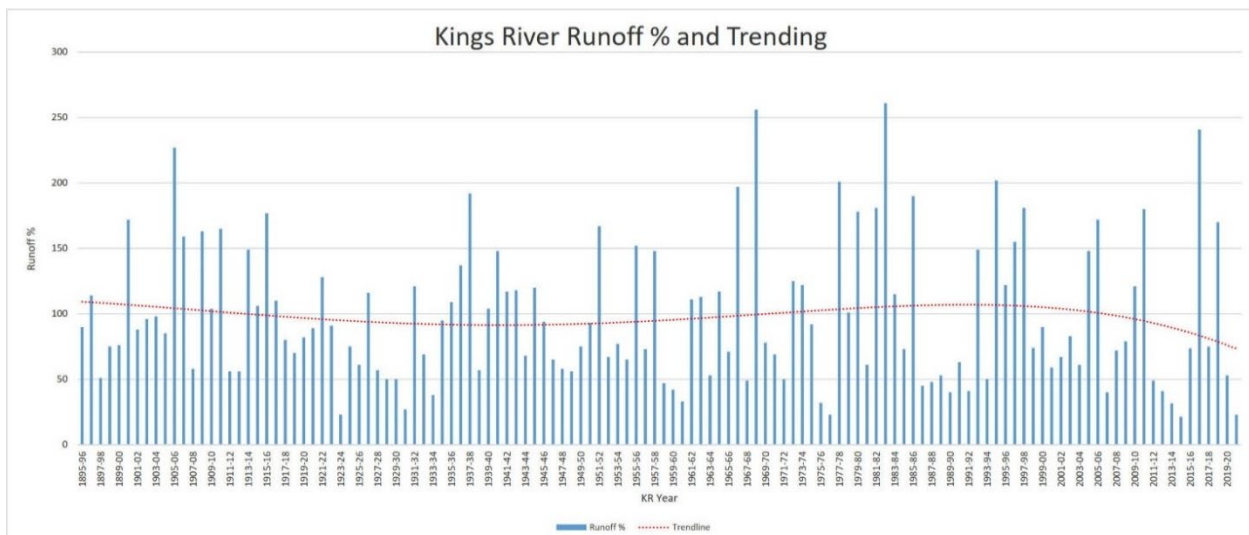


Figure 9 – Kings River Runoff (1895-2022)

- Describe any projected increases to the severity or duration of drought in the project area resulting from changes to water supply availability and climate change.

The 2022 North Kings Groundwater Sustainability Plan (Section 3.3.10) included an analysis of future water budgets, including the impacts of climate change by 2030 and 2070. The analysis predicted increases in evapotranspiration of 3% by 2030 and 8% by 2070. The analysis predicted only minor changes in precipitation or river flow, but also predicted ‘a major shift in timing’ of precipitation. The report concluded that ‘Maintaining the same level of water supply’ would require ‘increased recharge during non-irrigation and low-irrigation periods.’

- *What are the ongoing or potential drought or water scarcity impacts to specific sectors in the project area if no action is taken, and how severe are those impacts?*

Agricultural, rural residential and municipal water users are impacted by droughts in the FID area. These service sectors could all suffer from the following impacts. These impacts can all be serious due to the severity of droughts in the region.

- Groundwater level declines and reduction in groundwater storage
- Reduction in well yield
- Wells going dry
- Restrictions on groundwater pumping
- Higher water costs for water users
- Mandatory water conservation programs

In addition, agricultural water users could suffer from lower crop yield, crop losses and land fallowing. During the 2015 drought, FID water deliveries could only be provided for two weeks. For the first time ever, locks and explanatory tags were added to all the turnout control valves to discourage water theft.

- *Whether there are public health concerns or social concerns associated with current or potential drought conditions*

Public Health Concerns. Public health concerns include impacts to rural domestic and municipal water supplies that could prevent residents from having sufficient water for basic health and sanitation needs. During droughts, shallow domestic wells are the most susceptible to going dry. Private domestic pumpers and small communities within the area are dependent on groundwater for their supply in this area and are susceptible to groundwater level declines. The proposed project will raise groundwater levels and reduce demand for groundwater pumping, helping to address these concerns.

Social Concerns. The primary social concerns from drought are impacts to jobs and the economy, and the spread of poverty. Agriculture is the economic driver of the Fresno area. Fresno County is the number one agriculture producing county in the United States. According to the Fresno County Farm Bureau, every \$1 generated on the farm produces another \$3.50 in the local and regional economy. (<https://www.fcb.org/fresno-county-agriculture>). Job security could be jeopardized for farmers, farm workers, as well as those working in agriculture management, food processing and agricultural equipment and supplies.

- *Whether there are ongoing or potential environmental impacts.*

The reduced flows in local rivers and the reduced storage behind the local dams are impacting, and will continue to impact, endangered and threatened species until the current drought abates. Ongoing and potential environmental impacts include:

- Losses or destruction of fish and wildlife habitat
 - Lack of food and drinking water for wild animals
 - Increase in disease in wild animals, because of reduced food and water supplies
 - Migration of wildlife
 - Increased stress on endangered species or even extinction
 - Lower water levels in reservoirs, lakes, and ponds
 - Loss of wetlands
 - Wind and water erosion of soils
- *Whether there are local or economic losses associated with current drought conditions that are ongoing, occurred in the past, or could occur in the future*

The California Department of Food and Agriculture prepared a report in February 2022 entitled “*Economic Impacts of the 2021 Drought on California Agriculture*”. The report covers the entire State, but also has local information on specific hydrologic regions. A copy of the report can be found at: https://wsm.ucmerced.edu/drought_impact_2021/. The report notes that the 2020-2021 water years were the second driest two-year period on record. It also states that the drought was marked by warmer temperatures, dry antecedent moisture conditions, higher evapotranspiration rates, and reduced crop yields.

According to the report, the State has had the following impacts the last few years:

- 395,100 acres of idled cropland
- Total economic losses of \$1.7 billion
- 14,634 jobs lost
- Surface water cutbacks of 3,008,000 AF in the Tulare Lake Basin Hydrologic Region (where FID is located)

Additional economic losses from drought can include reduced property values, lower tax revenue, and higher water costs for water users. The 2022 water year was also dry. This compounded the effects of the previous two dry years and cause more severe economic impacts. Although the 2023 was historically wet, the flooding issues and high flows will only provide shorter term benefits as more of the water needs to be recharged during wet years, which this project will do.

- *Whether there are other water-related impacts not identified above (e.g., tensions over water that could result in a water-related crisis or conflict).*

Groundwater Sustainability. FID is required to comply with California’s Sustainable Groundwater Management Act (SGMA), which requires groundwater basins to achieve sustainability from 2020 to 2040. FID is located in the Kings Groundwater Subbasin, which is considered ‘critically overdrafted’ by the State of California. Groundwater is currently an important reserve water supply for use in droughts when surface water supplies are limited, but that reserve supply would be lost or limited if groundwater pumping had to be restricted to

comply with SGMA. This creates greater need for projects like the proposed recharge basin.

San Joaquin River Settlement. Friant Division CVP supplies have been recently curtailed due to the settlement agreement on the San Joaquin River. Based on the agreement, all water contractors will be impacted by about 200,000 AF per year. One estimate shows that deliveries to FID would be reduced by an average of 9,000 AF/year. The proposed project will conserve water that can be used to partially compensate for these water allocation reductions.

EVALUATION CRITERION D – PRESIDENTIAL AND DOI PRIORITIES

Disadvantaged or Underserved Communities:

- *Describe how the proposed project will serve or benefit a disadvantaged or underserved community.*

The project is located within an area identified as disadvantaged using the Climate and Economic Justice Screening Tool (<https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>) as shown in **Figure 10**.



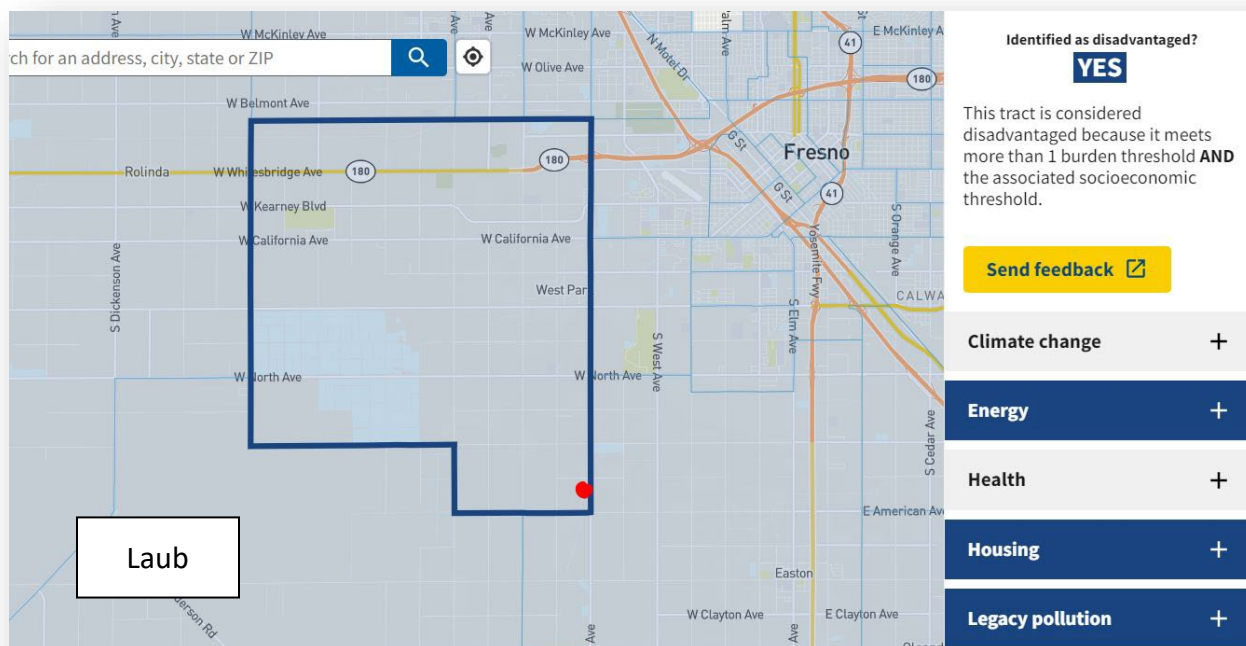


Figure 10 – Climate and Economic Screening Tool Screenshot

shows that the project is located within US Census areas that are considered disadvantaged based on a California Department of Water Resources Statewide dataset. These are areas that have a Mean Household Income (MHI) 80% or less of the State-wide MHI. Therefore, this area also meets the criteria of Section 1015 of the Cooperative Watershed Act, which considers communities disadvantaged if they have less than 100% of the Statewide MHI. These disadvantaged areas cover 163,715 acres, or about 66% of FID. The project will provide regional benefits to the entire service area of Fresno Irrigation District. While recovered water cannot be delivered to all of the District, per FID policy, the new water supply would increase the water allocation for District growers, with the benefit spread over the entire District.

Figure 5 shows groundwater elevation contours and that project will increase groundwater levels and improve water quality within this disadvantaged community area.

Tribal Benefits

- *Does the proposed project directly serve and/or benefit a Tribe?*

The project will not involve a tribe or tribal lands.

- *Does the proposed project support Reclamation’s Tribal trust responsibilities or a Reclamation activity with a Tribe?*

The project will not involve a tribe or tribal lands.

EVALUATION CRITERION E—READINESS TO PROCEED AND PROJECT IMPLEMENTATION

- *Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.*

Preliminary planning and design began in early 2023 and final design is expected to begin in early 2024. It is assumed that the grant contract will be signed on October 31, 2024. Recent experience with other USBR grant funded projects is that the NEPA process, particularly the Cultural Review, has been taking 12 months for the USBR and its review partners to complete. The time for this process is considered to be the critical path and has been included in the schedule. It is estimated that all work will be completed by August 2027, well before the contractual deadline of October 31, 2027. This provides a comfortable buffer in case of unforeseen delays, and it should be noted that if the NEPA process does not take as long as it has been, the project should be able to be completed much sooner. The schedule is consistent with FID's other similar projects. A detailed schedule is included in **Appendix D**.

- *Describe any permits that will be required. Include information on permits or approvals already obtained. For those permits and approvals that need to be obtained, describe the process, including estimated timelines for obtaining such permits and approvals.*

The permits required are described in Section 4, Required Permits or Approvals. Below is a discussion of their impact on the schedule and implementation.

1. CEQA Compliance. The CEQA process has already been completed for the Hornor project and initiated for the Laub project. An Initial Study and Mitigated Negative Declaration was completed and the Negative Declaration was adopted for Hornor in May 2023 by the District. Because of page limitations, a copy of only the cover page is included in **Appendix E**, but a full copy of the document and supporting studies can be found at <https://ceqanet.opr.ca.gov/2023040024>.
2. NEPA Compliance. The CEQA process included biological and cultural studies completed with the consideration of additional NEPA and USBR requirements. This provides an important head start for the NEPA process. If required, the schedule includes time for any additional studies or supporting information to be completed.
3. Stormwater Pollution Prevention Plan. The Stormwater Pollution Prevention Plan will be prepared coincident with the project design and specifications.
4. Dust Control Permit. A dust control permit will be obtained from the local air board right after final design is completed.
5. Electrical Connection. Approval for electrical connection with the local utility will be required. This process will start during the final design efforts.

- *Identify and describe any engineering or design work performed in support of the project.*

Following is a description of work completed to date on the project. All of this work has helped to validate the feasibility of the project, provided more detail on project features, operations, and project benefits, and provided sufficient detail for a more detailed cost estimate.

- **Groundwater Recharge Planning Memorandum.** In 2021, FID performed a study to assess the need for future recharge and identify potential recharge sites. The proposed

project was identified in the memo. At the time, an expansion of an existing site (Waldron-Lambrecht) was considered, but the District chose a more optimal site downstream at the head of a canal lateral. **Appendix A** includes a portion of the memo.

- **Land Acquired.** FID has purchased the property for the project and owns the property in full.
- **Basis of Design Memorandum.** FID’s consulting engineer prepared a Basis of Design Memorandum for the recharge project (see **Appendix A**). The memorandum outlines the main design criteria, design information, and assumptions related to earthwork, SCADA/electrical, monitoring, structures, general design features, and elevations.
- **Preliminary Project Design.** Preliminary design drawings of the project are included in **Appendix A**. The drawings include details of the basin layout, embankments, outfall discharge, canal gates, staff gauge, metering stand, piping, fencing and appurtenances. FID has already hired a consultant for final design.
- **CEQA Process Completed.** The CEQA process has been completed for the Hornor Basin and initiated for Laub with completion anticipated in May 2024. The Initial Study and Mitigated Negative Declaration are completed and Negative Declaration for Hornor was adopted May 2023. A copy of only the cover page is included in **Appendix E**, but a full copy of the document and supporting studies can be found at <https://ceqanet.opr.ca.gov/2023040024>.
- **Preliminary NEPA Analysis.** The Initial Study completed included biological and cultural studies that included NEPA and USBR considerations based on experience from prior project USBR related projects. This provides a head start for the NEPA process and the basis should additional work be needed.

- *Describe any land purchases that must occur before the project can be implemented.*

FID has already purchased the property for the basin project so there are no easements or additional land acquisitions required to complete the project.

- *Describe any new policies or administrative actions required to implement the project.*

No new policies will be required. FID has constructed numerous similar projects in the past.

EVALUATION CRITERION F—NEXUS TO RECLAMATION

- *Does the applicant have a water service, repayment, or O&M contract with Reclamation?*

FID currently holds a water contract with the USBR (Friant Division Central Valley Project contract No. 14-06-200-1122A-D (C2)) for 75,000 acre-feet of Class II San Joaquin River water.

- *If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual mean?*

Not applicable.

- *Will the proposed work benefit a Reclamation project area or activity?*

Yes, the project and the District are both located within the Central Valley Project’s Friant Division, and the District is within the CVP Place of Use. FID is dependent on their CVP supplies

to meet their full water demands. The project will directly benefit a Reclamation Project Area.

- *Is the applicant a Tribe?* No. The applicant is not a tribe.

2 . PROJECT BUDGET

(A) Funding Plan and Letters of Commitment

Identify the sources of the non-Federal cost share contribution for the project, including:

- i. *Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments).*

FID believes this project is foundational to drought planning and water supply operations and have therefore committed to providing the required funding. The District will pay all remaining costs not covered by the USBR.

Table 1 – Funding Sources

Funding Sources	Amount
Fresno Irrigation District – Cash Contributions	<u>\$5,000,000</u>
Subtotal: Non-Federal Funding	<u>\$5,000,000</u>
Requested Reclamation Funding	<u>\$5,000,000</u>
Other Federal Funding	<u>\$0</u>
Project Funding Total	<u>\$10,000,000</u>

Appendix F is documentation for the District’s cost share. The total reserve funds exceed the proposed cost share and ensures that FID will have sufficient assets to enter the grant agreement and complete the project.

FID also spent \$4.5 million on land purchase and land clearing, but those costs are not presented in the table above.

- ii. *Any costs that will be contributed by the applicant.*

See Table 1 above

- iii. *Any third-party in-kind costs (i.e., goods and services provided by a third party).*

There will be no third-party in-kind costs.

- iv. *Any cash requested or received from other non-Federal entities.*

There is not any cash requested or received from other non-Federal entities for this project.

- v. *Any pending funding requests (i.e., grants or loans) that have not yet been approved and explain how the project will be affected if such funding is denied.*

There are no pending funding requests for the project.

- vi. *Identify whether the budget proposal includes any project costs that have been or may be incurred prior to award.*

Some surveying, design work and environmental work has been and will be performed before the contract award. This is estimated to be \$150,000. These expenditures will all be used as cost

share if eligible.

(B) Budget Proposal

The budget proposal has been developed based on the District’s experience constructing several recent similar projects, including projects that include USBR grant funding. The District will perform administration and management and oversee the entire process, however it will not charge its time to the project.

The District will contract with the appropriately licensed and experienced professional consultants and contractors to complete the work associated with the project. Table 2 provides a summary of the totals under each category to complete the work, and the detailed supporting information for each of the items is included in **Appendix G**. A more detailed description of the costs under each category is included below.

Table 2 – Budget Proposal

Budget Item Description	Computation		Quantity Type	Total Cost
	Unit Cost	Quantity		
Salaries & Wages (FID)	\$0			\$0
Fringe Benefits (FID)	\$0			\$0
Travel (under contractual)	\$0			\$0
Equipment (under contractual)	\$0			\$0
Supplies/Materials (under contractual)	\$0			\$0
Contractual (see Appendix G for details)				
Professional Services				
Grant Administration	\$20,000	1	-	\$20,000
CEQA/NEPA and Permitting	\$97,000	1	-	\$97,000
Project Design	\$240,000	1	-	\$240,000
Assistance during Construction	\$200,000	1	-	\$200,000
Construction Contractor			-	
Recharge Basin	\$9,143,000	1	-	\$9,143,000
Monitor Well	\$150,000	2	-	\$300,000
Other	\$0			\$0
Total Direct Costs				\$10,000,000
Indirect Costs – 0.0%				\$0
Total Project Costs				\$10,000,000

Note: See **Appendix G** for a more detailed breakdown of the above costs

(C) Budget Narrative

a. Personnel

The project manager will be the District’s Chief Engineer Laurence Kimura. District staff will participate through contract negotiations, project management, project administration, consultant management, design review and grant reporting. The Chief Engineer and District staff have successfully completed numerous similar projects, including several that have received USBR

have successfully completed numerous similar projects, including several that have received USBR grant funding. These efforts will not be billed to the project and FID will not seek either reimbursement or credit towards cost share.

b. Fringe Benefits

Since FID will not charge salary costs to the project or provide work-in-kind, there will be no fringe benefit costs included.

c. Travel

Travel expenses will include limited mileage costs for consultants to attend project meetings, visit the site, perform surveying, and monitor construction. These will be billed at the standard IRS mileage rate in effect at the time of the project. Since these costs are for consultants, they are placed in the Contractual category.

d. Equipment

The project will include equipment for flow measurement and canal gates. This equipment will be provided by contractors, with their costs falling under the Contractual category below.

e. Supplies

Materials and supplies needed for the project will be provided by consultants and contractors, with their costs falling under the Contractual category below.

f. Contractual

The District will contract with its consultant engineer and environmental planners to complete the work associated with grant support, survey, design, environmental documentation, permitting, bidding support and construction management. **Appendix G** includes an estimate of consultant costs with a detailed breakdown of tasks, subtasks, person-hours, billing rates and direct costs. The hours and hourly rates considered factor in potential increases of the project period. This estimate was prepared by an engineering consulting firm that also assisted in developing the preliminary design, preliminary CEQA/NEPA memo and the scope of work, is familiar with the District's water system, and has designed similar projects.

This category also includes costs for a contractor to build the recharge basin, monitor well, and appurtenances. **Appendix G** includes a detailed construction cost estimate, as well as bid canvasses for several other similar projects that were used in developing the cost estimate. The costs were estimated based on the preliminary design and unit prices for similar recently bid or constructed recharge basin projects in FID, including Kenneson Basin Central Basin, Wagner Basin, and Savory Basin. The estimate provided is the best available with the current design and existing information on current construction costs.

The District will select project consultants and contractors based on the appropriate Code of Federal Regulations guidelines. A consultant will be selected based on qualifications, and a contractor will be selected using a competitive bidding process.

g. Construction

A Preliminary Opinion of Probable Construction Cost (EOPCC) has been prepared and included in **Appendix G**. The EOPCC includes a detailed listing of potential bid items with quantities based on preliminary design and costs based on bid cavasses from recent similar projects. Environmental and regulatory compliance will incur costs for permitting, CEQA compliance and NEPA Compliance. Provost & Pritchard Consulting Group performed a preliminary CEQA/NEPA review for the Hornor project (see <https://ceqanet.opr.ca.gov/2023040024>). The environmental and regulatory compliance costs are summarized in the Estimate of Professional Fees (see **Appendix G**). These costs are incorporated into the fee estimate spreadsheet for consulting services (**Appendix G**).

h. Other Direct Costs

The project land costs, estimated to be approximately \$4.5M will not be claimed in the project budget or as local cost share. The District also performed CEQA compliance work, but these costs will not be claimed.

There will be no third-party contributions.

i. Total Direct Costs

A detailed listing of the categories and totals for each category is shown in **Table 2**. The detail supporting these costs is included in **Appendix G**.

j. Indirect Costs

The project will not have indirect costs.

j. TOTALS

A detailed listing of the categories and totals for each category is shown in **Table 2**. The detail supporting these costs is included in **Appendix G**.

3 . ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

An Initial Study and Mitigated Negative Declaration was prepared for the Hornor project and publicly noticed in accordance with CEQA requirements. A Negative Declaration for the Hornor project was adopted by FID’s Board of Directors in May 2023. A copy of only the cover page is included in **Appendix E**, but a full copy of the document and supporting studies can be found at <https://ceqanet.opr.ca.gov/2023040024>. The Biological and Cultural Studies associated with this work included work typically required for NEPA processing, which should assist in expediting the NEPA process should funding be approved that requires USBR to initiate NEPA. Work for the Laub basin has been initiated.

- Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)?

The project will impact the local environment including changes to the soil (due to site clearing and grubbing, excavation and grading). There will be some generation of dust associated with work activities on the site. With proper stormwater control measures there should be no impacts on water (quality and quantity).

As documented in the Initial Study and Negative Declaration (<https://ceqanet.opr.ca.gov/2023040024>) there is no evidence of significant impacts on aesthetics, agricultural and forestry resources, air quality, greenhouse gas emissions, biological resources, wetlands and jurisdictional waters, cultural resources, energy, hazards/hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems and wildfire. A specific list of planned Monitoring and Mitigation Measures is listed in Chapter 5 of the Final Initial Study and Mitigated Negative Declaration.

- Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

Earth disturbing work will include clearing and grubbing of the site, excavation of the basins, fill for the levees, and excavation and backfill for piping and structures. Appropriate Storm Water Pollution Prevention Plan (SWPPP) measures will be implemented to control water runoff from the site. Dust control measures will be implemented to minimize the generation of dust from construction activities on the site. Appropriate mitigation measures as determined under CEQA and NEPA review will be implemented to minimize impacts on animal habitat within the project area.

- Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area?

A Federal Cross-Cutting Topic section is included in the Final Initial Study and Mitigated Negative Declaration (ISMND) that can be found here: <https://ceqanet.opr.ca.gov/2023040024>. **Appendix B** to the ISMND is a Biological Evaluation and includes the Section 7 Determinations for Federally Listed Species. No effect was determined for the all of the species listed.

- Are there wetlands or other surface waters inside the project boundaries that potentially fall

under CWA jurisdiction as “Waters of the United States?”

There are no wetlands or jurisdictional features within the project area (<https://ceganet.opr.ca.gov/2023040024>).

- When was the water delivery system constructed?

Most of the District’s delivery system was constructed in the late 1800s to deliver water from the Kings River to previously non-irrigated land in and around Fresno. The Fresno Irrigation District was formed in 1921.

- Will the proposed project result in the modifications or effects to, individual features of an irrigation system? If so, state when those features were constructed and describe the nature and timing of any extensive alterations.

The proposed project will include an inlet and outlet structures on FID’s canal system, and modification to those canal systems. Preliminary plans are included in **Appendix A**.

- Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?

The District is not aware of any buildings, structures, or features in the District that are listed on the National Register of Historic Places.

- Are there any known archeological sites in the proposed project area?

As identified in the ISMND, there are no known archaeological sites within the proposed project area.

- Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

The proposed project will not have a disproportionately high and adverse effect on low income or minority populations. In fact, the project is an identified Disadvantaged Community, and the recharged water will benefit groundwater levels and groundwater quality in the area. Further, as the District provides surface water to the City of Fresno and other areas that include significant Disadvantaged Community areas, the project will help maintain groundwater levels and provide drought resilience for these communities by improving the overall water supply for the region.

- Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

The proposed project will not limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands. Based on surveys completed, there are no known sacred Indian sites in the vicinity of the project.

- Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

The proposed project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

4 . REQUIRED PERMITS OR APPROVALS

Required permits and approvals include the following:

1. CEQA Compliance. The CEQA process has been completed and the ISMND for the Hornor project and NOD can be found here: <https://ceqanet.opr.ca.gov/2023040024>.
2. NEPA Compliance. NEPA compliance will only be required if a USBR grant is awarded. There is no other federal nexus to the project. The ISMND includes a Federal Cross-Cutting Topic section and the supporting Biological and Cultural studies were prepared with consideration should NEPA be required.
3. Stormwater Pollution Prevention Plan. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared according to State requirements for the project site. Compliance with the SWPPP will enforced during construction.
4. Dust Control Permit. A dust control permit will be needed from the local Air Quality Control Board.
5. Electrical Connection. An approval for electrical connection from Pacific, Gas and Electric to operate the water control, flow measurement and water level monitoring will be required. FID has obtained these approvals many times in the past.

No building permits, grading permits or other approvals will be required from Fresno County or other local agencies. According to California Government Code Section 53091, the District will not need to obtain any building or zoning permits for the project. These regulations state that, for a local agency such as FID, *“Building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water.....Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water.”*

FID already owns the project property needed for the project. No additional easements or land acquisitions are required for the project.

5 . OTHER REQUIREMENTS

OVERLAP OR DUPLICATION OF EFFORTS STATEMENT

FID is not aware of any overlap or duplication of efforts associated with this project.

CONFLICT OF INTEREST DISCLOSURE STATEMENT

FID is not aware of any actual or potential conflicts of interest that would impact either the grant application or the project if it is funded by USBR. FID will notify USBR promptly if a conflict of interest arises.

UNIFORM AUDIT REPORTING STATEMENT

FID was not required to file a Single Audit Report last year.

CERTIFICATION REGARDING LOBBYING

FID has not engaged in any lobbying, therefore form SF-LLL is not required.

LETTERS OF SUPPORT

The project benefits are described above, but the qualitative significance of the project benefits is best demonstrated by the numerous letters of support from stakeholders, which can be found in **Appendix H**. Several stakeholder groups provided letters including: local water agencies, regional water management agencies, disadvantaged communities, and non-profit organizations. Letters were received from the following:

- City of Kerman
- North Kings Groundwater Sustainability Agency
- Fresno County Farm Bureau
- County of Fresno
- Kings Basin Water Authority
- Kings River Conservation District

There is no known opposition to the project. No letters of opposition have been received, and no opposition to the project was made during the adoption of the Resolution to prepare the grant application.

OFFICIAL RESOLUTION

Appendix I includes the resolution authorizing the preparation of this application and funding for the District's cost share that will be adopted at FID's November 9, 2023 Board meeting.

6 . UNIQUE ENTITY IDENTIFER AND SYSTEM FOR AWARD MANAGENT

FID has previously received grants from USBR and is already registered with the System for Award Management and meets other requirements for award and implementation of a grant contract.

The District uses the following identifiers:
Employer Identification Number: 23-7046670
Unique Entity Identifier : KCMZJ7VGCUM3



October 19, 2023

Member Agencies

- Bakman Water Company*
- Biola Community Services District*
- City of Clovis*
- City of Fresno*
- City of Kerman*
- County of Fresno*
- Fresno Irrigation District*
- Fresno Metropolitan Flood Control District*
- Garfield Water District*
- International Water District*

Board of Directors

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Fresno Irrigation District
- Vice-Chairman Brian Pacheco
County of Fresno
- Steve Pickens
Bakman Water Company
- Mathew Basgall
City of Clovis
- Jerry Dyer
City of Fresno
- Kyle Moeller
Seat 7 – Members At Large
- Karl Kienow
Garfield Water District

Executive Officer

Kassy D. Chauhan, P.E.

Internet

www.NorthKingsGSA.org

Mail

North Kings GSA
c/o Fresno Irrigation District
2907 S. Maple Ave.
Fresno, CA 93725

Phone

559-233-7161

Mr. Laurence Kimura, P.E.
Fresno Irrigation District
2907 S. Maple Avenue
Fresno, CA 93725

Dear Mr. Kimura:

RE: Letter of Support for United States Bureau of Reclamation (USBR) Drought Resiliency Grant for Fresno Irrigation District

The North Kings Groundwater Sustainability Agency (North Kings GSA) strongly supports the Fresno Irrigation District's (FID) plans to construct the proposed new Horner and Laub Recharge Basin projects. These projects will help to capture and recharge water in wet years for later use in dry years. Groundwater recharge is one of the most important and effective tools to meet this goal and create sustainable groundwater conditions within the North Kings GSA boundary. The project will also help raise groundwater levels in the area of the basin and benefit landowners with domestic wells and agricultural wells.

Recent droughts have resulted in severe water shortages and emphasized the need for more comprehensive drought planning and mitigation projects. We understand the need to be proactive in developing more drought resilience in the area. Projects like FID's planned recharge projects will help capture storm water in wet years like we just experienced, helping sustain and improve the aquifer and provide supplies available in future dry periods.

We strongly encourage the United States Bureau of Reclamation to fund their application. Thank you for considering this project and all its benefits. Please do not hesitate to reach out should you have any questions. I can be reached at 559-233-7161, x. 7109 or by email at kchauhan@fresnoirrigation.com.

Sincerely,

Kassy D. Chauhan,
Executive Officer

About NKGSA: The North Kings Groundwater Sustainability Agency is a Joint Powers Authority formed in December 2016. Composed of local public agencies and others engaged through binding agreements, the NKGSA is the governing body of a portion of the Kings Subbasin (DWR Bulletin 118, 5-22.08) in compliance with the Sustainable Groundwater Management Act of 2014. NKGSA members are Bakman Water Company, Biola Community Services District, City of Clovis, City of Fresno, City of Kerman, County of Fresno, Fresno Irrigation District, Fresno Metropolitan Flood Control District, Garfield Water District, and International Water District.



October 19, 2023

Laurence Kimura, PE
Fresno Irrigation District
2907 S. Maple Ave.
Fresno, CA 93725

Subject: Letter of Support for USBR Drought Resiliency Grant for Fresno Irrigation District

Mr. Kimura:

On behalf of the Fresno County Farm Bureau, I write in support of the Fresno Irrigation District's plans to construct the proposed new Horner and Laub Recharge Basin projects. These projects will help to capture and recharge water in wet years for later use in dry years. The project will also help raise groundwater levels in the area of the basin and benefit landowners with domestic wells and agricultural wells.

Recent droughts have resulted in very severe water shortages and emphasized the need for more comprehensive drought planning and mitigation projects. We understand the need to be proactive in developing more drought resilience in the area. Projects like what FID has planned will help capture storm water in wet years like we just experienced, helping sustain and improve the aquifer and provide supplies available in future dry periods.

We strongly encourage the United States Bureau of Reclamation to fund their application.

Sincerely,



Mark Thompson
President



County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

October 12, 2023

Laurence Kimura, PE
Fresno Irrigation District
2907 South Maple Avenue
Fresno, CA 93725

Subject: Letter of Support for USBR Drought Resiliency Grant for Fresno Irrigation District

Dear Mr. Kimura:

The County of Fresno supports the Fresno Irrigation District's plans to construct the proposed new Horner and Laub Recharge Basin projects. These projects will help to capture and recharge water in wet years for later use in dry years. Groundwater recharge is one of the most important and effective tools to meet this goal. The project will also help raise groundwater levels in the basin and benefit landowners with domestic wells and agricultural wells.

Recent droughts have resulted in very severe water shortages and emphasized the need for more comprehensive drought planning and mitigation projects. We understand the need to be proactive in developing more drought resilience in the area. Projects like what FID has planned will help capture storm water in wet years like we just experienced, helping sustain and improve the aquifer and provide supplies available in future dry periods.

We strongly encourage the United States Bureau of Reclamation to fund their application.

Sincerely,

Augustine C. Ramirez, Manager
Water and Natural Resources Division



October 17, 2023

Laurence Kimura, PE
Fresno Irrigation District
2907 South Maple Avenue
Fresno, CA 93725

Re: Letter of Support for USBR Drought Resiliency Grant for Fresno Irrigation District

Dear Mr. Kimura:

The Kings Basin Water Authority (KBWA) has been informed of Fresno Irrigation District's (FID) intent to file a grant application with the United States Bureau of Reclamation's (USBR) Drought Resiliency Grant Program for the Horner and Laub Recharge Basin projects (Project). The KBWA is a collaborative effort among nearly 60 public, private, and non-governmental agencies to manage water resources in the Kings Groundwater Subbasin and oversees the implementation and monitoring of the Kings Basin Integrated Regional Water Management Plan (IRWMP). We are writing this letter to express our support for the Project.

Recent droughts have resulted in very severe water shortages and emphasized the need for more comprehensive drought planning and mitigation projects. We understand the need to be proactive in developing more drought resilience in the area. Projects like what FID has planned will help capture storm water in wet years like we just experienced, helping sustain and improve the aquifer and provide supplies available in future dry periods.

We strongly endorse this project and request that USBR fund FID's grant application. If you have any questions, please contact me at MFast@reedley.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Mary Fast".

Mary Fast
Board Chair

SL/dmr

UKB L23-0008
File UKB 101.01



4886 East Jensen Avenue
Fresno, California 93725

Tel: 559.237.5567
Fax: 559.237.5560

www.krcd.org
@kingsrivercd

October 17, 2023

Laurence Kimura, PE
Fresno Irrigation District
2907 South Maple Avenue
Fresno, CA 93725

Re: Letter of Support for USBR Drought Resiliency Grant for Fresno Irrigation District

Dear Mr. Kimura:

The Kings River Conservation District (KRC D) has been informed of Fresno Irrigation District's (FID) intent to file a grant application with the United States Bureau of Reclamation's (USBR) Drought Resiliency Grant Program for the Horner and Laub Recharge Basin projects (Project). This Project will help to capture and recharge water in wet years for later use in dry years. Groundwater recharge is one of the most important and effective tools to meet this goal. The Project will also help raise groundwater levels in the area of the basin and benefit landowners with domestic wells and agricultural wells. We are writing this letter to express our support for the Project.

Recent droughts have resulted in very severe water shortages and emphasized the need for more comprehensive drought planning and mitigation projects. We understand the need to be proactive in developing more drought resilience in the area. Projects like what FID has planned will help capture storm water in wet years like we just experienced, helping sustain and improve the aquifer and provide supplies available in future dry periods.

We strongly endorse this project and request that USBR fund FID's grant application. If you have any questions, please contact me at DMerritt@krcd.org.

Sincerely,

David M. Merritt
General Manager

DM/SL/dmr

L23-0079

File: 300.07.01.01

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Mayor Pro Tem – Bill Nijjer
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Jennifer Coleman
Ismael Herrera
Gary Yep



850 S. Madera Avenue
Kerman, CA 93630

Phone: (559) 846-938

Fax: (559) 846-6199

October 12, 2023

Laurence Kimura, PE
Fresno Irrigation District
2907 South Maple Avenue
Fresno, CA 93725

Subject: Letter of Support for USBR Drought Resiliency Grant for Fresno Irrigation District

Dear Mr. Kimura:

On behalf of the City of Kerman, I write to strongly support the Fresno Irrigation District's plans to construct the proposed new Horner and Laub Recharge Basin projects. These projects will help to capture and recharge water in wet years for later use in dry years. Groundwater recharge is one of the most important and effective tools to meet this goal. The project will also help raise groundwater levels in the area of the basin and benefit landowners with domestic wells and agricultural wells.

Recent droughts have resulted in very severe water shortages and emphasized the need for more comprehensive drought planning and mitigation projects. We understand the need to be proactive in developing more drought resilience in the area. Projects like what FID has planned will help capture storm water in wet years like we just experienced, helping sustain and improve the aquifer and provide supplies available in future dry periods.

We strongly encourage the United States Bureau of Reclamation to fund their application.

Sincerely Yours,

John Jansons

John Jansons, City Manager

cc: