C. Title Page

Project Title: Stockdale Recovery Facilities Project

Applicant: Irvine Ranch Water District
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Irvine, CA 92618-3102

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Project Description:

The Stockdale Recovery Facilities Project will install three wells with piping, solar-powered flow meters, and related appurtenances near the existing Stockdale Integrated Banking Project recharge basins in western Kern County, California, to extract and recover up to an annual average of 2,700 acre-feet per year (AFY) of stored groundwater, offsetting and conserving imported water supplies. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State. During droughts or emergencies, a maximum of 9,000 AFY can be recovered. The extraction wells will recover previously conserved, stored water for use during dry years when surface water supplies are reduced. The Project provides for the conservation of imported water supplies that would otherwise be delivered to IRWD's using during critical dry years. Without the recovery wells, this new banked supply would not be available for use. The Project will install three extraction wells to recover the stored, banked groundwater particularly during droughts when imported water supplies may be restricted. Solar-powered flow meters will be installed to monitor and measure the delivery of recovered supplies. By partnering with Rosedale-Rio Bravo Water Storage District, IRWD will expand its participation in Rosedale's existing Groundwater Storage, Banking, Exchange, Extraction, & Conjunctive Use Program that utilizes available storage in the San Joaquin Valley Groundwater Basin. The Stockdale Recovery Facilities Project will develop facilities that recover and managed conserved water supplies, provide operational flexibility, and enhance water supply reliability, particularly during dry-year periods when other supply sources may be limited or unavailable. The total Project cost is estimated at $3,225,000. The Project schedule calls for completion by May 2017.

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E. Technical Proposal and Evaluation Criteria

This technical proposal consists of five parts in accordance with the requirements specified in the USBR Funding Opportunity Announcement (No. R14AS00001) WaterSMART: Water and Energy Efficiency Grants for FY 2014:

E.1. Executive Summary;
E.2. Background Data;
E.3. Technical Project Description;
E.4. Evaluation Criteria; and
E.5. Performance Measures.

E.1. Technical Proposal and Evaluation Criteria: Executive Summary

Date: January 22, 2014

Applicant Name: Irvine Ranch Water District

City: Irvine

County: Orange County

State: California

Project Summary: The Stockdale Recovery Facilities Project will install three recovery wells with piping, solar-powered flow meters, and related appurtenances near the existing Stockdale Integrated Banking Project recharge basins in western Kern County, California, to extract an average of 2,700 acre-feet per year (AFY) of stored groundwater, offsetting and conserving imported water supplies. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State. During droughts and emergencies, a maximum of 9,000 AFY can be recovered. Extraction wells will recover previously conserved, stored water for use during dry years when surface water supplies are reduced. The Project provides for the conservation of imported water supplies that would otherwise be need by IRWD's during critical dry years. Without the recovery wells, this new banked supply would not be available for use. The Project will install three extraction wells to recover the banked groundwater particularly during droughts when imported water supplies may be restricted. Solar-powered flow meters will be installed to measure the delivery of recovered water. This Project expands an existing Conjunctive Use Program that utilizes available storage in the Kern County

	groundwater basin by developing facilities that manage and recover conserved water, provide operational flexibility, and enhance water supply reliability, particularly during dry-year periods when other supply sources may be limited or unavailable.
Average Annual Acre-Feet of Water Saved and Better Managed:	2,700 AFY
Length of Time (for project):	34 months
Estimated Completion Date:	May 2017
Project Location:	Approximately six miles west of the City of Bakersfield in western Kern County, California. The project is not located on a Federal facility.

E.2. Technical Proposal and Evaluation Criteria: Background Data

The Stockdale Recovery Facilities Project is a critical element of the Irvine Ranch Water District (IRWD) water supply reliability portfolio that supports groundwater recharge and recovery for regional partnerships for conjunctive use and groundwater banking. The Stockdale Recovery Facilities Project as proposed herein will provide the means for IRWD to recover previously conserved water for use during dry years when surface water supplies are reduced. The Stockdale Recovery Facilities Project allows for conservation of imported water supplies that would otherwise be delivered for IRWD's use during critical dry years. Background information about the project is presented below.

IRWD Background and Service Area Map

IRWD was established in 1961 as a California Water District pursuant to the California Water District Law (California Water Code, Division 13). **Figure 1** shows the location of the IRWD and the Stockdale Integrated Banking Project and the proposed Stockdale Recovery Facilities Project. IRWD provides potable and recycled water, sewage collection and treatment, and urban runoff treatment to municipal and industrial (M&I) and agricultural customers within its 115,531-acre service area in Orange County, California. IRWD serves the City of Irvine and portions of the Cities of Costa Mesa, Lake Forest, Newport Beach, Tustin, Santa Ana, Orange and unincorporated Orange County, **Figure 2** shows the service area within Orange County and **Figure 3** depicts the IRWD service area. As an independent public agency, IRWD is governed by a five-member, publicly elected board of directors. These officials are responsible for the IRWD's policies and decision making while day-to-day operations are supervised by the general manager and staff.

Figure 1: Map of California with IRWD and Project Location

Figure 2: Map of Orange County with IRWD Location

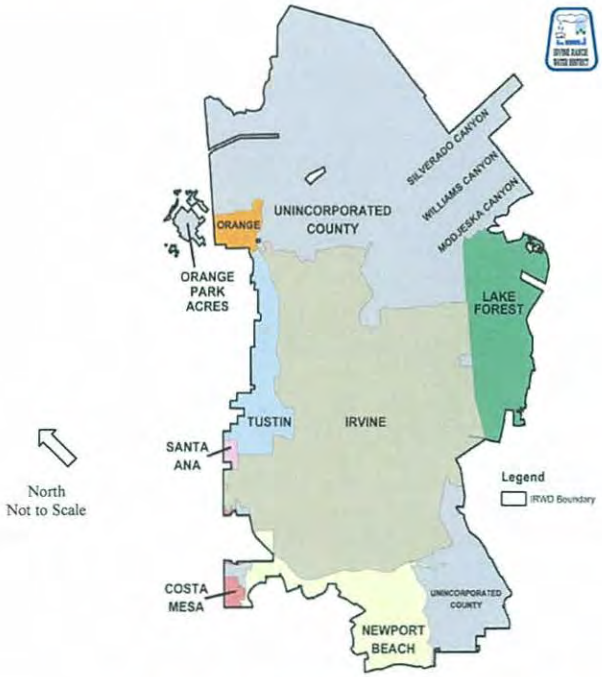


Figure 3: IRWD Service Area Map

IRWD provides potable water to over 500,000 persons. Approximately 65% of the drinking water supply comes from local groundwater sources pumped through IRWD's extensive well system. The remaining 35% of IRWD's drinking water comes from the Colorado River and the State Water Project (SWP), which is imported by the Metropolitan Water District of Southern California (MWD) and purchased by IRWD through the Municipal Water District of Orange County (MWDOC). From July 2012 through June 2013, IRWD supplied nearly 60,800 AFY of potable water to its customers via a distribution system comprised over more than 1,200 miles of pipelines.

IRWD's sanitary sewer system collects all wastewater coming from homes and businesses within the IRWD service area. Sewage is conveyed to two IRWD treatment plants through more than 800 miles of sewer collection pipelines. The Michelson Water Recycling Plant (MWRP) in Irvine treats up to 18 million gallons of wastewater per day (mgd) and is being expanded to treat up to 28 mgd, while the Los Alisos Water Recycling Plant in Lake Forest treats up to 5.5 mgd. IRWD's two water recycling plants treat incoming wastewater to tertiary standards for use as recycled water. The majority of recycled water is used for landscape irrigation at parks, golf courses, school grounds, city street medians, homeowner associations, and other public areas. Recycled water is also used for toilet flushing and cooling towers, and for industrial uses such as composting and concrete making. IRWD maintains a separate recycled water "purple pipe" system over 450 miles in length and serving almost 5,000 metered connections.

Since the early 1990's, IRWD has used reconstructed wetlands to naturally treat urban runoff, improving its quality, before it flows to the ocean. IRWD's Natural Treatment System diverts water from San Diego Creek to wetlands where plants and soils within the ponds naturally remove nitrates and other pollutants from the runoff over a 7 to 10-day period before it is returned to the creek and discharged to Upper Newport Bay and the ocean.

IRWD recently broadened its water supply reliability in 2008 by developing the Strand Ranch Integrated Banking Project, capturing water supplies available during wet years for use during periods of drought or critical need. Using a system of 502 acres of constructed groundwater recharge ponds on Strand Ranch in Kern County, IRWD can store up to 50,000 AF in the regional Water Bank. IRWD may recharge or recover up to 17,500 AF in any single year under its partnering agreements with other collaborating agencies. Recovered water is delivered to IRWD's service area via the Cross Valley Canal, California Aqueduct, and MWD facilities.

The Stockdale Recovery Facilities Project will supplement and strengthen IRWD's water reliability portfolio.

Stockdale Recovery Facilities Project Background

The Stockdale Recovery Facilities Project is located in western Kern County, about six miles west of the City of Bakersfield as shown on **Figure 4**. The wells will be located at the Stockdale West Ranch site, which is approximately 160 miles northwest of IRWD's service area.

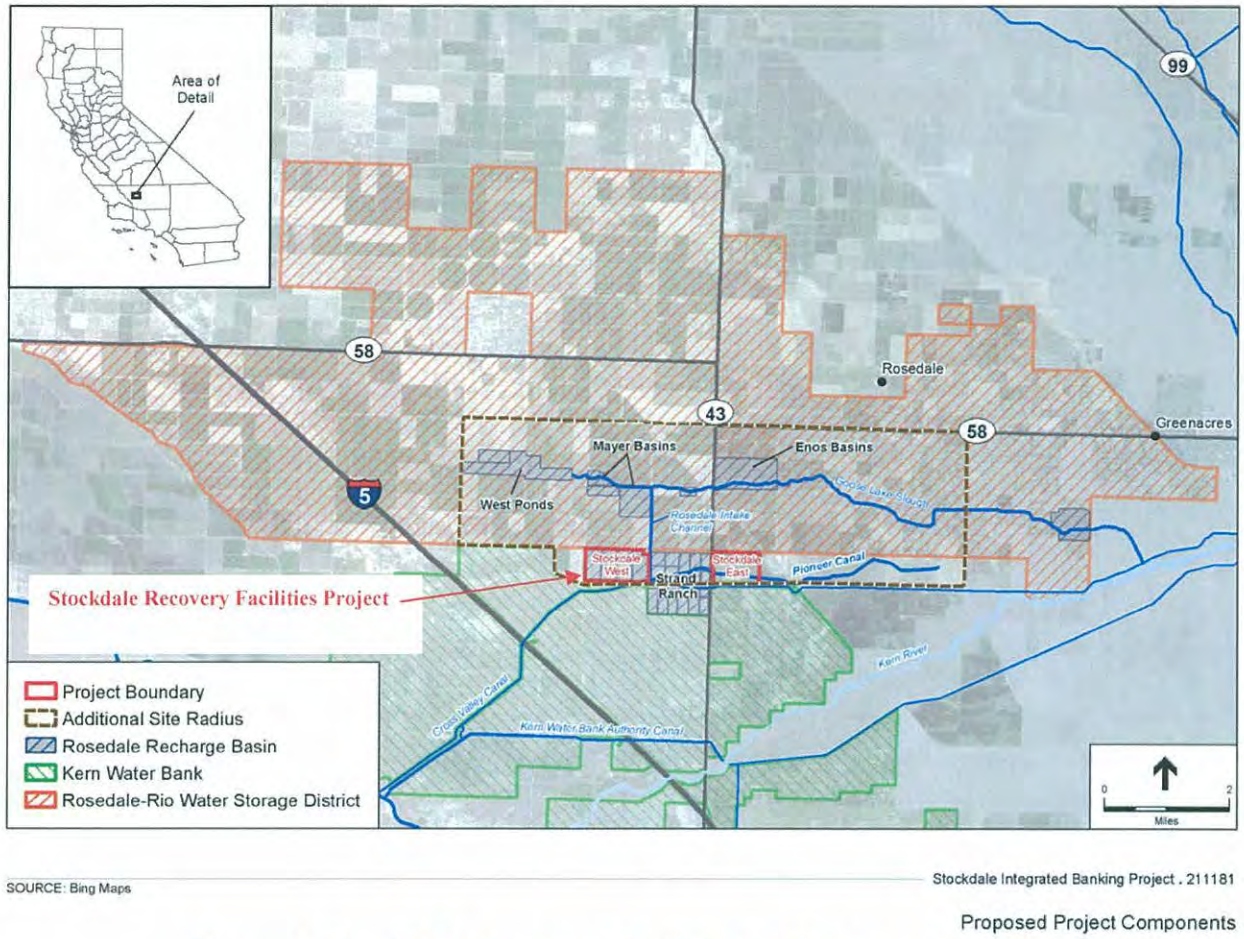


Figure 4: Stockdale Recovery Facilities Project Location Map

Water banking is a transaction involving storing surplus water in underground water banks, groundwater basins, that is subject to recovery at a later date. The operations of many water banks are dependent upon exchanges where water banked underground is returned to the banking party at a later date from surface supplies due to the banker, or land owner where the groundwater basin is located. Other water banks are operated with recovery wells allowing the parties to extract their stored water. Some water banks require a quantity of water to be left behind as part of the recharge program as "payment" for use of the groundwater storage bank. Water banks typically factor in losses due to percolation or conveyance. Portions of Kern County are characterized by hydrogeologic conditions that are particularly suitable for groundwater recharge operations. Kern County is also strategically located in central California near federal, state, and local water supply conveyance facilities. The groundwater banking

programs of Kern County benefit local customers and water districts and also provide water storage for districts in northern and southern California.

In 2008 IRWD partnered with the Rosedale-Rio Bravo Water Storage District to utilize and integrate IRWD's Strand Ranch property located in Kern County to: 1) provide additional groundwater recharge and recovery capacity in the Kern River watershed, and 2) allow storage of water during wet hydrologic periods for use during dry periods to provide IRWD customers in Orange County and other water banking partners with increased supply reliability through redundancy and diversification. The high-flow Kern River water, if not captured and recharged during wet years, would be lost. Thus, the stored groundwater represents a new water supply for IRWD and the banking partners.

Overlying the 1.7 million AF San Joaquin Valley Groundwater Basin, Rosedale-Rio Bravo Water Storage District has ample storage for its agricultural customers and water banking partners with considerable unused storage capacity available. The Strand Ranch Project allows IRWD to store up to 50,000 AF of groundwater; however, unbalanced exchange programs at Strand Ranch reduced the amount of storage available for IRWD from 50,000 to 25,000 AF.

Because IRWD desires to maintain a storage capacity of approximately 88,000 AF for its own use, IRWD embarked on a program to develop or acquire additional storage and associated recharge and recovery capacity.

In 2011 IRWD purchased a neighboring property known as Stockdale West Ranch, adjacent to the Strand Ranch site, with the intention of expanding its water banking opportunities. As part of a Pilot Recharge Project, IRWD constructed four recharge basins and one overflow basin covering 265 acres of the 323 acre Stockdale West site. Stockdale West Ranch is located north of the Pioneer Canal and the Cross Valley Canal. **Figure 5** shows an aerial view of the existing recharge basins at the IRWD Strand Ranch Water Banking Project and the Stockdale West Pilot Recharge Project during a recharge event.

IRWD's partner, Rosedale-Rio Bravo Water Storage District purchased the 230-acre Stockdale East site, immediately east of the Strand Ranch site (See **Figure 4**). The Stockdale East site currently consists of agricultural land for growing cotton and alfalfa.

Under an agreement with Rosedale-Rio Bravo Water Storage District, IRWD proposes to construct the Stockdale Recovery Facilities Project. IRWD will have priority use of all recovery facilities located at its Stockdale West Ranch property, while Rosedale-Rio Bravo Water Storage District will have priority use of the recovery facilities located on its Stockdale East property. IRWD and Rosedale will have secondary priority use of each other's facilities and capacities to the extent available given defined annual recharge and recovery limits. This entitles each agency, to the extent that the designated priority extraction capacity remains unused at the end of the year, to use the remainder of the other agency's unused annual allocation.

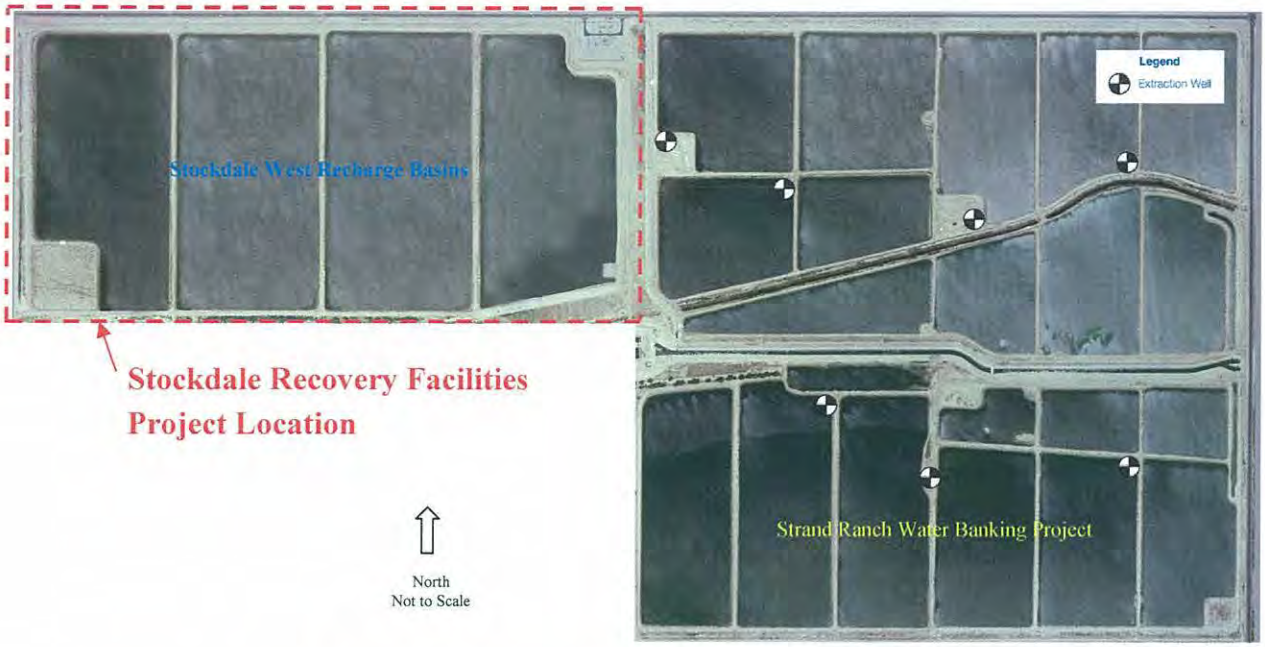


Figure 5: Existing Recharge Basins at Strand Ranch and Stockdale West Ranch

Recharge capacities for the Stockdale Properties are estimated to be up to 27,100 AFY for Stockdale West Ranch. This recharge capacity is based on an estimated infiltration rate of 0.28 feet per day for 365 days. Recovery facilities will be designed to extract up to a maximum of 9,000 AFY at Stockdale West Ranch. Recovery wells must be constructed in order to extract and utilize the conserved groundwater.

At the Stockdale West site, the IRWD project will install three new extraction wells to recover stored groundwater. An annual average of 2,700 AFY will be recovered, offsetting and conserving imported water supplies. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State.

Pipelines and appurtenances will convey the recovered groundwater to the existing Cross Valley Canal for transport to the California Aqueduct, points of use and/or exchange with partnering agencies. Renewable energy components of the project will include solar-powered flow meters on the discharge lines from each well. Flow meters will monitor and measure the delivered water supplies to the Cross Valley Canal.

E.3. Technical Proposal and Evaluation Criteria: Technical Project Description

The Stockdale Recovery Facilities Project will install three extraction wells at or near the Stockdale West recharge basins in western Kern County. IRWD owns the Stockdale West Ranch site and constructed four recharge basins and one overspill containment basin as part of the Pilot Recharge Project. At present, 10,000 AF have already been recharged under the Pilot Project.

Successful capture and percolation of wet-weather runoff and flood flows has increased groundwater banking in the area. Unregulated Kern River flows may be available during wet years when the U.S. Army Corps of Engineers (USACE) declares a high flow condition on the Kern River and conducts mandatory releases of water from Isabella Reservoir. During periods of very high flow, including periods of flooding, releases from the Isabella Reservoir are expected to flood certain areas and delivered for disposal out-of-county. Water is diverted and delivered to the recharge basins via turnouts that feed the recharge basins. Captured water is recharged at the existing spreading basins and stored in the groundwater basin during wet years. Without diversion and recharge at the spreading basins, this new water supply would be lost. Recovery of this resource will offset and conserve imported water supplies by an average of 2,700 AFY. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State.

Figure 6 shows a photo of the first water delivery to the Stockdale West Ranch recharge basins. **Figure 7** shows a photo of the existing Stockdale West Ranch recharge basins that are used to infiltrate water for storage in the aquifer. IRWD has already banked 10,000 AF under the Pilot Project facilities. IRWD is preparing for the installation of recovery facilities to utilize this new water supply.

Figure 6: First Water Delivery to the Stockdale West Ranch Recharge Basins in 2011

Figure 7: Existing Stockdale West Ranch Recharge Basins

Extraction wells are needed to recover the banked groundwater. The Stockdale Recovery Facilities Project will drill and construct three new extraction wells and supporting facilities to recover the stored groundwater and convey it to nearby existing Pioneer and Cross Valley Canals for transport to the California Aqueduct for subsequent wheeling to IRWD using MWD's distribution system in Orange County. The new Stockdale West recovery wells will be similar to the Strand Ranch extraction wells, one of which is pictured on **Figure 8**.

Figure 8: New Stockdale West Extraction Wells Will Be Similar to the Strand Ranch Wells

A geotechnical investigation will drill bore holes to determine feasible locations for the new wells. It is estimated that the wells will be located at a minimum of an 880-foot setback from the adjacent property line. Recommendations in the geotechnical report will be input to the hydrogeological model that will optimize the well sites for optimum extraction rates. The recovery wells will be constructed with a standard drill rig, in a similar manner to that pictured on **Figure 9**. Well components, including the casing and screened sections, will be installed during the drilling operation. It is anticipated that the reverse circulation rotary method of drilling will be used because the method generally does not allow mud invasion of the deposits adjacent to the boring; therefore, less development time should be needed to complete the well.

It is estimated that the wells will be large-diameter, 18 to 24 inches, steel-cased wells with completion intervals between depths 250 to 750 feet below ground surface (bgs). Wellheads will consist primarily of riser pipes, discharge pipes, and other appurtenances.

Figure 9: Stockdale West Well Construction Will Be Similar to the Strand Ranch Wells (shown here)

At the ground surface next to the wells will be piping and fittings, flow control valves, blow-off valves, and flow meters. The wells will have submersible pumps and wellhead (above grade) motors. Each well pump will have a capacity of approximately 5 to 6 cubic feet per second (cfs) (2,200 to 2,700 gallons per minute (gpm) or approximately 3,000 AFY each). Well components will be installed and the immediate area graded for construction of the concrete pad. The aboveground wellheads and pump houses will be installed and connected to nearby electrical junction boxes with telemetry and control panels.

Wellheads will be protected by lockable, roofed, metal-mesh pump houses that are approximately four feet in high and constructed on 12-foot square concrete pads. Solar-panels will be used to power the flow meters which will be used to monitor and measure the delivery of recovered water supplies to the adjacent Cross Valley Canal. Each well site will be enclosed with structures and/or fencing.

Site work will also involve construction of access roads and electrical power supplies for the well pump motors. From each site, a buried pipeline beneath dirt roads or in embankments surrounding the recharge basins will convey the recovered groundwater to the Cross Valley Canal for transport to the California Aqueduct that will move the water south.

Off-site pipelines will be constructed from each well site to the Cross Valley Canal, which is located just south of the Stockdale West Ranch property, and shown on **Figure 10**. Water recovered by the production wells will be conveyed via the Cross Valley Canal for subsequent wheeling to IRWD and Rosedale's other program partners. Before introduction of pumped groundwater into the California Aqueduct, IRWD and Rosedale would comply with and existing provisions imposed by the Cross Valley Canal as well as California Department of Water Resources for local water conveyance and water quality criteria.

Figure 10: Cross Valley Canal

The State Water Contractor that imports water to IRWD's service area is MWD. MWD would access water from the California Aqueduct at Lake Perris where it would be conveyed to MWD's Diemer Filtration Plant located north of Yorba Linda in Orange County. The two major pipelines that deliver water from the filtration plant to the IRWD service area are the Allen McColloch Pipeline and the East Orange County Feeder No. 2.

Imported water is provided to IRWD through Municipal Water District of Orange County (MWDOC), the regional wholesale member agency of MWD. In 2011, IRWD, MWD, and MWDOC entered into a Coordinated Operating, Water Storage, Exchange and Delivery Agreement to facilitate delivery of water banked at Strand Ranch to IRWD's service area. The Agreement is being amended to include the Stockdale Recovery Facilities Project. Under the Agreement, IRWD will provide banked water to MWD at a Kern County delivery point into the California Aqueduct (via the Cross Valley Canal). In exchange, MWD would provide IRWD with an equal amount of imported State Project Water at a delivery point in its service area.

Water Conservation

The Stockdale Recovery Facilities Project will result in quantifiable and sustained water savings as well as improved water management by conserving and making use of a new water supply averaging 2,700 AFY. Water conservation by the Project is summarized as follows:

- Recovery of an average of 2,700 AFY of recharged, stored, banked groundwater (assumes recovery of 9,000 AF every three out of ten years);
- Replacing and conserving imported water supplies, that would otherwise be delivered to IRWD for its use, particularly during shortages;
- Development of a new water supply by recovering banked groundwater created when existing recharge basins capture and percolate high flows diverted from the Kern River and California Aqueduct during wet years. IRWD has already stored, or banked, approximately 10,000 AF. Without the recovery wells, this available groundwater supply would be lost;
- Improvement of water reliability to draw up to 9,000 AFY when needed from the new groundwater supply during droughts when other water supplies may be restricted;
- Installation of three new extraction wells for conjunctive use with the existing recharge basins;
- Recovery well discharges will be metered and recorded, demonstrating water management of the new source and documenting the volume recovered and conserved; and
- Participate in an existing Groundwater Storage, Banking, Exchange, Extraction, & Conjunctive Use Program that utilizes available storage in the San Joaquin Valley Groundwater Basin through Rosedale-Rio Bravo Water Storage District.

Major Tasks

A list of major tasks involved in implementation of the Stockdale Recovery Facilities Project follows:

Planning and Design Phase

1. Environmental compliance (in progress)
2. Geotechnical investigations
3. Hydrogeological modeling
4. Engineering design
5. Bid phase engineering services

Construction Phase

1. Well drilling
2. Construction of the facilities

3. Construction management and inspection
4. Start-up testing
5. Contract close-out

Detailed Breakdown of Project Tasks and Activities

Planning Phase

1. Environmental Compliance: The requirement of the environmental documentation for compliance with California Environmental Quality Act (CEQA) for the Stockdale Recovery Facilities Project is currently in progress. A Notice of Preparation of an Environmental Impact Report (EIR) was filed by IRWD on September 24, 2013. It is anticipated that the Draft EIR for the Stockdale Recovery Facilities Project will be released for public review in February 2014. National Environmental Policy Act (NEPA) documentation to comply with federal grant requirements will proceed in May-June 2014 to complete the environmental compliance.
2. Geotechnical Investigation: Soil borings and tests will begin in August 2014. The soils/geotechnical investigation report will be prepared and completed by September 2014.
3. Hydrogeological Modeling: Groundwater modeling will incorporate the findings of the geotechnical investigation report to site the wells for optimum management of the groundwater recharge basins and extraction wells. Well sites will be identified by October 2014.
4. Engineering Design: Final design of the three wells, piping, and site facilities will begin in November 2014 and will be completed by April 2015. IRWD will contract with an engineering firm which will provide the required geotechnical, civil, mechanical, electrical, and instrumentation/controls engineering disciplines, working on the design as a coordinated team. Engineering design and documents will include drawings and specifications issued for competitive bids by qualified contractors.
5. Bid Phase Engineering Service: This phase will begin once the final design is complete. It is anticipated that a 60-day bid period will conclude in June 2015 when construction bids will be received and a contract will be awarded. During the bid phase, the design engineer will respond to request for clarification of the plans and specifications by issuing addenda where necessary.

Construction Phase

1. Following issuance of the notice to proceed in July 2015, contractor mobilization and well drilling will begin. Well drilling will involve drilling and boring machinery and installation of the well casing and screen.

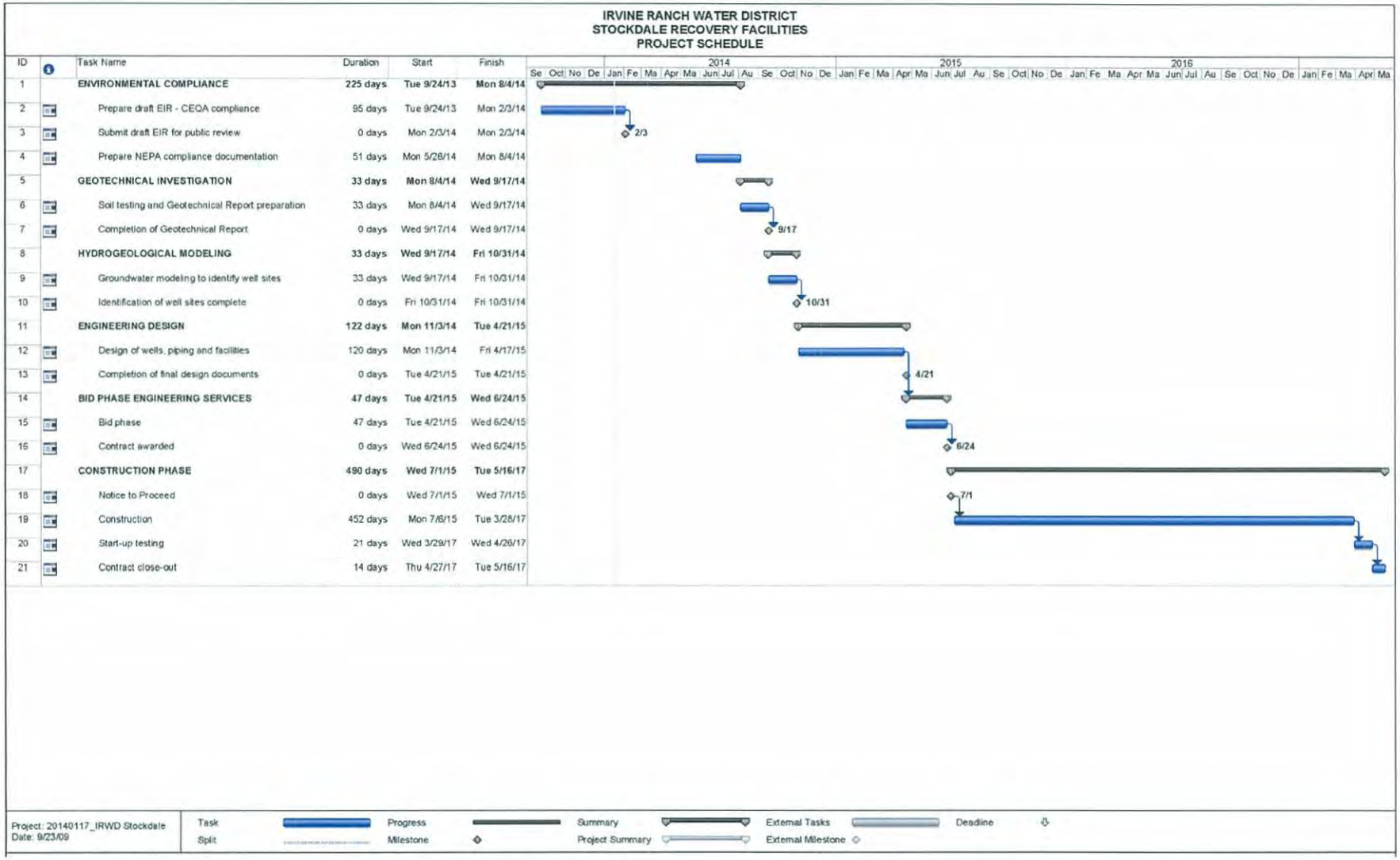
2. Construction will follow the well drilling and involve equipping the well, placement of the well pump, control valves, and wellhead equipment, and installation of piping, site facilities and access roads, solar panels for the flow meters, telemetry, controls, and appurtenances. The site facilities may include fencing and/or building enclosures for the wellhead equipment. The conveyance piping will be below grade, installed under existing roads, to the points of discharge into the existing Cross Valley Canal. It is anticipated that the construction phase will begin in July 2015 and extend for 21 months, ending in March 2017.
3. Construction management and inspection will run in parallel with the construction phase. IRWD will utilize its partner, Rosedale-Rio Bravo Water Storage District's staff, to be the on-site construction manager and inspectors of the Project.
4. Start-up testing will be conducted between February and March 2017.
5. Contract close-out: Administration of the project will be managed by IRWD; tasks include budgeting, expenditures, schedule and progress reporting. Status reports will be submitted with invoices as the project progresses and a final report will be submitted at the completion of the project in May 2017.

Project Schedule

The Stockdale Recovery Facilities Project schedule is shown in **Figure 11**. Key milestones are listed below:

- September 2014 – Geotechnical Investigation Completed
- October 2014 – Hydrogeological Modeling Completed
- April 2015 – Final Engineering Design Completed
- June 2015 – Construction Bids Received and Contract Awarded
- July 2015 – March 2017 – Construction
- March 2017 – Start-up Testing Completed
- May 2017– Contract Close-out and Final Report Submitted to Reclamation

Figure 11: Stockdale Recovery Facilities Project Schedule



Such linkages can be small but can be vital to the long-term health of connected habitats. During the Stockdale Pilot Project, IRWD installed perimeter fencing around the recharge facilities with 8-inch by 12-inch openings every 300 feet to allow the San Joaquin kit fox to enter, exit and pass through the area. The Stockdale Recovery Facilities Project will take strict precautions to minimize any impacts to the San Joaquin kit fox.

Figure 13: San Joaquin Kit Fox

IRWD has experience with the San Joaquin kit fox from its Strand Ranch project, which is adjacent to Stockdale West Ranch. Specific mitigation measures during construction and improvements to benefit the San Joaquin kit fox are listed below and will be implemented with the assistance of a qualified biological monitor:

- Maintain speed limits of 25 miles per hour or less for all construction traffic to minimize the probability of road mortality;
- Prohibit any work after dusk;
- Train workers to recognize the San Joaquin kit fox and how to avoid or reduce impacts on it or its habitat;
- Prevent entrapment of the San Joaquin kit fox during construction by covering all holes or trenches in excess of two feet in depth and install escape ramps of earth fill or wooden planks; inspect trenches each morning before construction activities begin for any hiding foxes and if any are found, allow them to escape unimpeded;
- Clean up and remove any food-related trash items from the site and not allow any deliberate feeding of wildlife;
- Use only pesticides and herbicides that comply with all local, state, and federal regulations;
- Report any injury, entrapment, or death of a San Joaquin kit fox that is found on the site to the California Department of Fish and Wildlife in Fresno and the U.S. Fish and Wildlife Service in Ventura;
- Install perimeter fencing around the well sites that is designed to allow the San Joaquin kit fox to enter, exit and pass through the area, at least 8-inch by 12-inch openings every 100 yards about 12-inches above grade.

Besides benefitting the Delta Smelt and San Joaquin kit fox, the Stockdale West Ranch facilities also provide a water resource and habitat for migratory birds and other wildlife. The Stockdale Recovery Facilities Project will comply with the missions of the Metropolitan Bakersfield

E.4. Technical Proposal: Evaluation Criteria

This section of the Technical Proposal describes how the Stockdale Recovery Facilities Project will fulfill each of the WaterSMART Water and Energy Efficiency Grants for FY 2014 Program's criteria and subcriteria.

Evaluation Criterion A.1: Water Conservation (Total Value = 28 points possible)

The Stockdale Recovery Facilities Project will result in quantifiable and sustainable water savings as well as improved water management by conserving and making use of a new water supply averaging 2,700 AFY. Water conservation by the Project is summarized as follows:

- Recovery of an average of 2,700 AFY of previously recharged, stored, banked groundwater (assumes recovery of 9,000 AF every three out of ten years) for use in dry years when surface supplies are reduced;
- Replacing, offsetting, and conserving an annual average of 2,700 AFY of imported water particularly during critical dry years. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State.
- Installation of three new extraction wells for conjunctive use with the existing recharge basins;
- Development of a new water supply by recovering banked groundwater created when existing recharge basins capture and percolate high flows diverted from the Kern River and California Aqueduct during wet years. IRWD has already recharged 10,000 AF under the Pilot Project. Without the recovery wells, this banked water supply would be lost;
- Improvement of water reliability to draw up to 9,000 AFY when needed from the new banked water supply during droughts when other water supplies may be restricted;
- Well discharges will be metered and recorded, demonstrating water management of the new source and documenting the volume recovered and conserved; and
- Participate in an existing Groundwater Storage, Banking, Exchange, Extraction, & Conjunctive Use Program that utilizes available storage in the San Joaquin Valley Groundwater Basin through the Rosedale-Rio Bravo Water Storage District.

Subcriterion No. A.1(a) – Quantifiable Water Savings (Value = Up to 20 points possible)

The Stockdale Recovery Facilities Project will extract and save an average of 2,700 AFY of imported water during critical dry years. The Project will construct three recovery wells to extract previously stored, or banked, groundwater. The recharge facilities to capture wet year supplies are existing and agreements are in place. Recovery wells are needed to extract and make beneficial use of the banked groundwater. Without installation of the recovery facilities, the stored water will be lost. The water savings is quantifiable because the discharge from the wells will be metered. Flowrates may vary up to a maximum of 9,000 AFY during dry years and

emergencies. The quantifiable water savings from the Stockdale Recovery Facilities Project is an annual average of 2,700 AFY.

The Stockdale Recovery Facilities Project will significantly enhance water supply reliability for IRWD by providing recovery of stored water to augment supplies, particularly during dry-year periods when other imported supplies may be limited or unavailable. Utilizing existing storage capacity in the underlying aquifer avoids the need to construct extensive surface water storage facilities elsewhere to perform the same function. The proposed project is consistent with California Department of Water Resources (DWR) water management goals. In the *California Water Plan Update 2009*, DWR recognizes the benefits of conjunctive water management, which include improving water supply reliability, reducing groundwater overdraft and land subsidence, and protecting water quality and environmental conditions.

IRWD currently has approximately 26,000 AF of groundwater storage under its Stockdale West Ranch. IRWD may share this capacity with other banking partners through unbalanced exchanges agreements which requires that for every 2 AF of water recharged, 1 AF is stored and available for the exchange partner and 1 AF is transferred to IRWD. Recharge capacity at Stockdale West Ranch is estimated at up to 27,100 AFY based on a filtration rate of 0.28 feet per day for 365 days.

IRWD has already constructed recharge basins to percolate diverted high flows through its Strand Ranch Integrated Banking Project. IRWD owns 502 acres of recharge basins on its neighboring Strand Ranch property and 265 acres of recharge basins at its Stockdale West Ranch.

The Stockdale Recovery Facilities Project will install three wells at the Stockdale West Ranch. The capacity of each well will be between 2,200 and 2,700 gpm (approximately 5 to 6 cfs or 3.2 to 4.0 million gallons per day (MGD). It is estimated that the recovery period with the extraction wells in operation will average about nine months per year, allowing for three rainy winter months when the wells would be off. Based on operating 9 months per year at approximately 2,500 gpm (5.5 cfs), each well would recover approximately 3,000 AFY. With all three extraction wells in operation, up to a maximum total of 9,000 AFY of stored groundwater could be recovered, if all wells were in service for nine months. On average it is estimated that the wells will recover approximately 2,700 AFY. This is based on an average of three dry years out of ten and recovering 9,000 AF for three years of the ten years. Actual pumping rates will be dependent on seasonal and weather conditions. Typically, Southern California experiences seven years that receive less than average rainfall and three years that receive more than average rainfall in every decade based on historic hydrologic records. Using this simplified hydrologic cycle over a typical decade would result in a fill and draw balance, or conjunctive use, in the Stockdale West Ranch groundwater storage "bank":

- Recharge basins will percolate captured high-flows during three wet years, replenishing the banked groundwater underlying Stockdale West Ranch (storage capacity of 26,000 AF); and
- Recovery wells would extract an average of approximately 2,700 AFY, based on recovery of 9,000 AF every three out of ten years as needed during dry years or when imported supplies are reduced.

This general conjunctive use arrangement will be repeated as wet years fill the groundwater bank and dry years recover the stored groundwater. Specific operation would be highly variable from year to year, depending on climate conditions. Recharge operations may occur as little as one month or as much as 12 months per year. Extraction rates will similarly vary depending on need.

The Stockdale Recovery Facilities Project will construct the extraction wells, allowing beneficial use of the conserved, saved water, particularly during times when it is most needed. The wells are a critical element in this conjunctive use project, because without the wells, the water will be lost and not recovered for beneficial use.

All water streams in and out are metered: flow diverted into the recharge basins, and groundwater recovered by the wells. Therefore, the amount of water savings can be measured and is quantifiable. The water saving attributable to the Stockdale Recovery Facilities Project will be the volume measured by the flow meters on the discharge pipes from the three recovery wells. Recovering banked water will replace, conserve and save an annual average of 2,700 AFY of imported water.

Subcriterion No. A.1(b) – Improved Water Management (Value = Up to 5 points possible)

The Stockdale Recovery Facilities Project increases diversification of water supplies for IRWD and enhances reliability during periods of interruption or droughts. IRWD's existing recharge basins at the Strand Ranch and Stockdale West Ranch sites in western Kern County replenish the San Joaquin Valley Groundwater Basin. With the Project, IRWD will be able to recover the banked water up a maximum of 9,000 AFY to augment its supplies during dry years or emergencies when other supplies may be restricted. On average, an annual average of 2,700 AFY will be recovered as a new supply, offsetting and conserving imported water, and in doing so, provide diversification of sources, and improve overall water management for IRWD. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State.

The Stockdale Recovery Facilities Project will install three new wells at the Stockdale West Ranch. The capacity of each well will be between 2,200 and 2,700 gpm (approximately 5 to 6 cfs or 3.2 to 4.0 million gallons per day (MGD). Based on operating 9 months per year at approximately 2,500 gpm (5.5 cfs), each well would recover approximately 3,000 AFY. With all three extraction wells in operation, up to a maximum total of 9,000 AFY of stored groundwater could be recovered, if all wells were in service for nine months. On average it is estimated that

the wells will extract approximately 2,700 AFY. Actual pumping rates will be dependent on seasonal and weather conditions.

The Stockdale West Ranch extraction wells will be similar to the ones IRWD installed seven extraction wells on neighboring Strand Ranch. Three new extraction wells will be installed with the Stockdale Recovery Facilities Project to provide more recovery capacity and fulfill the goals of this conjunctive use project. The Project will provide greater operational flexibility and enhance water supply reliability by providing a means to augment supplies when other sources may be limited or unavailable.

Subcriteria No. A.2 – Percentage of Total Supply (Value = Up to 4 additional points possible)

The Stockdale Recovery Facilities Project will install three recovery wells to extract an average of approximately 2,700 AFY of banked groundwater.

IRWD's total water supply consists of three types of waters:

1. Treated water (approximately 2/3 local groundwater and 1/3 imported water from Northern California and the Colorado River)
2. Untreated water (imported water)
3. Recycled water (local non-potable water)

Using the formula in Reclamation's Funding Opportunity Announcement:

$$\text{Percentage of Total Water Supply Conserved} = \frac{\text{Estimated Amount of Water Conserved}}{\text{Average Annual Water Supply}}$$

Table 1 shows the percentage of water supply conserved by the project in terms of each type of water as well as the total water supply based on water use records from July 2012 through June 2013. Of IRWD's total water supply, the Stockdale Recovery Facilities will save approximately 2.8%.

Table 1: Summary of Water Conserved by the Project as a Percentage of Total Supply

Water Type	FY 2012-2013 Usage (AFY)	Estimated Amount of Water Conserved by Project (AFY)	Percentage of Total Supply Conserved[1] (%)
Treated Water	60,758.7	2,700	4.4
Untreated Water	4,749.8	2,700	56.8
Recycled Water	30,486.9	2,700	8.8
Total	95,995.4	2,700	2.8

[1] $\text{Percentage of Total Water Supply Conserved} = \frac{2{,}700 \text{ AFY}}{\text{(FY 2012-2013 usage by type of water, AFY)}}$

Subcriteria No. A.3 – Reasonableness of Costs (Value = 4 additional points possible)

The Stockdale Recovery Facilities Project will construct three extraction wells to recover stored groundwater.

On average, the expected life of the wells is conservatively estimated at 30 years.

Using the formula in Reclamation's Funding Opportunity Announcement:

$$\text{Reasonableness of Costs} = \frac{\text{Total Project Cost}}{\text{(Acre-Feet Conserved, or Better Managed x Improvement Life)}}$$

$$\text{Reasonableness of Costs} = \frac{\$3,225,000}{2,700 \text{ AFY} \times 30 \text{ years}}$$

$$\text{Reasonableness of Costs} = \$39.81/\text{AF}$$

Evaluation Criterion B: Energy-Water Nexus (Total Value = Up to 16 points possible)

The Stockdale Recovery Facilities Project will utilize renewable, solar energy for powering flow meters for delivery to the adjacent Cross Valley Canal. .

Subcriterion No. B.1 – Implementing Renewable Energy Projects Related to Water Management and Delivery (Value = 16 points possible)

Recovered water from the facilities would be conveyed to the Cross Valley Canal through new recovery pipelines. The Stockdale Recovery Facilities Project will install solar panels to produce renewable energy for use by the flow meters on the discharge pipelines from each well for delivery of the recovered supply to the Cross Valley Canal. The well pump motors will be high efficiency units, powered by conventional utility electrical power.

Subcriterion No. B.2 – Increasing Energy Efficiency in Water Management (Value = 4 points possible)

The recovery wells will utilize high efficiency electric motors for the well pumps. This will enable IRWD to manage the stored and recovered water and efficiently convey it to Orange County and other partner's service areas for use through the California Aqueduct.

Solar panels will be installed to generate renewable energy with rechargeable batteries to power the flow meters on the well discharge pipes.

Evaluation Criterion C: Benefits to Endangered Species (Total Value = 12 points possible)

The Stockdale Recovery Facilities Project will benefit endangered species on a regional basis as well as on a local basis. State-wide, the Project will benefit the Delta Smelt in the Bay-Delta. In the local area of Kern County, the Project may benefit the San Joaquin kit fox. The Project will also benefit many types of birds.

Project Benefits to the Delta Smelt

Implementation of the Stockdale Recovery Facilities Project will reduce the need to import water into Orange County during dry years, which supports the reduction of the large scale pumping activities of the federal water project. The Delta Smelt, pictured on **Figure 12**, is endemic to the upper Sacramento-San Joaquin estuary of California; it mainly inhabits the freshwater-saltwater mixing zone of the estuary, except during its spawning season, which primarily takes place during the early spring months from March until May. Because of its one-year life cycle and relatively low fecundity, it is very susceptible to changes in the environmental conditions of its native habitat. Restricting water withdrawals from the Bay-Delta, particularly during droughts and emergencies, will protect the endangered Delta Smelt and other species dependent upon that water habitat. At the same time, IRWD will be able to reliably supply its service area's needs by recovering banked water from Stockdale West Ranch. This water supply diversity protects the environment and benefits the endangered species that depend on sensitive habitat.

Figure 12: Delta Smelt

Project Benefits to the San Joaquin Kit Fox

The San Joaquin kit fox is listed as endangered under the Federal Endangered Species Act and as threatened under the California Endangered Species Act. Prior to 1930, the San Joaquin kit fox inhabited most of the San Joaquin Valley, ranging from southern Kern County and extending north to eastern Contra Costa County and east to Stanislaus County. Today, its native habitat has been limited and fragmented by development, severely reducing the San Joaquin kit fox population. Much of the current populations are in western Kern County and San Luis Obispo County. **Figure 13** shows a photo of a San Joaquin kit fox.

The Project is located to the north of the Pioneer Canal and Cross Valley Canal which provide opportunities for wildlife movement. Wildlife movement corridors are features that allow wildlife movement between patches of habitat. The Project area connects to an adjacent area of open space, the Kern Water Bank, along the southern border of the Stockdale West property which provides a valuable, high quality habitat linkage (a connection between two or more habitat areas).

Habitat Conservation Plan (HCP), Kern Water Bank HCP, which support many sensitive species of amphibians, reptiles, birds, and mammals.

Evaluation Criterion D: Water Marketing (Total Value = Up to 12 points possible)

The Stockdale Recovery Facilities Project will install recovery wells to enable IRWD and its banking partners to recover and utilize previously stored water during dry years when other imported supplies are limited. IRWD imports water for potable water use from the SWP and the Colorado River Aqueduct. IRWD receives SWP and Colorado River Water from Metropolitan Water District (MWD) via Municipal Water District of Orange County (MWDOC). By completing this Project, IRWD will provide benefits to the region by using less SWP and Colorado River Water. The banked water recovered by the Project will offset, replace and conserve imported water supplies. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State.

In addition, the Stockdale Recovery Facilities Project will enable IRWD to potentially participate in water marketing by assisting other local Kern Fan water districts and regional water agencies during times of water shortage.

In 2004, Rosedale-Rio Bravo Water Storage District entered into an MOU with the Kern County Water Agency and other adjoining entities in the Kern River Fan area, which include Semitropic Water Storage District, Buena Vista Water Storage District, Henry Miller Water Storage District, Berrenda Mesa Water Storage District, Kern Water Bank Authority, Improvement District No. 4, and West Kern Water District. The MOU allows for operation of the conjunctive use program to achieve maximum benefits while avoiding or mitigating adverse impacts to the groundwater basin and to the operation of other groundwater banking programs in the Kern Fan area.

During times of shortage, IRWD could provide drought assistance through marketing to these entities within the local Kern Fan area with the recovery of conserved supplies. This will benefit the local agencies when surface supplies are reduced due to drought or other shortage conditions.

In addition to direct recovery through extraction, IRWD could recover the banked water by way of exchange. An exchange of in-lieu of recovery may be accomplished through the use of State Water Project (SWP) supplies through various water management programs and/or other surface supplies available.

Evaluation Criterion E: Other Contributions to Water Supply Sustainability (Total Value = Up to 14 points possible)

Answers to Reclamation's specific questions about water sustainability follow:

1. *Points may be awarded for projects that address an adaptation strategy identified in a completed **WaterSMART Basin Study**. Proposals that provide a detailed description of*

how a project is addressing an adaptation strategy specifically identified in a Basin Study (i.e., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes may receive maximum points under this criterion. Applicants should provide as much detail as possible about the relationship of the proposed project to the adaptation strategy identified in the Basin Study, including, but not limited to, the following:

a. *Identify the specific WaterSMART Basin Study where this adaptation strategy was developed. Describe in detail the adaptation strategy that will be implemented through this WaterSMART Grant project, and how the proposed WaterSMART Grant Project would help implement the adaptation strategy.*

The Stockdale Recovery Facilities Project will implement the following adaptation strategies in the *"Santa Ana Watershed Basin Study"*, which is the WaterSMART Basin Study completed by Reclamation in September 2013, as listed in **Table 2**.

Table 2: Applicable Adaptation Strategies from *"Santa Ana Watershed Basin Study"*

Santa Ana River Watershed (SARW) Adaptation Activities Supported by the Project[1]	Description
Improve operational efficiency	Promote systems reoperations, water transfers, and improved local and regional water conveyance. Optimize operational efficiency, promote water transfers, and develop regional water projects.
Increase water supply	Promote conjunctive management and groundwater storage; consider brackish and ocean desalination opportunities and more recycled water use, and local and regional surface storage opportunities. Identify watershed supply sources and increase storage capacity, and improve surface water operating efficiencies.

[1] From Table 5: "SARW Adaptation Strategies", "*Santa Ana Watershed Basin Study*", Reclamation, 2013.

b. *Describe how the adaptation strategy and proposed WaterSMART Grant project will address the imbalance between water supply and demand identified in the Basin Study.*

The Stockdale Recovery Facilities Project will implement the above adaptation strategies and address the imbalance between water supply and demand identified in the *"Santa Ana Watershed Basin Study"* by recovering banked groundwater at Stockdale West Ranch in western Kern County and conveying it to IRWD service area as a new water supply to meet demands during times when imported water may be reduced due to drought or other conditions. Three new recovery wells will be installed to extract an annual average of 2,700 AFY of groundwater, offsetting and conserving imported water, particularly during dry years and periods of supply shortages. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State.

c. *Identify the applicant's level of involvement in the Basin Study.*

IRWD was involved in the *"Santa Ana Watershed Basin Study"* as a stakeholder and provided input and review for collaboration in preparation of the Study. SAWPA is a joint powers authority comprised of five member agencies, one of which is Orange County Water District. IRWD is water producer within the Orange County Water District service area.

d. *Describe whether the project will result in further collaboration among Basin Study partners. Through the WaterSMART Basin Study Program, Reclamation is working with State and local partners, as well as other stakeholders, to comprehensively evaluate the ability to meet future water demands within a river basin. The Basin Studies allow Reclamation and its partners to evaluate potential impacts of climate change to water resources within a particular river basin and to identify adaptation strategies to address those impacts.*

The Stockdale Recovery Facilities Project will further collaboration among the *"Santa Ana Watershed Basin Study"* because the recovered groundwater will be a new water supply for the region. The new extraction wells will pump annual average supply of 2,700 AFY of banked groundwater stored in the San Joaquin Valley Groundwater Basin to existing canals and conveyance facilities that will wheel it to the IRWD service area. During dry years and emergencies, up to 9,000 AFY of groundwater may be recovered by the Project. This new supply will offset and conserve imported water supplies, making them available for others in the region or State. This Project will address the impacts of climate change by implementing the adaptation strategies in the *"Santa Ana Watershed Basin Study"*, and improve regional water management.

2. *Points may be awarded for projects that describe in detail how they will directly expedite future* ***on-farm irrigation improvements****, including future on-farm improvements that may be eligible for NRCS funding. Please address the following:*

   a. *Include a detailed listing of the fields and acreage that may be improved in the future.*

   IRWD purchased the Stockdale West Ranch farm in western Kern County and constructed recharge basins to capture diverted high flow Kern River and California Aqueduct water during wet years and percolate it for storage in the San Joaquin Groundwater Basin.

   b. *Describe in detail the on-farm improvements that can be made as a result of this project. Include discussion of any planned or ongoing efforts by farmers/ranchers that receive water from the applicant.*

   Not applicable - The Project will not make any on-farm improvements.

   c. *Provide a detailed explanation of how the proposed WaterSMART Grant project would help to expedite such on-farm efficiency improvements.*

   Not-applicable - The Project will not help expedite any on-farm efficiency improvements.

   d. *Fully describe the on-farm water conservation or water use efficiency benefits that would result from the enabled on-farm component of this project. Estimate the potential o-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.*

   Not-applicable - The Project does not involve on-farm water conservation.

   e. *Projects that include significant on-farm irrigation improvements should demonstrate the eligibility, commitment and number or percentage or shareholders who plan to participate in any available NRCS funding programs. Applicants should provide letters of intent from farmers/ranchers in the affected project areas.*

   Not-applicable - The Project does not improve on-farm irrigation.

   f. *Describe the extent to which this project complements an existing or newly awarded Agricultural Water Enhancement Program (AWEP) project.*

   Not applicable - The Project is not related to any AWEP project.

3. *Points maybe awarded for projects that include* ***other benefits*** *to water supply sustainability. Projects that do not address a need/adaptation strategy identified in a*

Basin Study or do not help expedite future on-farm irrigation improvements, may receive maximum points under this criterion by thoroughly explaining additional project benefits. Please provide sufficient explanation of additional expected project benefits and their significance. Additional project benefits may include, but are not limited to, the following:

a. *Will the project make water available to address a specific concern? For example:*

   i. *Will the project address supply shortages due to climate variability and/or heightened competition for finite water supplies (e.g., population growth or drought)? Is the river, aquifer or other source of supply over-allocated?*

   The Stockdale Recovery Facilities Project will install recovery wells to extract stored groundwater, particularly during droughts and periods when imported water supplies may be restricted. A maximum of 9,000 AFY will be recovered. The annual average recovery will be approximately 2,700 AFY. The existing Stockdale West Ranch recharge basins will percolate high flows diverted from the Kern River and California Aqueduct during wet years and can bank up to about 27,000 AF. Banked water will be stored in the 1.7 million AF San Joaquin Valley Groundwater Basin.

   ii. *Will the project market water to other users? If so, what is the significance of this (e.g., does this help stretch water supplies in a water-short basin)?*

   IRWD will provide drought assistance to local agencies in Kern County and Orange County by making the Stockdale water available during shortages and outages. IRWD has agreed to leave approximately 15% of its stored, banked groundwater for Kern County agencies' use.

   iii. *Will the project make additional water available for Indian tribes?*

   At this time, the Project will not make additional water available for Indian tribes. However, under partnership agreements, water could be made available.

   iv. *Will the project help to address an issue that could potentially result in an interruption to the water supply if unresolved? (e.g., will the project benefit an endangered species by maintaining an adequate water supply)? Are there endangered species within the basin or other factors that may lead to heightened competition for available water supplies among multiple water uses?*

The Stockdale Recovery Facilities Project will install recovery wells to extract an annual average of 2,700 AFY of stored groundwater. Higher volumes, up to 9,000 AFY, may be recovered during droughts and shortages to replace and conserve imported water. Without the Project, the banked groundwater would be lost because no means of recovery is available. The Project will conserve imported water supplies and reduce demands on the Bay-Delta, thereby benefitting the Delta Smelt, which is an endangered species.

v. *Will the project generally make more water available in the water basin where the proposed work is located?*

IRWD may allocate one-half of the storage capacity to banking partners including other California water agencies or local Kern County agencies. The Project will always leave water in the ground in an amount consistent with the MOU (ranging from 11 to 15 percent) to account for losses. The Project can only recover water up the amount previously banked less the losses, as a result the local basin benefits by the water left behind.

In addition, during times of shortage, IRWD could provide drought assistance through marketing to these entities within the local Kern Fan area with the recovery of conserved supplies. This will benefit the local agencies when surface supplies are reduced due to drought or other shortage conditions.

Does the project promote and encourage collaboration among parties?

The Stockdale Recovery Facilities Project is based on collaboration between IRWD and its partner, Rosedale-Rio Bravo Water Storage District.

vi. *Is there widespread support for the project?*

Yes, IRWD customers will benefit from the new water supply, enhanced reliability and improved supply diversity, particularly during dry years and when imported water supplies may be limited. IRWD's partner, Rosedale-Rio Bravo Water Storage District supports the Project because it increases available capacity in the existing Conjunctive Use Program and facilitates operational flexibility.

vii. *What is the significance of the collaboration/support?*

The collaboration/support forms the basis for the Stockdale Recovery Facilities Project, which will be an element of the Conjunctive Use Plan. Partnerships are essential for water banking.

viii. Will the project help to prevent a water-related crisis or conflict?

Yes, approximately 30% of IRWD water demands are met with imported water supplies from Northern California and the Colorado River by MWD. The Stockdale Recovery Facilities Project will recover previously stored water, particularly during dry years and periods when imported water may be restricted. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State. Having redundant water sources enhances IRWD's system overall reliability for potential scenarios such as catastrophic failures of water conveyance infrastructure, a shut-down of Delta water supplies, or water quality issues. Recovery of previously stored conserved water can help prevent water-related crises and conflicts by producing a new water supply and effectively increasing the amount of imported water available for other water users during times when surface supplies are reduced. Conjunctive use maximizes water use more efficiently than groundwater and surface water projects operated separately – allowing for greater conservation.

ix. Is there frequently tension or litigation over water in the basin?

Water for the Project will be secured and acquired from various sources, potentially including federal, state, and local supplies through unbalanced exchange agreements, purchase or temporary transfers, as available. Many of the agreements are already in place and have been functioning for decades among numerous parties. The MOU allows for operation of the conjunctive use program to achieve maximum benefits while avoiding or mitigating adverse impacts to the groundwater basin and to the operation of other groundwater banking programs in the Kern Fan area.

x. Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?

The Stockdale Recovery Facilities Project will recover stored groundwater to help meet the needs of IRWD's service area and its banking partners' service area. During times of shortage, IRWD could provide drought assistance through marketing to these entities within the local Kern Fan area with the recovery of conserved supplies. This will benefit the local agencies when surface supplies are reduced due to drought or other shortage conditions.

b. Will the project increase awareness of water and/or energy conservation and efficiency efforts?

The Stockdale Recovery Facilities Project will be a new recovery component in Rosedale-Rio Bravo Water Storage District's Conjunctive Use Program, which is a water conservation and supply management effort involving many agencies in the region and the State.

i. *Will the project serve as an example of water and/or energy conservation and efficiency within a community?*

The Stockdale Recovery Facilities Project will recover stored groundwater to offset and conserve imported water. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State.

Using high efficiency pump motors and solar-powered flow meters, the Project will serve as an example of water conservation and energy efficiency. Solar-powered flow meters will measure all water recovered and delivered to the Cross Valley Canal.

ii. *Will the project increase the capability of future water conservation or energy efficiency efforts for use by others?*

Yes, the Stockdale Recovery Facilities Project will increase water conservation and energy efficiency efforts for others, particularly Rosedale-Rio Bravo Water Storage District and its partners by recovering stored groundwater for beneficial use in place of imported water.

iii. *Does the project integrate water and energy components?*

The Stockdale Recovery Facilities Project will recover stored groundwater to offset and conserve imported water making it available for others in the region or State. Using high efficiency pump motors and solar-powered flow meters, the Project will integrate water and energy components in a highly sustainable manner that has been proven by prior successful projects (e.g., Strand Ranch Recovery Facilities Project).

Evaluation Criterion F: Implementation and Results (Total Value = Up to 10 points possible)

Subcriteria No. F.1 – Project Planning

1. *Does the project have a Water Conservation Plan, System Optimization Review (SOR), and/or district or geographic area drought contingency plans in place?*

IRWD prepared a 2010 Urban Water Management Plan (adopted in June 2011) which incorporates conservation programs which are in alignment with the Regional Alliance target included in Municipal Water District of Orange County's (MWDOC) Regional

Water Management Plan and continually evaluate the programs to maximize water savings and integrate the latest water efficiency technologies and practices. In addition, IRWD discusses its development of water banking facilities in Kern County and its water banking agreements in place to recover and deliver the conserved water.

The Stockdale Recovery Facilities Project is a key component of IRWD's drought contingency planning because it will install extraction wells to recover previously stored groundwater to supplement supplies during water shortage.

2. *Does the project relate/have a nexus to an adaptation strategy developed as part of a WaterSMART Basin Study?*

The Stockdale Recovery Facilities Project will implement the adaptation strategies in the *"Santa Ana Watershed Basin Study"*, which is the WaterSMART Basin Study completed by Reclamation in September 2013, as listed in **Table 3**.

Table 3: Applicable Adaptation Strategies from *"Santa Ana Watershed Basin Study"*

Santa Ana River Watershed (SARW) Adaptation Activities Supported by the Project[1]	Description
Improve operational efficiency	Promote systems reoperations, water transfers, and improved local and regional water conveyance. Optimize operational efficiency, promote water transfers, and develop regional water projects.
Increase water supply	Promote conjunctive management and groundwater storage; consider brackish and ocean desalination opportunities and more recycled water use, and local and regional surface storage opportunities. Identify watershed supply sources and increase storage capacity, and improve surface water operating efficiencies.

[1] From Table 5: "SARW Adaptation Strategies", "*Santa Ana Watershed Basin Study*", Reclamation, 2013.

The Stockdale Recovery Facilities Project will implement the above adaptation strategies and address the imbalance between water supply and demand identified in the *"Santa Ana Watershed Basin Study"* by recovering banked groundwater at Stockdale West Ranch in western Kern County and conveying it to IRWD service area as a new water supply to meet demands. Three new recovery wells will be installed to extract an annual

average of 2,700 AFY of groundwater, offsetting and conserving imported water, particularly during dry years and periods of supply shortages. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State.

The Stockdale Recovery Facilities Project is consistent with the California Department of Water Resources (DWR) water management goals for California, which align with Reclamation's WaterSMART Basin Study "*Santa Ana Watershed Basin Study*". In the *California Water Plan Update 2009,* DWR recognizes the benefits of conjunctive water management, which include improving water supply reliability, reducing groundwater overdraft and land subsidence, and protecting water quality and environmental conditions.

3. *Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, Basin Study, or other planning efforts done to determine the priority of this project in relation to other potential projects.*
4. IRWD prepared a 2010 Urban Water Management Plan (adopted in June 2011) which incorporates conservation programs which are in alignment with the Regional Alliance target included in Municipal Water District of Orange County's (MWDOC) Regional Water Management Plan and continually evaluate the programs to maximize water savings and integrate the latest water efficiency technologies and practices. In addition, IRWD discusses its development of water banking facilities in Kern County and its water banking agreements in place to recover and deliver the conserved water.

   The Stockdale Recovery Facilities Project is a key component of IRWD's drought contingency planning because it will install extraction wells to recover previously stored groundwater to supplement supplies during water shortage. The Stockdale Recovery Facilities Project is planned by IRWD to enhance its water supply reliability, particularly in dry years and emergency conditions. Based on the successful completion of the neighboring Strand Ranch Water Banking Project and the Stockdale West recharge basins, IRWD plans to install extraction wells with this Project for increased supply diversity.

   Reclamation's "*Santa Ana Watershed Basin Study*" promotes water supply diversity and reliability planning in the region. The Stockdale Recovery Facilities Project will implement adaptation strategies and address the imbalance between water supply and demand identified in the "*Santa Ana Watershed Basin Study*" by recovering banked groundwater at Stockdale West Ranch in western Kern County and conveying it to IRWD service area as a new water supply to meet demands. Three new recovery wells will be installed to extract an annual average of 2,700 AFY of groundwater, offsetting

and conserving imported water, particularly during dry years and periods of supply shortages. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State.

Lastly, another region-wide resources plan, the Santa Ana Watershed Project Authority (SAWPA) One Water One Watershed (OWOW), emphasizes increased water supply diversity and improved water management in the Santa Ana River Watershed. IRWD is located within in SAWPA's boundary and participated in the OWOW Plan which was adopted in November 2010. An updated OWOW Plan is in progress. The OWOW Plan states that the key to meeting water demands is water resources optimization with increased storage, including water banking, in wet years for use in dry years as a key element of imported water supply management. One of its water management strategies is development of new sources of supply. The Stockdale Recovery Facilities Project will help IRWD and the region to participate in water banking/groundwater storage and recovery.

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

Preliminary planning for the environmental documentation work has been completed. The Environmental Impact Report (EIR) for compliance with California Environmental Quality Act (CEQA) for the Stockdale Recovery Facilities Project is currently in progress. A Notice of Preparation of an Environmental Impact Report (EIR) was filed by IRWD on September 24, 2013. It is anticipated that the Draft EIR for the Stockdale Recovery Facilities Project will be released for public review in February 2014. National Environmental Policy Act (NEPA) documentation to comply with federal grant requirements is expected to be completed in Spring 2014.

The Stockdale Recovery Facilities Project will construct three recovery wells at the Stockdale West Ranch where recharge basins are currently in operation. The recovery wells are needed to extract the stored, banked groundwater to offset and conserve imported water. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State particularly during times of drought and shortage.

The EIR contains hydrogeologic modeling that was performed for the project to determine potential groundwater level changes from the artificial recharge and recovery operations at the Stockdale Integrated Banking Project. Additional geotechnical investigation and hydrogeological modeling are needed to locate the well sites. These tasks, along with the engineering design work, have not yet begun.

6. *Describe how the project conforms to and meets the goals of any applicable State or regional water plans, and identify any aspect of the project that implements a feature of an existing water plan(s).*

The Stockdale Recovery Facilities Project is consistent with the California Department of Water Resources (DWR) water management goals. In the *California Water Plan Update 2009,* DWR recognizes the benefits of conjunctive water management, which include improving water supply reliability, reducing groundwater overdraft and land subsidence, and protecting water quality and environmental conditions.

The Stockdale Recovery Facilities Project will increase water supply diversity and reliability, which supports regional goals as established by the Santa Ana Watershed Project Authority (SAWPA) in the "One Water One Watershed" (OWOW), which is the Santa Ana Watershed Integrated Regional Water Management Plan (IRWMP). IRWD is a member agency of SAWPA, and one of the stakeholders in the OWOW. The OWOW Plan was adopted on November 16, 2010; an update is in progress.

The mission of the OWOW Plan is to create opportunities for collaboration to find sustainable watershed-wide solutions among diverse stakeholders throughout the Santa Ana River Watershed. The OWOW Plan provides a blueprint for water resources management for the next 30 years.

The Stockdale Recovery Facilities Project conforms to and meets the following visions and goals of the OWOW Plan:

- "A Watershed that is sustainable, drought-proofed and salt-balanced by 2030, and in which water resources are protected and water is used efficiently."
- "A Watershed that is adaptable to climate change."
- "Increased storage – Store water to account for half of watershed demand for 3 years."
- "Consideration of stormwater as a water supply – Capture and recharge 80% of rainfall."

The Stockdale Recovery Facilities Project will help drought-proof the region and adapt to climate change. IRWD has already increased the volume of stormwater captured and recharged, increasing storage, at Stockdale West Ranch. The Project will install recovery wells that will extract the banked groundwater to offset and conserve imported water supplies, particularly during droughts and supply interruptions. By offsetting imported water that would otherwise be delivered to IRWD or its partners, this new supply essentially frees up state water for others in the region or State.

Subcriterion No. F.2—Readiness to Proceed

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. (Please note, under no circumstances may an applicant begin any ground-disturbing activities – including grading, clearing, and other preliminary activities – on a project before environmental compliance is complete and Reclamation explicitly authorizes work to proceed.) Please explain any permits that will be required, along with the process for obtaining such permits.

Preliminary planning has already been completed and environmental compliance is underway. Major tasks and key milestones and dates for implementation of the Stockdale Recovery Facilities Project are described below.

Major Tasks

A list of major tasks involved in implementation of the Stockdale Recovery Facilities Project follows:

Planning and Design Phase

1. Environmental compliance (in progress)
2. Geotechnical investigations
3. Hydrogeological modeling
4. Engineering design
5. Bid phase engineering services

Construction Phase

1. Well drilling
2. Construction of the facilities
3. Construction management and inspection
4. Start-up testing
5. Contract close-out

Detailed Breakdown of Project Tasks and Activities

Planning Phase

1. Environmental Compliance: The requirement of the environmental documentation for compliance with California Environmental Quality Act (CEQA) for the Stockdale Recovery Facilities Project is currently in progress. A Notice of Preparation of an Environmental Impact Report (EIR) was filed by IRWD on September 24, 2013. It is anticipated that the Draft EIR for the Stockdale Recovery Facilities Project will be

released for public review in February 2014. National Environmental Policy Act (NEPA) documentation to comply with federal grant requirements will proceed in May-June 2014 to complete the environmental compliance.

2. Geotechnical Investigation: Soil borings and tests will begin in August 2014. The soils/geotechnical investigation report will be prepared and completed by September 2014.
3. Hydrogeological Modeling: Groundwater modeling will incorporate the findings of the geotechnical investigation report to site the wells for optimum management of the groundwater recharge basins and extraction wells. Well sites will be identified by October 2014.
4. Engineering Design: Final design of the three wells, piping, and site facilities will begin in November 2014 and will be completed by April 2015. IRWD will contract with an engineering firm which will provide the required geotechnical, civil, mechanical, electrical, and instrumentation/controls engineering disciplines, working on the design as a coordinated team. Engineering design and documents will include drawings and specifications issued for competitive bids by qualified contractors.
5. Bid Phase Engineering Service: This phase will begin once the final design is complete. It is anticipated that a 60-day bid period will conclude in June 2015 when construction bids will be received and a contract will be awarded. During the bid phase, the design engineer will respond to request for clarification of the plans and specifications by issuing addenda where necessary.

Construction Phase

1. Following issuance of the notice to proceed in July 2015, contractor mobilization and well drilling will begin. Well drilling will involve drilling and boring machinery and installation of the well casing and screen.
2. Construction will follow the well drilling and involve equipping the well, placement of the well pump, control valves, and wellhead equipment, and installation of piping, site facilities and access roads, solar panels for the flow meters, telemetry, controls, and appurtenances. The site facilities may include fencing and/or building enclosures for the wellhead equipment. The conveyance piping will be below grade, installed under existing roads, to the points of discharge into the existing Cross Valley Canal. It is anticipated that the construction phase will begin in July 2015 and extend for 21 months, ending in March 2017.
3. Construction management and inspection will run in parallel with the construction phase. IRWD will utilize its partner, Rosedale-Rio Bravo Water Storage District's staff, to be the on-site construction manager and inspectors of the Project.
4. Start-up testing will be conducted between February and March 2017.

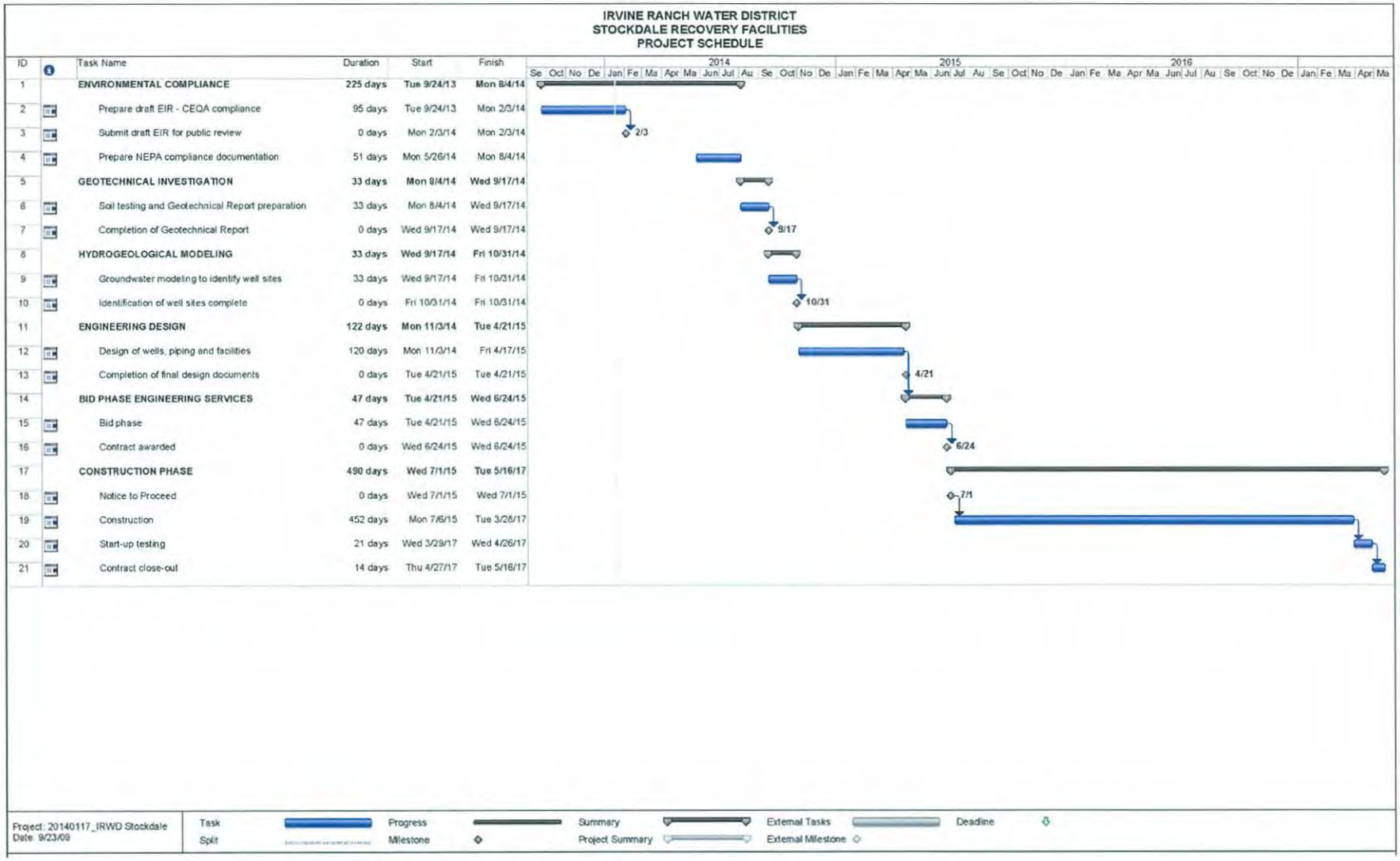
5. Contract close-out: Administration of the project will be managed by IRWD; tasks include budgeting, expenditures, schedule and progress reporting. Status reports will be submitted with invoices as the project progresses and a final report will be submitted at the completion of the project in May 2017.

Project Schedule

The Stockdale Recovery Facilities Project schedule is shown in Figure 14 Key milestones are listed below:

- September 2014 – Geotechnical Investigation Completed
- October 2014 – Hydrogeological Modeling Completed
- April 2015 – Final Engineering Design Completed
- June 2015 – Construction Bids Received and Contract Awarded
- July 2015 – March 2017 – Construction
- March 2017 – Start-up Testing Completed
- May 2017– Contract Close-out and Final Report Submitted to Reclamation

Figure 14: Stockdale Recovery Facilities Project Schedule



The Memorandum of Understanding (MOU) between Rosedale-Rio Bravo Water Storage District and its water banking partners will be amended soon to include IRWD's participation in Stockdale West Ranch and the Stockdale Recovery Facilities Project.

Table 4 summarizes the applicable agencies and permits/approvals for the Project.

Table 4 - Summary of Permits/Approvals Required for the Stockdale Recovery Facilities Project

Agency	Permit/Approval
Regional Water Quality Control Board (RWQCB)	▪ Stormwater Pollution Prevention Plan(s) (SWPPP)
California Department of Water Resources (DWR)	▪ Use of the California Aqueduct to convey water
Kern County	▪ Development within the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) area
Kern County Water Agency	▪ Use and modifications required to the Cross Valley Canal
MWD	▪ Exchange and convey water

Subcriterion No. F.3 – Performance Measures

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved, marketed, or better managed, or energy saved). For more information calculating performance measure, see Section VIII.A.1 "FY 2014 WaterSMART Water and energy Efficiency Grants: Performance Measures."

Note: All WaterSMART Grant applicants are require to propose a "performance measure (a method of quantifying the actual benefits of their project once it is completed). A provision will be included in all assistance agreements with WaterSMART Grant recipients describing the performance measure and requiring the recipient to quantify the actual project benefits in their final report to Reclamation upon completion of the project. If information regarding project benefits is not available immediately upon completion of the project, the financial assistance agreement may be modified to remain open until such information is available and until a Final Report is submitted. Quantification of project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of WaterSMART Grants.

Performance of the Stockdale Recovery Facilities Project will be measured by flow meters on the discharge pipes of the three recovery wells. The extracted groundwater will be metered, recorded and reported, indicating how the Project is performing in comparison to its targets. It is estimated that extracting the stored, or banked, groundwater will replace, conserve, and save an annual average of 2,700 AFY of imported water. Maximum extraction volumes up to 9,000 AFY will occur during droughts and periods of imported water interruption. Performance will be measured by the actual flow delivered by the recovery wells.

Evaluation Criterion G: Additional Non-Federal Funding (Total Value = Up to 4 points)

IRWD will be the source and support for all non-Federal funding for the Stockdale Recovery Facilities Project. IRWD has bond funds available to fund their share of the Project. No other funding sources or agencies are participating in the project at this time.

The percentage of non-Federal funding provided will be: $\frac{\text{Non-Federal Funding}}{\text{Total Project Cost}}$

$= \frac{\$2,225,000}{\$3,225,000}$

$= 69\%$

Evaluation Criterion H: Connection to Reclamation Project Activities (Total Value = 4 points possible)

The Stockdale Recovery Facilities Project is connected to Reclamation project activities by: (1) supporting the *"Santa Ana Watershed Basin Study"* and (2) its location in Kern County, near the Central Valley Project (CVP) and partnership with Rosedale-Rio Bravo Water Storage District.

In the past, IRWD has collaborated with Reclamation in projects increasing water sustainability in the region: (1) Strand Ranch Recovery Facilities Project, which was partly funded by the Water 2025 Grant Program, and (2) Irvine Basin Surface and Groundwater Improvement Projects, which were funded under Title XVI.

Santa Ana Watershed Basin Study

The Stockdale Recovery Facilities Project will implement the regional goals of the *"Santa Ana Watershed Basin Study"*, which is the WaterSMART Basin Study completed by Reclamation in September 2013. The Project will improve operational efficiency and increase water supplies in the region and watershed.

Central Valley Project

Recharge water for the Project will be secured and acquired by IRWD from various sources, potentially including federal, state, and local supplies through unbalanced exchange agreements, purchase or temporary transfers, or other means as available. Sources could include high-flow

Kern River water depending on annual availability, pre-1914 water rights, the CVP, and the State Water Project (SWP).

Reclamation's CVP is a network of dams, power plants and canals that provides water supply reliability to the Central Valley in periods of drought. Reclamation makes excess non-storable CVP Section 215 flood water available during wet years. If conveyance is available, this surplus CVP water could be delivered to the Stockdale West Ranch recharge basins from the Friant-Kern Canal through the Cross Valley Canal. Rosedale-Rio-Bravo Water Storage District is a fourth priority non-CVP South-of-Delta (SOD) Contractor that can take CVP water under certain conditions. IRWD does not have priority to CVP water, and would not be able to export recharged Section 215 water to its customers in Orange County. Therefore, Rosedale Rio-Bravo Water Storage District could assist and cooperate with IRWD in the exchange of Section 215 flood water for exportable water for delivery into IRWD's service area. Thus, indirectly, IRWD's Stockdale Recovery Facilities Project is connected to the Reclamation's CVP.

Water 2025 Program

IRWD entered into Cooperative Agreement No. 08-FG-35-0253 with the Bureau of Reclamation for the Strand Ranch Water Banking Project on September 25, 2008, in the amount of $300,000. The project included construction of recharge basins, recovery facilities, and Cross Valley Canal capacity. The agreement was closed on June 1, 2009 with all terms and conditions met and final payment processed.

The Stockdale Recovery Facilities Project will be located at Stockdale West Ranch, which is adjacent to Strand Ranch. The Project will install recovery wells that will be similar to those at Strand Ranch.

Title XVI for the Irvine Basin Surface and Groundwater Improvement Projects

On May 24, 2004, IRWD received Project authorization under the Reclamation Wastewater and Groundwater Study and Facility Act for the Irvine Basin Surface and Groundwater Improvement Projects.

1. IRWD entered into Cooperative Agreement No. 08-FC-35-0238 with Reclamation on July 21, 2008 under the Irvine Basin Groundwater and Surface Water Improvement Project as authorized under Section 1626 of Title XVI for the Irvine Desalter and South Irvine Brineline. The total obligation under the cooperative agreement is $37,541,766 of which Bureau of Reclamation share is 25%. The Irvine Desalter and South Irvine Brineline projects have been completed and are operational.

2. IRWD entered into Cooperative Agreement No. R10AC35R09 with Reclamation under IRWD's Title XVI program for the Natural Treatment System Site No. 67 effective December 22, 2009. This project proposes a subsurface flow wetland specifically designed

to naturally remove selenium and nitrate from low flows diverted into the facility. This project was completed in September 2011.

3. IRWD entered into Cooperative Agreement No. R10AC34R04 with Reclamation under IRWD's Title XVI program for Tustin Legacy Well 1 project effective March 26, 2010. This well project includes construction of a new well within the vicinity of the former Marine Corps Air Station Tustin. It is estimated that this well will produce about 1,500 gallons per minute of impaired groundwater. This project was completed in September 2010.

4. IRWD entered into Cooperative Agreement No. R10AC35R08 with Reclamation under IRWD's Title XVI program for its Wells 21 and 22 Desalter Project effective April 30, 2010. This well project includes supply facilities (wells), groundwater conveyance pipeline, treatment facilities and brine disposal pipeline and finished water transmission pipeline. The project was completed in March 2013 and is operational. It is expected to deliver up to 6,700 AFY of potable water to IRWD's Zone 1 potable distribution system.

E.5. Technical Proposal: Performance Measures

Performance of the Stockdale Recovery Facilities Project will be measured by solar powered flow meters on the discharge pipes of the three recovery wells. The extracted groundwater will be metered, recorded and reported, indicating how the Project is performing in comparison to its targets. It is estimated that extracting the stored, or banked, groundwater will replace, conserve, and save an annual average of 2,700 AFY of imported water. Maximum extraction volumes up to 9,000 AFY will occur during droughts and periods of imported water interruption. Performance will be measured by the actual flow delivered by the recovery wells to the Cross Valley Canal.

F. Performance Measures

The Stockdale Recovery Facilities Project will use solar powered flow meters to measure the performance of the Project. Recovery well discharges will be metered, recorded, and reported. The water conservation volume will be measured by flow meters on the discharge pipes from the three recovery wells. It is estimated that extracting the stored, or banked, groundwater will replace, conserve, and save an annual average of 2,700 AFY of imported water. Maximum extraction volumes up to 9,000 AFY will occur during droughts and periods of imported water interruption. The water recovery rates will vary from year to year depending on seasonal and climatic conditions. Performance will be measured by the actual flow delivered by the recovery wells to the Cross Valley Canal.

G. Environmental and Cultural Resources Compliance

The Stockdale Recovery Facilities Project will comply with all State and Federal environmental compliance requirements.

Answers to specific Reclamation questions follow:

1. *Will the project impact the surrounding environment (i.e., soil [dust], air, water [quality and quantity], animal habitat)? 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.*

   The Project will be constructed on the Stockdale West Ranch property, which is located in western Kern County and is owned by IRWD. Stockdale West Ranch is adjacent to IRWD's Strand Ranch. Existing recharge basins have been constructed on these properties. The Cross Valley Canal and Pioneer Canal are adjacent to the site. Several extraction wells have been constructed on the neighboring Strand Ranch. The Project will install three additional wells to recover stored groundwater achieving conjunctive use and enhancing water supply diversity. Environmental documentation for compliance with California Environmental Quality Act (CEQA) for the Stockdale Recovery Facilities Project is currently in progress. A Notice of Preparation of an Environmental Impact Report (EIR) was filed by IRWD on September 24, 2013. It is anticipated that the Draft EIR for the Stockdale Recovery Facilities Project will be released for public review in February 2014. National Environmental Policy Act (NEPA) documentation to comply with federal grant requirements will proceed in May-June 2014 to complete the environmental compliance. The following briefly explains any impacts the Project may have on the surrounding environment and mitigation measures to minimize the impacts.

   Aesthetics: The existing aesthetic quality of the Project area is dominated by rural agriculture. The existing Stockdale West Ranch and Strand Ranch sites have already been converted from agricultural land uses to groundwater banking land uses. While these sites are adjacent to agricultural lands, recharge basins have already been constructed in the Project area.

   Agricultural Resources: The Project will increase the amount and reliability of groundwater supplies available for irrigated agriculture in the Kern County region through exchanges between IRWD and its partners. The Project will contribute beneficially to agricultural production. When not being used for groundwater recharge, the basins may be maintained by either grazing or irrigated agricultural activities. The recovery well sites will be fenced and contained.

   Air Quality: Construction of the Project will generate emissions from construction equipment exhaust, earth movement, construction workers' commutes and material hauling. However, these emissions will primarily occur with the project area and be limited to a finite period of time. Contractors will be required to use dust abatement

techniques on unpaved, unvegetated surfaces to minimize airborne dust. When possible, construction activities will be scheduled during periods of low winds to reduce fugitive dust.

Greenhouse Gas Emissions: Construction activities will require operation of equipment and vehicles that emit greenhouse gases (GHGs). Project facilities will be operated with electrical power, the generation of which produces GHGs. Renewable energy, including solar power, will be utilized for the flow meters on the well discharge pipelines.

Hazards and Hazardous Materials: Construction of the new Project facilities will require excavation of the existing ground surface, which could uncover contaminated soils or hazardous substances that post a substantial hazard to human health or the environment. The EIR will assess the potential for encountering hazardous materials and conditions and develop mitigation measures if necessary to ensure that any hazards encountered during construction would be handled in accordance with applicable regulations. The EIR will also assess the potential for the public or environment to be affected by accidental release of hazardous materials due to Project construction and operation and will develop mitigation measures if necessary to minimize potential effects. Operation of the groundwater recharge basins and wells could mobilize existing soil contamination. The EIR will assess the potential for Project operations to affect the location of contamination plumes and subsequently affect groundwater quality.

Hydrology and Water Quality: The EIR will identify surface water and groundwater resources in the vicinity of the Stockdale site and will evaluate potential impacts posed by the Project during construction and operation. The EIR will describe the recharge, storage, and recovery capacities of the site and model potential impacts of recharge and extraction activities both onsite and offsite. The EIR will summarize the results of a groundwater drawdown analysis for the proposed production well operations and a mounding analysis for the recharge operations. Cumulative impacts of operating the Project will include an assessment of incremental impacts to groundwater due to coordinated operation of the Project facilities and other nearby facilities associated with Rosedale's Conjunctive Use Program and the Strand Ranch Project.

The EIR will also provide existing groundwater quality data, analyze the differential Project impacts to water quality based on source waters, and analyze the impact of Project operations on any nearby groundwater contamination plumes. In addition the EIR also will describe potential impacts associated with storm water runoff and develop mitigation measures if necessary to meet construction and operational storm water quality requirements and minimize impacts to receiving waters.

Mineral Resources: Petroleum resources and oil production facilities are present in the western portion of Kern County where the Project will be located. The status of oil

operation will be described in the EIR. The EIR will identify impacts to mineral resources that would result from implementation of the Project and develop mitigation measures to avoid or substantially lessen impacts if necessary.

Noise: Construction of the Project will generate noise that could be audible by nearby residents and other sensitive receptors in the vicinity of the Stockdale site. The EIR will evaluate the proximity of sensitive receptors to the site and recommend mitigation measures if necessary to ensure that the Project complies with local policies and ordinances and minimizes noise impacts.

Transportation and Traffic: Construction of the Project will temporarily add additional vehicle trips to local transportation corridors, including material haul trips and construction worker commutes. The EIR will evaluate the impact of the Project on traffic and circulation in the vicinity of the Project site and local and regional roadways. The EIR will develop mitigation measures if necessary to minimize any potential effects. Speed limits will be limited to a maximum of 25 miles per hour at the site to minimize any roadway danger to the San Joaquin kit fox during construction.

Utilities and Energy: Construction and operation of the Project could affect public utilities and regional energy requirements. To the extent possible, the Project will use solar power for flow meters on the well discharge pipelines. The EIR will describe any potential need for water entitlements to operate the Project and identify potential impacts to local and regional energy supplies and capacity due to operation of well pumps and wellheads. The EIR also will describe any potential impacts on storm water drainage systems and solid waste facilities, including regional landfill capacities and availability to accept construction debris.

2. *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? If so, would they be affected by any activities associated with the proposed project?*

Biological Resources: The Project will be located on sites where recharge basins presently exist and are surrounded by agricultural lands. Natural habitat in the immediate vicinity is limited. CEQA and NEPA documentation will evaluate the potential for the Project to impact biological resources, such as sensitive species and critical habitats, and will evaluate the Project's consistency with the Metropolitan Bakersfield Habitat Conservation Plan (HCP), Kern Water Bank HCP, local ordinances and state and federal regulations governing biological resources. Mitigation measures will be incorporated into the Project to minimize or eliminate any impacts on the San Joaquin kit fox during construction. Perimeter fencing around the well sites will allow the San Joaquin kit fox to enter, exit and pass through the area, at least 8-inch by 12-inch openings every 100 yards about 12-inches above grade.

3. *Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "waters of the United States"? If so, please describe and estimate any impacts the project may have.*

   The Project area does not contain wetlands within its boundaries; however, the project site is near existing man-made recharge basins and canals.

4. *When was the water delivery system constructed?*

   The Cross Valley Canal, Kern County's primary conduit for water deliveries to and from the California Aqueduct, was originally constructed in 1975 and recently expanded in 2012. The Cross Valley Canal conveys supplemental water from the California Aqueduct to the Bakersfield area. An intertie between the Friant-Kern and Cross Valley Canals increased the conveyance capacity and enabled Cross Valley Contractors to move Central Valley Project supplies from the west side of the valley to the east. The California Aqueduct will provide for delivery of banked supplies with conveyance to IRWD's service area through the existing MWD system.

5. *Will the project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*

   The Project will install extraction wells near existing recharge basins, which are located adjacent to the Cross Valley Canal and Pioneer Canal. Because the wells will recover groundwater banked in the San Joaquin Valley Groundwater Basin, the Project should not result in any modification of or effects to, individual features of an irrigation system.

   Land Use: The Project will be located in a rural area of Kern County. Designated land uses for the Stockdale site include agricultural use and recharge basins.

6. *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*

   The Project will be constructed on rural lands formerly used for agricultural purposes and presently the site of recharge basins. The Stockdale West Ranch site and will not affect any irrigation district structures or National Historic Places.

7. *Are there any known archeological sites in the proposed project area?*

There are no known archeological sites in the proposed project area. The project will be constructed at the Stockdale West Ranch site in Kern County.

Cultural Resources: Stockdale West Ranch is located in disturbed areas primarily used for agricultural production; however, excavation below the top soil could uncover previously unknown archaeological, paleontological, or historical resources in the area. The Project well sites will be limited in size, which will help minimize impacts. Construction will be required to implement mitigation measures in accordance with the EIR.

8. *Will the project have a disproportionately high and adverse effect on low income or minority populations?*

   No, the Project will have no disproportionately high and adverse effects on low income or minority populations.

9. *Will the project limit access and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*

   No, the Project is not located on or near any Indian sacred sites or tribal lands.

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

    No, the Project will not introduce, support the continued existence, or spread of noxious weeds or non-native invasive species known to occur in western Kern County.

Note, if mitigation is required to lessen environmental impacts, the applicant may, at Reclamation's discretion, be required to report on progress and completion of these commitments. Reclamation will coordinate with the applicant to establish reporting requirements and intervals accordingly.

Under no circumstances may an applicant begin any ground-disturbing activities (including grading, clearing, and other preliminary activities) on a project before environmental compliance is complete and Reclamation explicitly authorizes work to proceed. This pertains to all components of the proposed project, including those that are part of the applicant's non-Federal cost share. Reclamation will provide a successful applicant will information once environmental compliance is complete. An applicant that proceeds before environmental compliance is complete may risk forfeiting Reclamation funding under this FOA.

H. Required Permits or Approvals

Various permits or approvals will be required for the Stockdale Recovery Facilities Project. **Table 5** summarizes the applicable agencies and permits/approvals for the Project.

Table 5 - Summary of Permit/Approvals Required for the Stockdale Recovery Facilities Project

Agency	Permit/Approval
Regional Water Quality Control Board (RWQCB)	▪ Stormwater Pollution Prevention Plan(s) (SWPPP)
California Department of Water Resources (DWR)	▪ Use of the California Aqueduct to convey water
Kern County	▪ Development within the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) area
Kern County Water Agency	▪ Use and modifications required to the Cross Valley Canal
MWD	▪ Exchange and convey water

I. Letters of Project Support

IRWD will be the source and support for all non-Federal funding for the project. IRWD will fund the entire non-Federal share of the project costs from IRWD's Capital Improvement Budget.

J. Official Resolution

The official Resolution of IRWD Board of Directors, authorizing this application and committing IRWD to the financial and legal obligations associated with receipt of WaterSMART Grant financial assistance is included at the end of this application.

K. Project Budget

The proposed project budget is presented in this section.

K.1. Funding Plan and Letters of Commitment

The total estimated project budget for the Stockdale Recovery Facilities Project is $3,225,000.

Table 6 summarizes the non-Federal and other Federal funding sources for this Project. All non-Federal funding will be provided by IRWD.

Table 6: Summary of Non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities	
1. Irvine Ranch Water District	$2,225,000
Non-Federal Subtotal	*$2,225,000*
Other Federal Entities	
1. None	$0
Other Federal Entities Subtotal	*$0*
Requested Reclamation Funding	*$1,000,000*
Total Project Funding	*$3,225,000*

As a Funding Group II Project, the Federal funding request by year for the Stockdale Recovery Facilities Project is summarized in **Table 7**.

Table 7: Funding Group II Funding Request

Funding Group II Request			
	Year 1 (FY 2014)	Year 2 (FY 2015)	Year 3 (FY 2016)
Funding Requested	$100,000	$400,000	$500,000

K.2. Budget Proposal

The Stockdale Recovery Facilities Project budget proposal is presented in Reclamation's recommended format described in the WaterSMART Funding Opportunity Announcement. **Table 8** below presents the funding sources for the Project.

Table 8: Funding Sources

Funding Sources	Percent of Total Project Cost	Total Cost By Source
Recipient Funding	68.9%	$2,225,000
Reclamation Funding	31.1%	$1,000,000
Other Federal Funding	0.0%	$0
Totals	100.00%	$3,225,000

Table 9 on the following pages details the estimated budget cost for the Stockdale Recovery Facilities Project and provides the required breakdown.

Table 9: Stockdale Recovery Facilities Project Budget Proposal

Budget Item Description	Computations		Recipient Funding	Reclamation Funding	Total Cost
	Rate/Unit Price	Quantity			
DISTRICT Salaries and Wages					
Design Phase					
Administrator	$ 98	8	$ 541	$ 243	$ 784
Principal Engineer	$ 95	80	$ 5,243	$ 2,357	$ 7,600
Senior Engineer	$ 83	80	$ 4,581	$ 2,059	$ 6,640
Electrical Engineer	$ 85	40	$ 2,346	$ 1,054	$ 3,400
Associate Engineer	$ 52	40	$ 1,435	$ 645	$ 2,080
CADD Drafter	$ 35	40	$ 966	$ 434	$ 1,400
Clerical	$ 22	40	$ 607	$ 273	$ 880
Subtotal			$ 15,719	$ 7,065	$ 22,784
Fringe Benefits (See Note 1)			$ 29,866	$ 13,423	$ 43,290
Total Design			**$ 45,586**	**$ 20,488**	**$ 66,074**
Bid Phase					
Administrator	$ 98	6	$ 406	$ 182	$ 588
Principal Engineer	$ 95	20	$ 1,311	$ 589	$ 1,900
Senior Engineer	$ 83	40	$ 2,291	$ 1,029	$ 3,320
Clerical	$ 22	16	$ 243	$ 109	$ 352
Subtotal Bid Phase			$ 4,250	$ 1,910	$ 6,160
Fringe Benefits (See Note 1)			$ 8,075	$ 3,629	$ 11,704
Total Bid Phase			**$ 12,325**	**$ 5,539**	**$ 17,864**
Construction Phase					
Administrator	$ 98	24	$ 1,623	$ 729	$ 2,352
Principal Engineer	$ 95	120	$ 7,865	$ 3,535	$ 11,400
Senior Engineer	$ 83	120	$ 6,872	$ 3,088	$ 9,960
Electrical Engineer	$ 85	80	$ 4,691	$ 2,109	$ 6,800
Associate Engineer	$ 52	40	$ 1,435	$ 645	$ 2,080
CADD Drafter	$ 35	20	$ 483	$ 217	$ 700
Legal	$ 150	8	$ 828	$ 372	$ 1,200
Clerical	$ 22	20	$ 304	$ 136	$ 440
Subtotal			$ 24,100	$ 10,832	$ 34,932
Fringe Benefits (See Note 1)			$ 45,791	$ 20,580	$ 66,371
Total Construction			**$ 69,891**	**$ 31,412**	**$ 101,303**
Startup Phase					
Principal Engineer	$ 95	8	$ 524	$ 236	$ 760
Senior Engineer	$ 83	40	$ 2,291	$ 1,029	$ 3,320
Senior Operator	$ 60	32	$ 1,325	$ 595	$ 1,920
Electrical Engineer	$ 85	40	$ 2,346	$ 1,054	$ 3,400
Associate Engineer	$ 52	40	$ 1,435	$ 645	$ 2,080
Clerical	$ 22	8	$ 121	$ 55	$ 176
Subtotal Startup			$ 8,042	$ 3,614	$ 11,656
Fringe Benefits (See Note 1)			$ 15,279	$ 6,867	$ 22,146
Total Startup			**$ 23,321**	**$ 10,481**	**$ 33,802**
Reporting & Contract Closeout					
Administrator	$ 98	8	$ 541	$ 243	$ 784
Principal Engineer	$ 95	16	$ 1,049	$ 471	$ 1,520
Associate Engineer	$ 52	12	$ 431	$ 193	$ 624
Clerical	$ 22	20	$ 304	$ 136	$ 440
Subtotal Contract Closeout			$ 2,324	$ 1,044	$ 3,368
Fringe Benefits (See Note 1)			$ 4,415	$ 1,984	$ 6,399
Total Reporting & Contract Closeout			**$ 6,739**	**$ 3,029**	**$ 9,767**
Other Direct District Costs					
Travel					
Airfare	$ 800	0	$ -	$ -	$ -
Per Diem	$ 150	0	$ -	$ -	$ -
Mileage	$ 0.56	1200	$ 464	$ 208	$ 672
Supplies/Materials					
Office Supplies & Copies	$ 2,163	1	$ 1,492	$ 671	$ 2,163
Equipment (office)	$ 200	1	$ 138	$ 62	$ 200
Total Direct Costs			**$ 2,094**	**$ 941**	**$ 3,035**
TOTAL DISTRICT COSTS			**$ 159,955**	**$ 71,890**	**$ 231,845**

Table 9: Stockdale Recovery Facilities Project Budget Proposal (continued)

Budget Item Description	Computations		Recipient Funding	Reclamation Funding	Total Cost
	Rate/Unit Price	Quantity			
CONSULTANT Salaries And Wages					
Engineering Design Phase					
Principal Engineer	$ 85	40	$ 2,346	$ 1,054	$ 3,400
Project Manager	$ 70	100	$ 4,829	$ 2,171	$ 7,000
Project Engineer	$ 55	160	$ 6,071	$ 2,729	$ 8,800
Staff Engineer	$ 40	120	$ 3,312	$ 1,488	$ 4,800
Geotechnical Engineer	$ 40	120	$ 3,312	$ 1,488	$ 4,800
Electrical Engineer	$ 45	80	$ 2,484	$ 1,116	$ 3,600
Structural Engineer	$ 45	80	$ 2,484	$ 1,116	$ 3,600
CADD Drafter	$ 35	120	$ 2,898	$ 1,302	$ 4,200
Clerical	$ 25	80	$ 1,380	$ 620	$ 2,000
Subtotal Design Cost			$ 29,115	$ 13,085	$ 42,200
Fringe Benefits (See Note 2)			$ 64,052	$ 28,788	$ 92,840
Total Engineering Design Cost			**$ 93,167**	**$ 41,873**	**$ 135,040**
Bid Phase					
Principal Engineer	$ 70	36	$ 1,739	$ 781	$ 2,520
Project Manager	$ 70	24	$ 1,159	$ 521	$ 1,680
Clerical	$ 25	20	$ 345	$ 155	$ 500
Subtotal Bid Phase			$ 3,243	$ 1,457	$ 4,700
Fringe Benefits (See Note 2)			$ 7,134	$ 3,206	$ 10,340
Total Bid Phase			**$ 10,376**	**$ 4,664**	**$ 15,040**
Construction Management					
Construction Manager	$ 65	280	$ 12,557	$ 5,643	$ 18,200
Office Engineer	$ 55	80	$ 3,036	$ 1,364	$ 4,400
Constr. Inspector	$ 35	100	$ 2,415	$ 1,085	$ 3,500
Materials Testing	$ 35	20	$ 483	$ 217	$ 700
Survey	$ 35	40	$ 966	$ 434	$ 1,400
Project Manager	$ 70	40	$ 1,932	$ 868	$ 2,800
Project Engineer	$ 55	40	$ 1,518	$ 682	$ 2,200
CADD Drafter	$ 40	24	$ 662	$ 298	$ 960
Clerical	$ 25	200	$ 3,450	$ 1,550	$ 5,000
Total Unburdened CM Cost			$ 27,017	$ 12,143	$ 39,160
Fringe Benefits (See Note 3)			$ 33,772	$ 15,178	$ 48,950
Total Construction Management Cost			**$ 60,789**	**$ 27,321**	**$ 88,110**
Reporting & Contract Closeout					
Project Manager	$ 70	24	$ 1,159	$ 521	$ 1,680
Construction Manager	$ 65	36	$ 1,614	$ 726	$ 2,340
CADD Drafter	$ 40	24	$ 662	$ 298	$ 960
Clerical	$ 25	16	$ 276	$ 124	$ 400
Subtotal Contract Closeout			$ 3,712	$ 1,668	$ 5,380
Fringe Benefits (See Note 3)			$ 4,640	$ 2,085	$ 6,725
Total Reporting & Contract Closeout			**$ 8,352**	**$ 3,753**	**$ 12,105**
Other Direct Costs					
Travel					
Airfare	$ 800	0	$ -	$ -	$ -
Per Diem	$ 150	0	$ -	$ -	$ -
Mileage	$ 0.56	1000	$ 386	$ 174	$ 560
Supplies/Materials					
Office Supplies & Copies	$ 14,750	1	$ 10,176	$ 4,574	$ 14,750
Equipment (office)	$ 4,800	1	$ 3,312	$ 1,488	$ 4,800
Total Direct Costs			**$ 13,874**	**$ 6,236**	**$ 20,110**
Environmental and Compliance					
Principal Environmental Investigator	$ 80	80	$ 4,416	$ 1,984	$ 6,400
Environmental Investigator	$ 60	100	$ 4,140	$ 1,860	$ 6,000
Permits Development	$ 45	40	$ 1,242	$ 558	$ 1,800
Clerical	$ 30	40	$ 828	$ 372	$ 1,200
Subtotal Environmental Costs			$ 10,625	$ 4,775	$ 15,400
Fringe Benefits (See Note 2)			$ 23,375	$ 10,505	$ 33,880
Total Direct Costs Environmental	$ 3,000	1	$ 2,070	$ 930	$ 3,000
Total Environmental Costs			**$ 36,069**	**$ 16,211**	**$ 52,280**
TOTAL CONSULTANT COSTS			**$ 222,628**	**$ 100,057**	**$ 322,685**

Table 9: Stockdale Recovery Facilities Project Budget Proposal (continued)

Budget Item Description	Computations		Recipient Funding	Reclamation Funding	Total Cost
	Rate/Unit Price	Quantity			
CONSTRUCTION COSTS					
Mobilization/Demobilization	$ 155,000	1	$ 106,938	$ 48,062	$ 155,000
Bonding and Insurance	$ 95,000	1	$ 65,543	$ 29,457	$ 95,000
Sitework	$ 40,000	1	$ 27,597	$ 12,403	$ 40,000
Well Drilling	$ 75,000	1	$ 51,744	$ 23,256	$ 75,000
Extraction Well Facilities	$ 580,000	3	$ 1,200,465	$ 539,535	$ 1,740,000
-inch Piping to CA Aqueduct	$ 55,500	1	$ 38,291	$ 17,209	$ 55,500
Structural (Recovery Well Enclosures)	$ 63,000	1	$ 43,465	$ 19,535	$ 63,000
Solar System Installation	$ 33,000	1	$ 22,767	$ 10,233	$ 33,000
Security System	$ 75,000	1	$ 51,744	$ 23,256	$ 75,000
Electrical	$ 55,200	1	$ 38,084	$ 17,116	$ 55,200
Instrumentation	$ 41,000	1	$ 28,287	$ 12,713	$ 41,000
Subtotal w/o contingency			$ 1,674,925	$ 752,775	$ 2,427,700
Contingency - 10%	$ 242,770	1	$ 167,492	$ 75,278	$ 242,770
TOTAL CONSTRUCTION COST			**$ 1,842,417**	**$ 828,053**	**$ 2,670,470**
Total Direct Costs			**$ 2,225,000**	**$ 1,000,000**	**$ 3,225,000**
Indirect Costs - 0%			$ -	$ -	$ -
Total Project Costs			**$ 2,225,000**	**$ 1,000,000**	**$ 3,225,000**

NOTES:

1. Fringe Benefits for District Labor estimated at: 190%
2. Fringe Benefits for Design Consultant Labor estimated at: 220%
3. Fringe Benefits for Construction Management estimated at: 125%
4. Estimated construction costs are based on 2013 costs, escalated to mid-point of construction. All salaries are estimated as of January 2013.

K.3. Budget Narrative

Estimated costs for the IRWD Stockdale Recovery Facilities Project are presented earlier in this section using the Reclamation's template format as **Table 9**. The cost estimate shows the breakdown of activities, cost categories, unit prices and quantities. The estimated project budget also shows the split between the Federal share of the costs and the non-Federal share of the costs for each item. The form of the budget narrative presents the following information.

1. *Salaries and Wages*. Labor hours, salaries and wages are itemized by specific task. The labor rates and estimated hours are shown for each task. The Program Manager for the Stockdale Recovery Facilities Project is:
   a. Program Manager: Kellie Welch
   b. Title: Project Manager

2. *Fringe Benefits*. Fringe benefits include paid vacation, holidays, sick leave, plus health insurance and retirement plan benefits. Fringe benefits are estimated as percentage of the direct labor cost. Fringe benefits are applied to IRWD staff and consultant costs, not to the project construction cost. Shown in the notes at the bottom of the Budget Proposal in Table 3, the percentages used for fringe benefits vary for IRWD and consultant staff.

3. *Travel*. Only local travel will be needed for this project. Local travel is estimated based on mileage at standard rates.

4. *Equipment*. The equipment cost makes up the majority of the budget for this project. The total equipment cost includes sales tax.

5. *Materials and Supplies*. Office supplies are included in the budget. Typical materials and supplies will include copies and printing.

6. *Contractual*. Work that will be accomplished by consultants and contractors is listed separately with a breakdown. IRWD plans to use consultants for the environmental compliance documentation, engineering design, and engineering during the construction phase (shop drawing submittal reviews), and construction management. IRWD will advertise for competitive bids for the construction contracts from outside contractors.

7. *Environmental and Regulatory Compliance Costs*. The requirement of the environmental documentation for compliance with California Environmental Quality Act (CEQA) for the Stockdale Recovery Facilities Project is currently in progress. A Notice of Preparation of an Environmental Impact Report (EIR) was filed by IRWD on

September 24, 2013. It is anticipated that the Draft EIR for the Stockdale Recovery Facilities Project will be released for public review in February 2014. National Environmental Policy Act (NEPA) documentation to comply with federal grant requirements will proceed in May-June 2014 to complete the environmental compliance.

The overall cost for environmental compliance is approximately 1.6% of the total project cost for the Stockdale Recovery Facilities Project. Environmental and Regulatory Compliance Costs are included in Line 11, Miscellaneous, on Budget Form 424C.

8. *Reporting*. Administration of the Stockdale Recovery Facilities Project, including information on budgeting, expenditures, schedule, progress reporting will comply with Reclamation's requirements.

9. *Other*. Other costs outside the categories listed above include a 10% allowance for contingencies for the construction costs.

10. *Indirect Costs*. There are no indirect costs associated with this project.

11. *Total Cost*. The total cost of the project is shown in the budget along with the proposed Federal and non-Federal cost-share amounts.

K.4. Budget Form

Form SF-424C Budget Information – Construction Programs follows on the next page.

RESOLUTION NO. 2014 - 1

RESOLUTION OF THE BOARD OF DIRECTORS OF
IRVINE RANCH WATER DISTRICT AUTHORIZING SUBMISSION OF
A GRANT APPLICATION FOR THE IRVINE LAKE PIPELINE CONVERSION PROJECT
TO THE DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION, POLICY
AND ADMINISTRATION

WHEREAS the Department of the Interior, Bureau of Reclamation, Policy and Administration (Reclamation) has released a Funding Opportunity Announcement to provide federal grant funding under the WaterSMART: Water and Energy Efficiency Grants for Fiscal Year (FY) 2014; and

WHEREAS Reclamation is seeking applications from eligible water or power delivery agencies to cost share 50 percent or more with Reclamation on projects that save water, improve energy efficiency, provide benefit to endangered species, and facilitate water markets or prevent water related crisis or conflict; and

WHEREAS the Irvine Ranch Water District is eligible to submit an application for grant funding up to $1 million for its Irvine Lake Pipeline Conversion project with a cost share of 50 percent or more of the total project costs.

NOW, THEREFORE, the Board of Directors of IRVINE RANCH WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE and ORDER as follows:

Section 1. The General Manager of the Irvine Ranch Water District or his/her designee is hereby authorized to submit an application to Reclamation for grant funding up to $1 million for the Irvine Lake Pipeline Conversion project.

Section 2. The Board of Directors of the Irvine Ranch Water District has reviewed and supports the application for a grant from Reclamation for the construction of Irvine Lake Pipeline Conversion project facilities.

Section 3. The Irvine Ranch Water District hereby agrees and further confirms that it has the capability to provide its cost share funding (50 percent or more of the total project costs) as specified in the application's project funding plan.

Section 4. The General Manager or his/her designee is hereby authorized to enter into a cooperative agreement and any amendments thereto with Reclamation on behalf of the Irvine Ranch Water District.

Section 5. The General Manager or his/her designee is hereby authorized to work with Reclamation to meet the established deadlines for entering into a cooperative agreement.

Section 6. That the Secretary is hereby authorized to certify a copy of this resolution to accompany the grant application.

ADOPTED, SIGNED AND APPROVED this 13th day of January, 2014.

President, IRVINE RANCH WATER DISTRICT
and the Board of Directors there of

Secretary, IRVINE RANCH WATER DISTRICT
and the Board of Directors there of

APPROVED AS TO FORM:
BOWIE, ARNESON, WILES & GIANNONE
Legal Counsel—IRWD

By: _____

STATE OF CALIFORNIA)
) SS.
COUNTY OF ORANGE)

I, Nancy Savedra, Assistant Secretary of the Board of Directors of Irvine Ranch Water District, do hereby certify that the foregoing Resolution was duly adopted by the Board of Directors of said District at a regular board meeting of said Board held on the 13th day of January 2014, and that it was so adopted by the following vote:

AYES:	DIRECTORS	LaMar, Matheis, Reinhart, Swan and Withers
NOES:	DIRECTORS	None
ABSTAIN:	DIRECTORS	None
ABSENT:	DIRECTORS	None

(SEAL)

Assistant Secretary of IRVINE RANCH WATER DISTRICT
and of the Board of Directors thereof

STATE OF CALIFORNIA)
) SS.
COUNTY OF ORANGE)

I, Nancy Savedra, Assistant Secretary of the Board of Directors of Irvine Ranch Water District, do hereby certify that the above and foregoing is a full, true and correct copy of Resolution No. 2014-1 of said Board, and that the same has not been amended or repealed.

Dated: 1/14/14

Assistant Secretary of IRVINE RANCH WATER DISTRICT
and of the Board of Directors thereof

(SEAL)