Grassland Water District
Incremental Level 4
Groundwater Project Renewal

Initial Study and
Proposed Negative Declaration

December 21, 2020

Proposed Negative Declaration

Pursuant to Public Resources Code Section 21000 et seq., the Grassland Water District prepared a negative declaration for the following project.

1. Project Name: Grassland Water District Incremental Level 4 Groundwater Project Renewal

2. Location and Description: Merced County

The Grassland Water District Incremental Level 4 Groundwater Project Renewal (Project) will allow the Grassland Water District, located in western Merced County, to acquire up to 29,000 acre-feet per year of local groundwater supplies and/or exchange a portion of its Level 2 surface water for such groundwater supplies, to assist the Bureau of Reclamation in meeting its water supply obligations under the Central Valley Project Improvement Act, Title 34, Public Law 102-575 ("CVPIA"). Under CVPIA Section 3406(d), the Secretary of the Interior must provide firm water supplies of suitable quality to maintain and improve wetland habitat areas in the Central Valley of California. The Grassland Water District supplies water to the Grassland Resource Conservation District (GRCD), one of the wetland areas in the San Joaquin Valley that is a recipient of CVPIA water supplies.

The Project allows for the continued implementation of water acquisition and exchange agreements between the United States Bureau of Reclamation and the Grassland Water District or its partner districts, and it allows for water acquisition agreements between the Grassland Water District and private landowners for the acquisition of groundwater supplies for use within the GRCD.

3. Project Sponsor: Grassland Water District
200 W. Willmott Avenue
Los Banos, CA 93635
(209) 826-5188

4. Finding: Based upon the attached Initial Study and after receiving public comments and holding a public hearing, it is my judgment that:

☐ I find that the Project COULD NOT have a significant effect on the environment.

_____ Date: _____

Ricardo Ortega, General Manager
Grassland Water District

5. **Mitigation Measures**: No potentially significant adverse impacts were identified; therefore, no mitigation measures are required.

Preparation and Public Review:

The Grassland Water District prepared the negative declaration. Copies can be obtained at the following address:

Grassland Water District
200 W. Willmott Avenue
Los Banos, California 93635
Phone: (209) 826-5188
Fax: (209) 826-4984
Email: rortega@gwdwater.org

There was a 20-day public review period from December 21 to January 11, 2020, and a public hearing was held on January 12, 2021.

Initial Study/Negative Declaration

Pursuant to the California Public Resources Code, Section 21000 et seq., a negative declaration has been prepared for the following project.

Project Name:	**Grassland Water District Incremental Level 4 Groundwater Project Renewal (Project)**
Project Proponent:	**Grassland Water District** **200 W. Willmott Avenue** **Los Banos, CA 93635** **(209) 826-5188**
Contact Person:	**Ricardo Ortega, General Manager**
Date Posted:	**December 21, 2020**
Comment Period End:	**January 11, 2020**

The Grassland Water District (GWD or District) has evaluated the proposed Project in conformance with the California Environmental Quality Act to determine whether the Project poses any potentially significant impacts on the environment. As described below, GWD has determined that the Project will have no significant effect on the environment.

I. NEGATIVE DECLARATION

1. Project Location

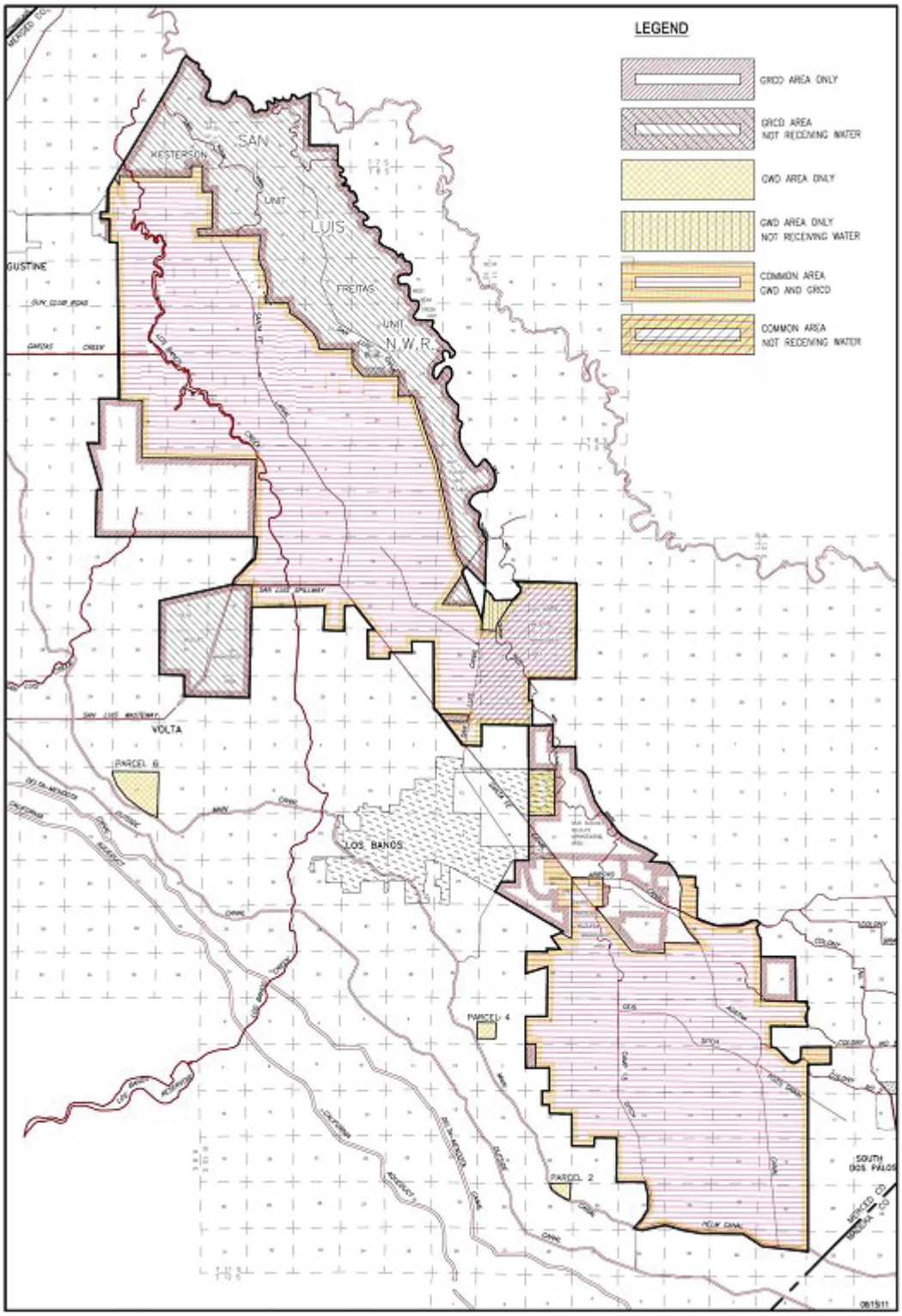
The Project area consists of lands within or near the Grassland Resource Conservation District (GRCD) and the GWD, both located in western Merced County as shown on Figure 1.

2. Need for the Project

The objectives for the Project are to obtain adequate water supplies in order to:

- Provide for a diversity of wetland habitats for an abundance of migratory birds, particularly waterfowl and water birds.
- Provide natural habitat management to restore and perpetuate endangered, threatened and proposed-for-listing species, as well as species of special concern.
- Preserve natural diversity and abundance of flora and fauna.
- Provide high quality wildlife dependent recreation, education and research.
- Minimize crop depredation on private lands by providing sufficient alternative food sources for waterfowl on refuge property.

Figure 1 – Project Location



3. Project Description and Purpose

A. Background

Groundwater Management Planning

The boundaries of the GWD and GRCD overlap and are both located within the Delta-Mendota Groundwater Subbasin of the larger San Joaquin Valley Groundwater Basin. The subbasin aquifer contains three zones: an unconfined shallow (perched) zone that extends from the surface to a depth of approximately 25 feet, an intermediate zone that extends beneath the shallow zone to a layer of Corcoran Clay that lies at a depth of approximately 100 to 500 feet beneath the surface, and a lower confined zone beneath the Corcoran Clay.

The GWD Board of Directors adopted a Groundwater Management Plan (GWMP) in September 2011. The GWMP is included as Appendix A. The GWD Board of Directors and the GRCD Board of Directors formed the Grassland Groundwater Sustainability Agency (Grassland GSA) in 2018, pursuant to the Sustainable Groundwater Management Act (SGMA), Water Code section 10720 *et seq*. The Grassland GSA adopted a Groundwater Sustainability Plan (GSP) in December 2019, which is under review by the California Department of Water Resources (DWR). The Grassland GSP can be found at: https://sgma.water.ca.gov/portal/gsp/preview/38, and is incorporated by reference herein as Appendix B. The Grassland GSA acts as the groundwater management agency for the Grassland Water District, the Grassland Resource Conservation District, adjacent state and federal wildlife refuges, and private lands that will provide groundwater under this proposed Project.

The Grassland GWMP covered an area of approximately 75,000 acres that is managed for migratory waterfowl habitat. The Grassland GSP covers a larger area of approximately 104,000 acres, including the migratory waterfowl habitat covered by the GWMP, adjacent state and federal wildlife refuges, and surrounding agricultural lands that supply groundwater for wildlife habitat use. There are no urban water users or residential communities within the Project area. The relatively small number of groundwater wells located within and adjacent to the District are used for maintaining wildlife habitat and for agricultural uses. Land surrounding the GWD and GRCD is within the same groundwater subbasin, and is primarily located within the Del Puerto Water District, San Luis Water District, Central California Irrigation District (CCID), and San Luis Canal Company, with some neighboring properties not within the boundaries of any district.

In an average year, the District applies approximately 190,000 acre-feet (AF) of surface water for wildlife habitat, including the state and federal refuges and private wetlands within its boundaries. Surface water is conveyed through unlined channels, and is typically ponded in managed wetlands within the District for six to nine months a year. As analyzed and described in the Grassland GWMP and the Grassland GSP, percolation to the intermediate groundwater zone through canal seepage is approximately 18%. Additionally, as analyzed and described in the

Grassland GSP and reflected in the GSP Water Budget, percolation to the intermediate groundwater zone through pond seepage is approximately 8.6%. In total, the District provides groundwater recharge through deep percolation to the intermediate zone at an average rate of more than 50,000 acre-feet (AF) per year.

The District's surface water is supplied by the United States Bureau of Reclamation (Reclamation) as mandated by the Central Valley Project Improvement Act, Title 34, Public Law 102-575 (CVPIA). The total average annual surface water volume provided to the District and the other CVPIA-identified refuges in the immediate vicinity of the District is approximately 250,000 AF. Combined with the 840,000 AF of annual water supply provided to the neighboring San Joaquin River Exchange Contractors, the total volume of imported surface water delivered to the area inside and in the immediate vicinity of the District is 1.1 million AF per year.

This large and reliable volume of imported surface water contributes to the long-term stability of groundwater levels in this area of the subbasin. Long-term groundwater level monitoring by the Central California Irrigation District, as presented in the recently adopted San Joaquin River Exchange Contractors Groundwater Sustainability Plan, verifies that groundwater levels in the proposed Project area continue to be stable and not in a state of overdraft. The Grassland GSP also incorporates the results of groundwater-level monitoring performed by the District since 2008, and concludes that groundwater use remains stable and sustainable within the Project area.

The Sustainable Groundwater Management Act requires that an annual report be submitted to the Department of Water Resources each year. The Grassland GSA and other GSAs within the Delta-Mendota Subbasin submitted an annual report to DWR in April 2020, which is available at: https://sgma.water.ca.gov/portal/gspar/preview/8.

Incremental Level 4 Groundwater Project History

The CVPIA directs Reclamation to acquire an increment of water from diversified and voluntary sources for delivery to wetland habitat areas, including the District. This water supply is referred to as Incremental Level 4 refuge water, and it represents the additional increment of water required for optimal wetland habitat development.

In coordination with Reclamation, the District began implementation of its Incremental Level 4 Groundwater Acquisition Pilot Project in 2008. The pilot project began with four existing groundwater wells that were expected to produce up to 10,000 AF of groundwater annually. The District's 2011 GWMP stated that "although a total acre-foot goal has yet to be determined, the District intends to expand groundwater usage in both new and refurbished existing wells."

To increase groundwater production and reliability for Incremental Level 4 purposes, the District and Reclamation added 19 additional groundwater wells to the pilot project between 2008 and 2015. Reclamation also installed two groundwater production wells at the Volta State Wildlife Area, located within the GRCD. The District and Reclamation secured various funding sources to help increase water supply reliability within the District and within the subbasin.

The pilot project was successful in supplying a sustainable volume of groundwater for wetland habitat use. In 2016, GWD adopted an Initial Study and Negative Declaration for the continued acquisition of up to 29,000 AF of groundwater annually from 2016-2021. Several additional groundwater wells were added during that five-year program. Under the program, Reclamation directly acquired groundwater and also partnered with several nearby agricultural water districts, including Del Puerto Water District and San Luis Water District, to finance groundwater acquisitions through water exchanges.

As shown in Table 1 and Figure 2, the current groundwater program pumps water for habitat purposes from up to 35 groundwater wells under five groundwater funding agreements, with a total maximum allowable volume of groundwater developed under the five agreements of 29,000 AF. Four of the agreements allow for the direct acquisition of groundwater from the well owner, or the exchange of a portion of the District's Level 2 water supply for a greater volume of groundwater delivered to the District by the well owner. All 35 wells are located on public or privately owned lands, within and adjacent to the District. Not all of the 35 wells are operational at any given time and pumping does not occur in every year.

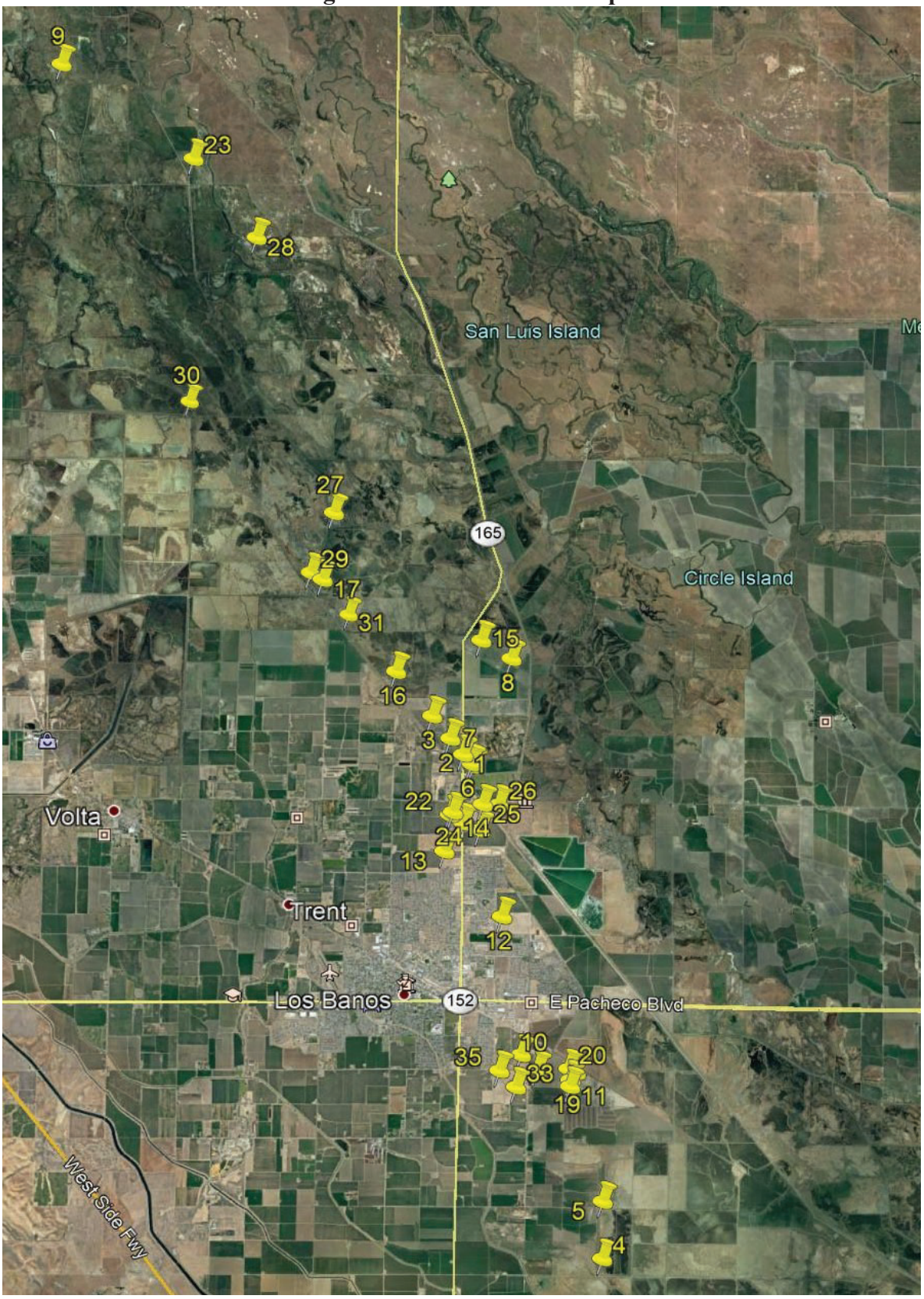
Table 1 - Well Information

	Well Production		Discharge Location	GPS Coordinates
Well	CFS	AF Per Day		
1	5.0	10.0	Santa Fe Canal	37°06'21.45"N 120°50'9.74W
2	1.1	2.2	Santa Fe Canal	37° 06'34.71"N 120°50'21.67"W
3	2.2	4.4	Santa Fe Canal	37° 06'51.37"N 120°50'38.43"W
4	4.0	7.9	Almond Drive/Habitat Direct	36°59'53.48"N 120°48'0.04"W
5	1.0	2.0	Almond Drive/Habitat Direct	37° 00'37.83"N 120°47'59.91"W
6	1.0	2.0	Santa Fe Canal	37°06'14.74" N 120°50'01.76"W
7	1.0	2.0	Santa Fe Canal	37°06'12.47"N 120°50'00.03"W
8	4.5	8.9	Standard Ditch	37°07'35.69"N 120°49'24.53"W
9	4.0	7.9	Habitat Direct	37°15'13.34"N 120°56'24.56"W
10	2.6	5.1	San Luis Canal	37° 02'18.98"N 120°49'0.68"W

11	8.2	16.3	San Luis Canal	37°02’06.28”N 120°48’29.93”W
12	5.5	10.9	San Luis Canal	37°04’17.07”N 120°49’33.73”W
13	5.0	10.0	San Luis Canal	37°05’07.36”N 120°50’26.67”W
14	4.2	8.3	San Luis Canal	37°05”23.76”N 120°49’53.90”W
15	4.5	8.9	Standard Ditch	37°07’50.02”N 120°49’52.96”W
16	3.4	6.7	Santa Fe Canal/Habitat Direct	37°07’25.83”N 120°51’11.98”W
17	3.6	7.1	Santa Fe Canal/Habitat Direct	37°08’36.61”N 120°52’20.30”W
18	3.6	7.1	Santa Fe Canal	37°06’12.56”N 120°49’59.40”W
19	4.0	7.9	exchang Canal	37°02’11.68”N 120°48’29.51”W
20	5.0	10.0	San Luis Canal	37°02’18.94”N 120°48’32.36”W
21	2.2	4.4	San Luis Canal	37°05’29.11”N 120°50’8.89”W
22	4.5	8.8	San Luis Canal	37° 5'35.46"N 120°50'21.89"W
23	3.0	5.9	Santa Fe Canal	37°14’0.59”N 120°54’21.10”W
24	4.5	8.9	San Luis Canal	37° 5'37.60"N 120°50'19.04"W
25	3.0	5.9	San Luis Canal	37° 5'43.65"N 120°49'51.20"W
26	3.0	5.9	San Luis Canal	37° 5'43.38"N 120°49'36.30"W
27	4.0	7.9	Santa Fe Canal	37° 9'27.99"N 120°52'9.98"W
28	4.0*	7.9	Mud Slough/Habitat Direct	37°12'59.83"N 120°53'22.23"W
29	6.5	13	X-Channel	37° 8'41.92"N 120°52'31.51"W
30	7	14	Mosquito	37°10'54.77"N 120°54'24.08"W
31	8.8	17	Santa Fe Canal	37° 8'10.72"N 120°51'55.81"W
32	5.6	11.0	San Luis Canal	37° 2'17.14"N 120°48'24.68"W
33	2.2	4.0	San Luis Canal	37° 2'5.98"N 120°49'20.33"W
34	3.5	7.0	San Luis Canal	37° 2'30.89"N 120°49'15.64"W
35	2.6	5.3	San Luis Canal	37° 2'18.62"N 120°49'35.78"W

***Estimated**

Figure 2 – Well Location Map



Figures 2a-2o
Wellhead, Discharge, Upstream and Downstream Sampling Location Maps
("W" = Wellhead, "D" = Discharge, "US" = Upstream, "DS" = Downstream)

Figure 2a: W1 and W2; D1 and D2; US/DS Sampling W1, 2, 3, 6, 7, 18

Figure 2b: W3; D3; US/DS Sampling W2, 3, 16

Figure 2c: W4 and W5; D4 and D5; US/DS Sampling W4 and W5

Figure 2d: W6, W7, W18; D6, D7, D18; US/DS Sampling W6, 7, 18

Figure 2e: W8 and W15; D8 and D15; US/DS Sampling W8 and W15

Figure 2f: W9, D9 (habitat direct)

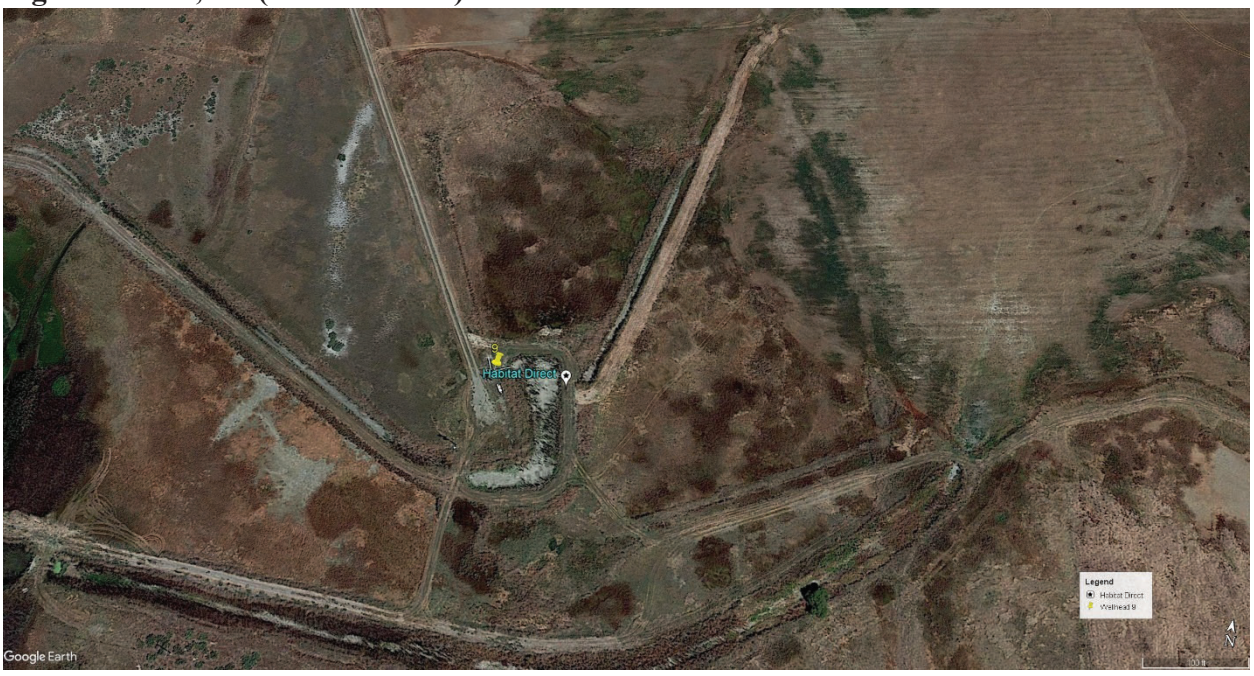


Figure 2g: W10, 11, 19, 20, 32-35; D10, 11, 19, 20, 32-35; US/DS Sampling W10, 11, 19, 20, 32-35

Figure 2h: W12; D12; US/DS Sampling W12

Figure 2i: W13, 14, 21, 22, 24-26; D13, 14, 21, 22, 24-26; US/DS Sampling W13, 14, 21, 22, 24-26

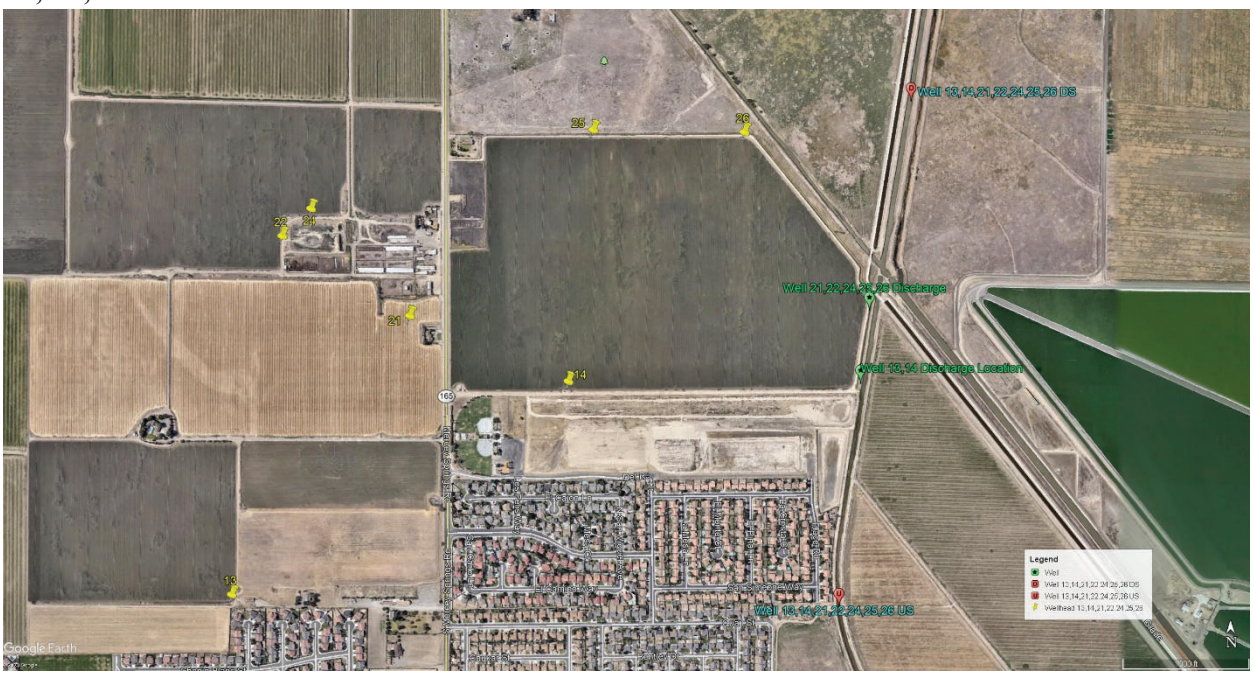


Figure 2j: W16; D16; US/DS Sampling W16; US Sampling W31; DS Sampling W3

Figure 2k: W17, 27, 29; D17, 29; US Sampling W17, 29, 27; DS Sampling W17, 29, 31

Figure 2l: W23; D23; US/DS Sampling W23

Figure 2m: W28; D28 (habitat direct)

Figure 2n: W30; D30, US/DS Sampling W30

Figure 2o: W31; D31; US/DS Sampling W31 and W17; DS Sampling W16 and W31

B. Proposed Project

By design, the current groundwater acquisition and exchange agreements for the existing groundwater program are set to expire on February 28, 2021. The District has worked with Reclamation to review historical trends of the data collected as part of the existing program, and based on the data collected, the District intends to implement the proposed Project to address the expected shortage of Incremental Level 4 water within the District during the next five years, from 2021-2026. The Project allows for the implementation of renewed water acquisition and exchange agreements among Reclamation, the District, and partner districts (including San Luis Water District and Del Puerto Water District) for the wells listed in Table 1 and shown in Figure 2, and allows for water acquisition agreements between the Grassland Water District and private landowners for the acquisition of groundwater supplies for use within the GRCD.

Based on lessons learned during the 2008-2015 pilot project and the 2016-2021 groundwater program, the District's proposed Project will also allow for flexibility in adding and removing wells on an as-needed basis to achieve the objectives of the Project based on the economic considerations of each well owner, the performance of each well, available funding sources, and monitoring results. Some groundwater acquisitions may be directly funded by Reclamation when funding allows, or funded by other districts, as necessary, in exchange for a smaller volume of the District's surface water supplies.

The proposed Project will not increase the existing maximum volume of 29,000 AF per year of groundwater developed from wells within the program, which is less than the estimated annual contribution to groundwater recharge from the percolation of surface water in the District's conveyance system and managed wetland ponds. The volume of groundwater extracted and used for Project purposes will be far less than the amount of annual recharge attributable to the District's habitat management activities. All groundwater is delivered and utilized for wetland habitat purposes within the same subbasin (Delta-Mendota Subbasin), and a portion of the delivered groundwater is returned to the groundwater basin through deep percolation. The proposed Project is consistent with the adopted Groundwater Sustainability Plan for the Grassland area, which requires routine monitoring and reporting to achieve designated sustainability goals.

The proposed Project will allow the District to acquire groundwater supplies to assist Reclamation in meeting its water supply obligations under CVPIA. Under Section 3406(d) of the CVPIA, the Secretary of the Interior must provide firm water supplies of suitable quality to maintain and improve wetland habitat areas in the Central Valley of California. Under the CVPIA, such "Level 4" water supplies are required to meet the needs of authorized wetland areas in cooperation with the State of California, the Central Valley Habitat Joint Venture and other interests. Pursuant to the CVPIA, Incremental Level 4 water supplies must be acquired from voluntary sellers.

Environmental documentation was previously prepared and addressed the overall impacts of acquiring full Level 4 water supplies for the refuges, the conveyance of water to the refuges, and

use of water on the refuges. The overall impacts of implementing the CVPIA, including providing Incremental Level 4 water supplies to the refuges, was addressed in the 1999 U.S. Fish and Wildlife Service, CVPIA, Final Programmatic Environmental Impact Statement.

The general parameters of the proposed Project are identified in Table 2.

Table 2 - Summary of Proposed Project Parameters

Purpose	Provide a portion of the Incremental Level 4 supplies for use in wetland habitat areas served by GWD.
Volume of water	Up to 29,000 AF per water year.
Project duration	5 years beginning on March 1, 2021.
Location of wells	All currently identified wells are in the vicinity of GWD and GRCD, within the Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin. Individual well location coordinates are identified in Table 1 and locations are shown on Figure 2.
Type of wells	Existing/already constructed.
Pump power source	Electricity.
Well production	See Table 1 – Well Information.
Groundwater quality	See Table 3 – Latest Wellhead Water Quality.
Conveyance route(s)	See Table 1 and Figure 2 – Well Locations.
Construction required	No major construction planned or required.
Monitoring	Groundwater volume, groundwater quality, and surface water quality in GWD's conveyance system, groundwater levels and land subsidence monitoring. See Monitoring Policy section and Appendix F.

Monitoring Policy

The District implements a Monitoring Plan for each of the groundwater agreements in its current groundwater program. The terms of the plans are substantially the same and have been refined over time. The District's Monitoring Policy, described herein, is designed to meet the groundwater management and monitoring objectives contained in the Grassland GSP and the

District's GWMP, and is consistent with the water quality objectives in the District's current groundwater agreements. The Policy covers four areas: groundwater quality, water quality in surface waters that receive and convey groundwater within the District, groundwater levels, and land subsidence.

Groundwater Quality

The District regularly monitors for three water quality constituents: total dissolved solids (TDS), selenium (Se), and boron (B). The District uses instantaneous monitoring techniques through a grab sample analysis, and all grab samples are promptly and independently analyzed by a federally approved laboratory. The District also regularly monitors water temperature and pH.

For TDS, the District's Board of Directors adopted a water quality objective of 2,500 parts per million (or mg/L) for all receiving waters. The Project will continue to monitor for TDS at each wellhead on a weekly basis through the use of electro-conductivity (EC) measurements that have been correlated to TDS values. For selenium, the District and Reclamation have agreed on a water quality objective of 5 parts per billion (or μg/L) at each wellhead. The project will continue to monitor for selenium at all wells at the beginning of each pumping period and then monthly at wells containing selenium concentrations above 2 μg/L. The District will not accept water from a groundwater well if it exceeds the wellhead water quality objective of 2,500 mg/L for TDS or 5 μg/L for selenium.

Boron is primarily a constituent of concern in the lower San Joaquin River, where objectives (maximum of 5.8 mg/l) have been set by the Central Valley Regional Water Quality Control Board (RWQCB) as protective measures for the growing of row crops and trees. Even though there is no adopted water quality objective for boron within the District, GWD and Reclamation have agreed to establish an objective of 4 mg/L for boron in the receiving channel downstream of the well discharge. Table 3 summarizes the latest available water quality monitoring results at each wellhead that are a part of a current agreement with Reclamation. A summary of the latest wellhead water quality data and the water quality analytical reports are included as Appendix C. The most recent annual report for the Incremental Level 4 Groundwater Project is included as Appendix D. The annual report presents water quality and groundwater level data and trend analysis for the wells included in the Project.

Table 3 – Latest Wellhead Water Quality

Well	Analysis Date	TDS (mg/L)	Se (µg/L)	B (mg/L)
1	12/17/2015	1,910	<0.40	1.9
2	9/23/2020	2,800	0.410	2.6
3	9/23/2020	1,980	<0.40	.18
4	9/23/2020	1,830	4.65	1.80
5	8/5/2020	1,330	2.94	0.84
6	12/17/2015	632	<0.40	0.71

7	1/27/2016	1,070	<0.40	1.4
8	1/27/2016	467	<0.40	0.54
9	4/28/2020	1,440	<0.40	3.0
10	9/28/2018	706	<0.40	0.63
11	9/23/2020	590	2.40	0.95
12	12/27/2016	1,600	2.98	3.4
13	9/16/2015	1,730	3.57	2.2
14	5/11/2016	2,060	0.872	1.50
15	9/19/2018	1,560	<0.40	3.8
16	9/23/2020	811	<0.40	.85
17	5/13/2019	1,670	<0.40	6.0
18	8/21/2018	748	<0.40	1.3
19	9/23/2020	720	2.84	0.95
20	9/28/2020	1,070	4.57	0.82
21	6/10/2020	1,960	2.99	2.5
22	4/28/2020	1,860	1.74	4.4
23	7/18/2018	1,760	<0.40	3.0
24*	10/21/2020		<0.40	
25	9/20/2016	1,000	0.625	1.3
26	6/14/2016	1,580	<0.40	1.3
27	5/13/2019	3,020	<0.40	6.6
28**				
29	4/28/2020	1,780	<0.40	1.9
30	4/28/2020	1,550	<0.40	3.2
31	4/28/2020	1,100	<0.40	1.1
32	9/23/2020	1,410	3.53	1.1
33	8/26/2020	993	0.496	1.2
34	8/26/2020	260	0.453	1.1
35	8/26/2020	1,010	<0.40	1.1

*Awaiting results for remaining constituents.
**Newly added well, not yet sampled.

Surface Water Quality

Current groundwater monitoring plans require the District to monitor for TDS, selenium, and boron in the District's surface water channels. For selenium, the RWQCB has established a maximum surface water concentration of 2 μg/L. For TDS, the District's Board of Directors has adopted a surface water quality objective of 2,500 mg/L. As previously discussed, even though there is no adopted water quality objective for boron within the District, GWD and Reclamation

have agreed to establish an objective of 4 mg/L for boron in the receiving channel downstream of the well discharge. If any water quality objectives are exceeded, the District modifies deliveries or curtails groundwater pumping until water quality objectives are again met.

Historical trend analyses show that the groundwater wells within the District and on nearby lands produce water of sufficient quality for wetland habitat. The District's Monitoring Policy is very effective at detecting any water quality objective exceedances promptly, and managing groundwater supplies accordingly. In some instances the District has not utilized wells because the groundwater quality does not meet the wellhead objectives. Overall, the District's groundwater management activities have prevented the degradation of water quality within the District and therefore only a minor modification of the monitoring of surface water quality is proposed as part of the Project.

The proposed Project surface water quality sampling and analysis for selenium will be conducted monthly downstream of well discharges containing selenium concentrations greater than 2 μg/L to ensure compliance with surface water quality objectives set by the RWQCB. If a surface water quality objective is exceeded, groundwater pumping will be modified or curtailed or additional surface water will be routed into the receiving conveyance channel until surface water quality objectives are met. Weekly monitoring of the EC, pH and temperature upstream and downstream of each well discharge will continue. The water quality monitoring and reporting for the proposed Project is described in the Project Monitoring Plan included as Appendix F.

Groundwater Levels

It is the District's policy that each well discharge in its groundwater program is equipped with a meter that can measure the instantaneous flow rate and volume of groundwater pumped, in cubic feet per second and total acre-feet, respectively. The District also uses an electronic water level meter to measure depth to groundwater in each well before pumping operations begin (preproduction or ambient) and after 24 hours after pump shutoff (post-production or recovery).

Historical trend analyses show the District's groundwater program has not had a negative impact on groundwater levels in the vicinity of the wells or in the groundwater subbasin. Figures 3 and 4 summarize the results of the groundwater monitoring for the wells included in the five groundwater acquisition/exchange agreements that are currently being implemented and are proposed for renewal under this Project, with the exception of Well 28, which has not been operated for project purposes to date. Most of the wells that are included in the Project have more than five years of data.

As shown in Figures 3A and 3B, the difference in the depth to groundwater level after pumping ceases (post pumping) as compared to the pre-pumping depth to groundwater level remains insignificant. Analysis of the data shows that the depth to groundwater has varied only a couple of feet between pre-pumping depths and post pumping depths. Many of the post pumping depth to groundwater levels were less than the pre-pumping groundwater levels, which indicates that

the groundwater recovery rate of the well exceeded the rate of extraction during the operating period.

The fact that post-pumping depth to groundwater level data is collected only 24 hours after the well is shut off indicates that soils in the area have very high transmissivity rates, and the rapid recovery of groundwater levels in the vicinity of the wells after well shutoff indicates the ability of the aquifer to recovery very quickly from Project pumping operations. This rapid recovery of groundwater levels is also an indication of the stability of groundwater levels due to the tremendous groundwater recharge associated with the large volume of imported surface water in the region as previously discussed.

The groundwater level monitoring data indicates that the District's pumping activities have not had any significant effect on the very stable groundwater levels in the vicinity of the wells or on nearby wells, and that the proposed renewal of the Project will not have a significant impact on the groundwater resources in the area. The District's established policy, should it ever be necessary, is to respond promptly to any complaints, and take all measures available to avoid any third party well impacts. The same groundwater level monitoring, analysis and policy will continue as part of the proposed Project and is detailed in the Groundwater Level and Subsidence Monitoring Plan included in Appendix G.

Figure 3a – Groundwater Level Monitoring Results

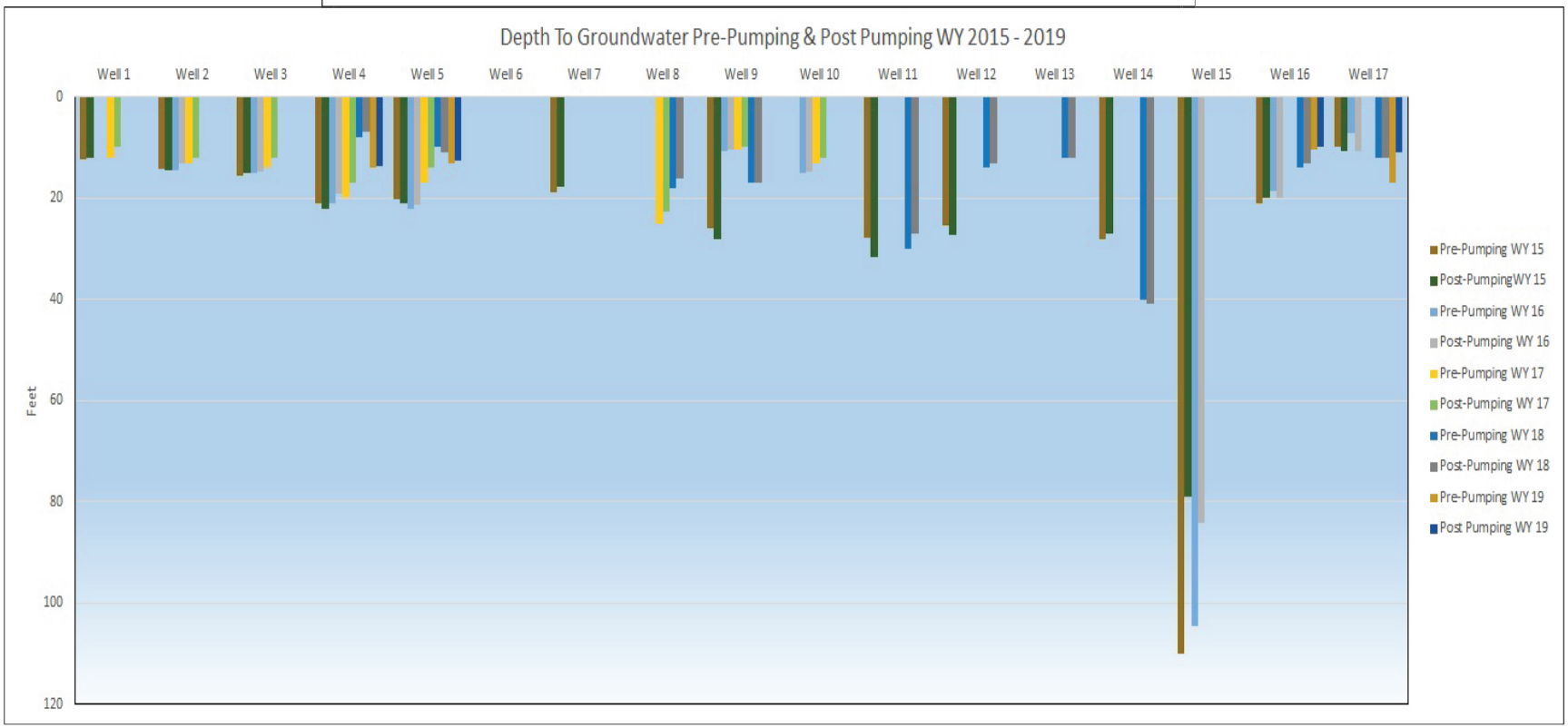
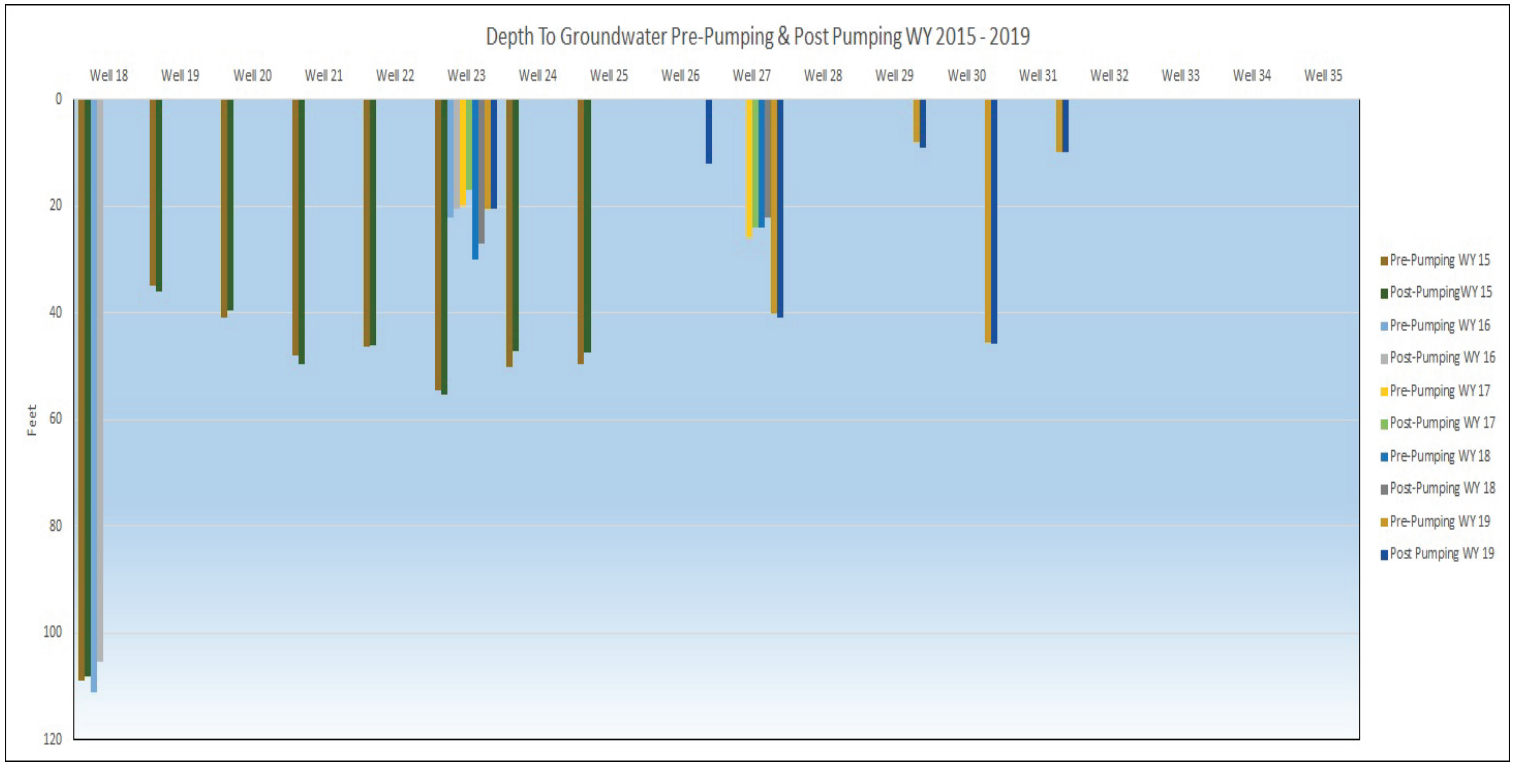


Figure 3b- Groundwater Level Monitoring Results



Land Subsidence

Land subsidence is caused by subsurface movement of earth materials. Principal causes of subsidence within the San Joaquin Valley include: aquifer compaction due to groundwater pumping, hydrocompaction caused by application of water to dry soils, and oil mining. Large withdrawals of groundwater within the San Joaquin Valley between the 1920s and 1960s for agricultural irrigation caused significant overdraft within the central west side of the valley and most of the southern valley, causing substantial land subsidence within those areas. Importation of surface water from the CVP and State Water Project in the 1970s decreased the rate of groundwater withdrawal, allowing aquifer levels to recover and subsequently reducing subsidence rates. Groundwater pumping rates tend to increase throughout the San Joaquin Valley due to regulatory and drought-related curtailments placed on water deliveries from the CVP and State Water Project, resulting in water level declines and renewed compaction.

In 2013, the U.S. Geological Survey (USGS), in cooperation with Reclamation and the San Luis and Delta-Mendota Water Authority (SLDMWA), published a Scientific Investigations Report[1] which assessed land subsidence and water levels in the vicinity of the Delta-Mendota Canal ("DMC") from 2003-2010. Analysis of land surface deformation determined that the northern portion of the DMC was relatively stable between 2003-2010 but that the area around Checks 15-21 (below O'Neill Forebay to the Mendota Pool) was part of a large area of subsidence located south of the town of El Nido, indicating a shift northeast of the area of maximum subsidence previously recorded for 1926-1970. The area affected by 0.07 feet or more of subsidence extended about 50 miles from west to east, from Check 17 of the DMC to the town of Madera, and 25 miles north to south, from near Merced to near Mendota. Maximum subsidence was at least 1.8 feet during 2008– 2010. However, based on stable water levels in shallow wells within this area, it was determined that subsidence was not caused by groundwater-level-induced stresses in the shallow or intermediate zones (unconfined zones), but likely originated below the Corcoran Clay (confined zone).

Various entities including Reclamation, USGS, DWR, SLDMWA, and the San Joaquin River Exchange Contractors have been monitoring subsidence trends within the Central Valley. In 2011, Reclamation established the San Joaquin River Restoration Program (SJRRP) Geodetic Control Network to begin monitoring subsidence with the SJRRP Restoration Area. Subsidence in the Restoration Area has been conducted biannually since 2011. In addition, due to significant subsidence rates along the flood control bypasses that parallel the San Joaquin River (some localized areas showing rates of more than 1 foot per year), DWR has collected levee survey data to help further refine the estimated annual land subsidence rates along the levees of the flood bypasses.

[1] Sneed, Michelle, Brandt, Justin, and Solt, Mike, 2013, Land Subsidence along the Delta-Mendota Canal in the Northern Part of the San Joaquin Valley, California, 2003–10: U.S. Geological Survey Scientific Investigations Report 2013–5142, 87 p., http://dx.doi.org/10.3133/sir20135142

Historically, there was little subsidence monitoring throughout most of Grassland Water District and adjacent lands. However, land surface elevations were periodically measured along Highway 152, between Los Banos and Highway 99 (Figure 5). Near Los Banos, little subsidence was indicated, due to the paucity of groundwater extractions from the lower aquifer in this area. Prior to about 2000, most of the land subsidence along Highway 152 was east of the Eastside Bypass, where numerous wells were present and pumped from the lower aquifer.

To provide a general estimate of historic subsidence rates and trends within the SJRRP Restoration Area and surrounding areas, Reclamation developed an exhibit map (Figure 6) that combined data from various sources prior to the 2011 data collection effort. Figure 6 shows annual subsidence rates ranging from less than 0.02 feet to more than 0.5 feet per year. However, Reclamation and DWR surveys from 2011 to 2013 indicated that the rates had either remained the same or had more than doubled in some areas (see Figure 7).

Starting in about 2008, many more wells tapping the lower aquifer were constructed south of Red Top, both east and west of the Eastside Bypass. Pumping of these lower aquifer wells correlate with significant regional land subsidence as of 2016, with the outer extent of the subsidence impact having reached Grassland Water District. There have been lower aquifer groundwater extraction activities adjacent to the proposed Project area; however, the SJRRP data indicates that subsidence is trending regionally eastward, as depicted by Figure 8.

Figure 8 shows land subsidence determined by Reclamation's SJRRP subsidence monitoring program for July 2012 to December 2016, with Grassland GSA, which corresponds with the Grassland Resource Conservation District and the Grassland Water District service areas, outlined in black. The northern portion's western edge experienced a cumulative subsidence of approximately 0.05 feet between 2012 and 2016, with approximately 0.5 feet of subsidence on the eastern edge. In the southern area, the western edge experienced approximately 0.3 feet of subsidence, and approximately 0.6 feet near the eastern edge. East of the San Joaquin River, and near the subsidence hotspot of Red Top, the subsidence increased to more than 2.0 feet between July 2012 to December 2016. Land subsidence in part of that area decreased after December 2016 due to mitigating measures that were enacted.

Figure 9 illustrates the cumulative subsidence from December 2013 to December 2018, informed by Reclamation's SJRRP subsidence survey data and contoured by Kenneth D. Schmidt and Associates. The region outlined in blue corresponds with the extent of the Grassland GSP Region, which includes Grassland Water District, Grassland Resource Conservation District, state and federal wildlife refuges, and Merced County lands. The cumulative change in land surface elevation within the period of December 2013 to December 2018 ranged from +0.12 feet to a maximum decline of -0.58 feet within the GSP Region. The general trend depicted by the contours indicates greater subsidence east of the San Joaquin River, indicative of the known lower aquifer pumping in that region.

The most recent available SJRRP subsidence monitoring data was further assessed to review annual changes in land surface elevation from December 2017 to December 2018. The results

are expressed in Figure 10, with contours informed by Reclamation's data and developed by Kenneth D. Schmidt and Associates. The recent annual subsidence assessment results were consistent with the historic and recent historic trends. The measured subsidence rates and the analysis indicate that land subsidence in and around the Project area is not affected by localized groundwater extraction activities, and the influence of negative changes in land surface elevation correlate with groundwater activities east of the San Joaquin River and outside of the Delta-Mendota Subbasin.

In conclusion, although significant land subsidence has been measured within the Delta-Mendota Subbasin, most of it has occurred south and east of the District, and is associated with pumping from the lower confined zone, beneath the Corcoran Clay. The area in the vicinity of the Project wells has not been identified as a critical land subsidence area. In addition, the proposed Project wells pump primarily from the unconfined zone above the Corcoran Clay and therefore should not contribute to inelastic land subsidence.

The Grassland GSA has adopted subsidence thresholds as part of its Groundwater Sustainability Plan to avoid adverse effects within the Project area. The District will continue to review and analyze the results of subsidence monitoring programs, collaborate with the Grassland GSA and other monitoring agencies, and take any necessary action to meet its adopted subsidence thresholds.

Figure 5 – Historical Land Surface Elevations Along Highway 152 Transect

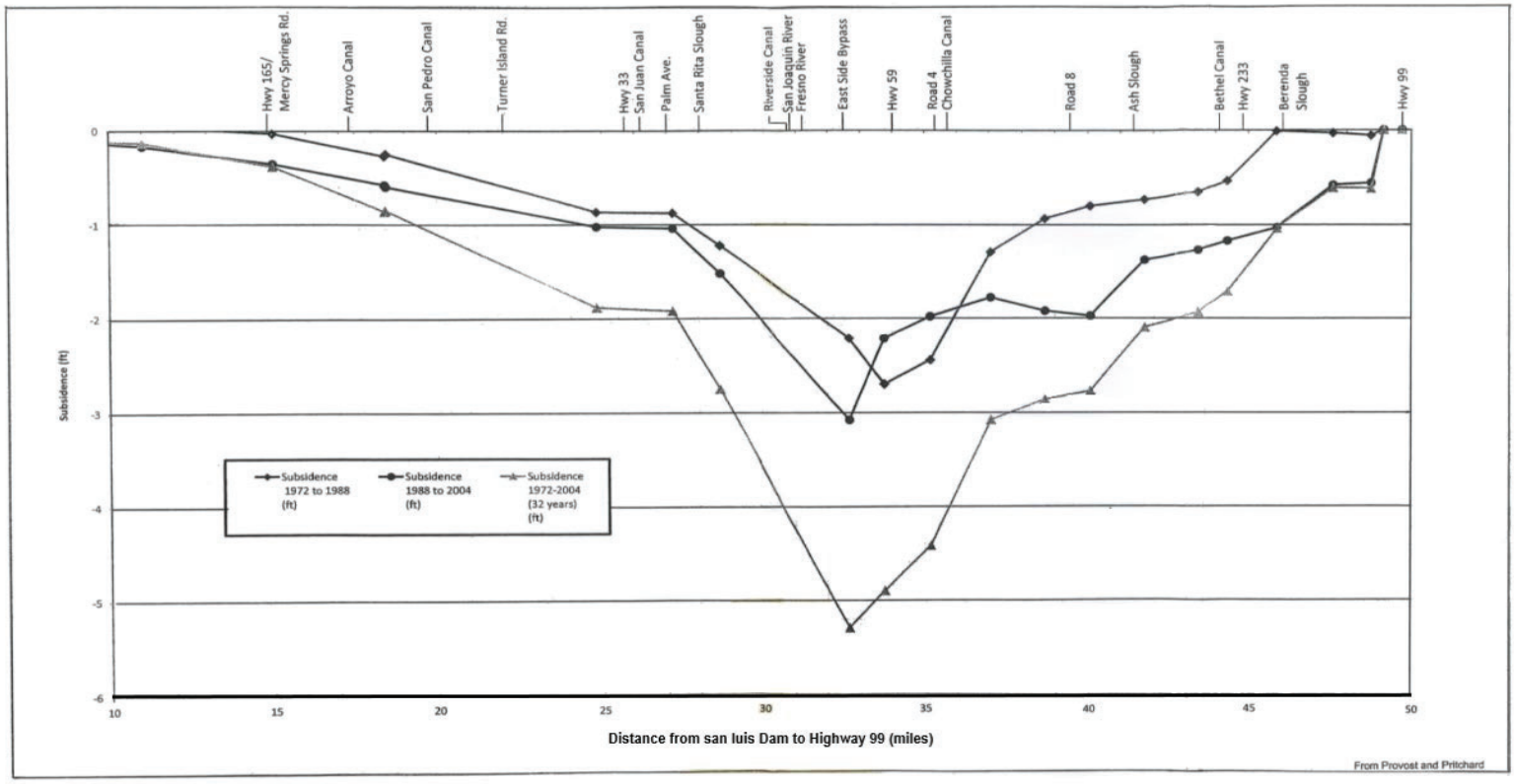


Figure 6 – Subsidence Rates Prior to 2011

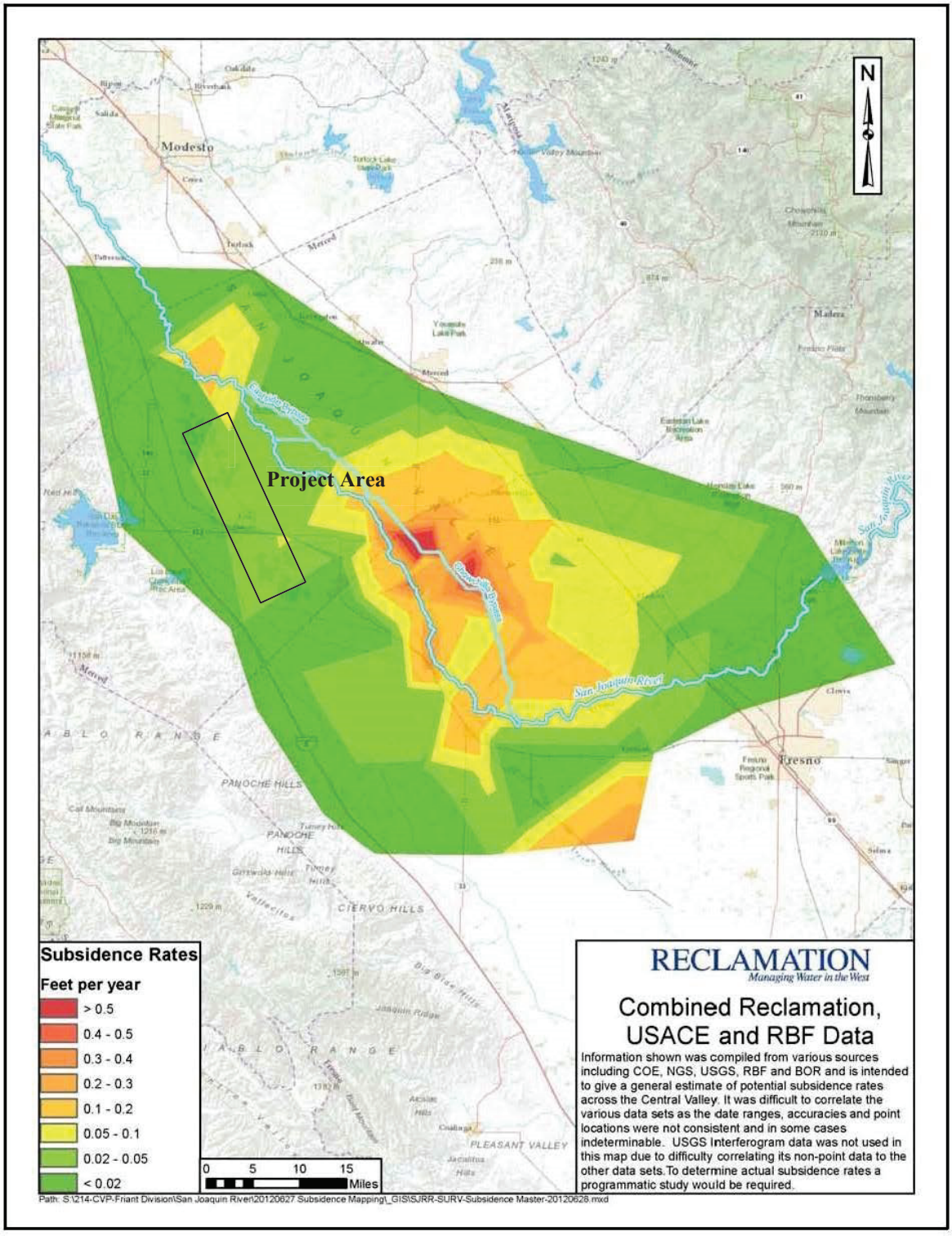


Figure 7 – Annual Subsidence Rates from December 2011 to December 2013

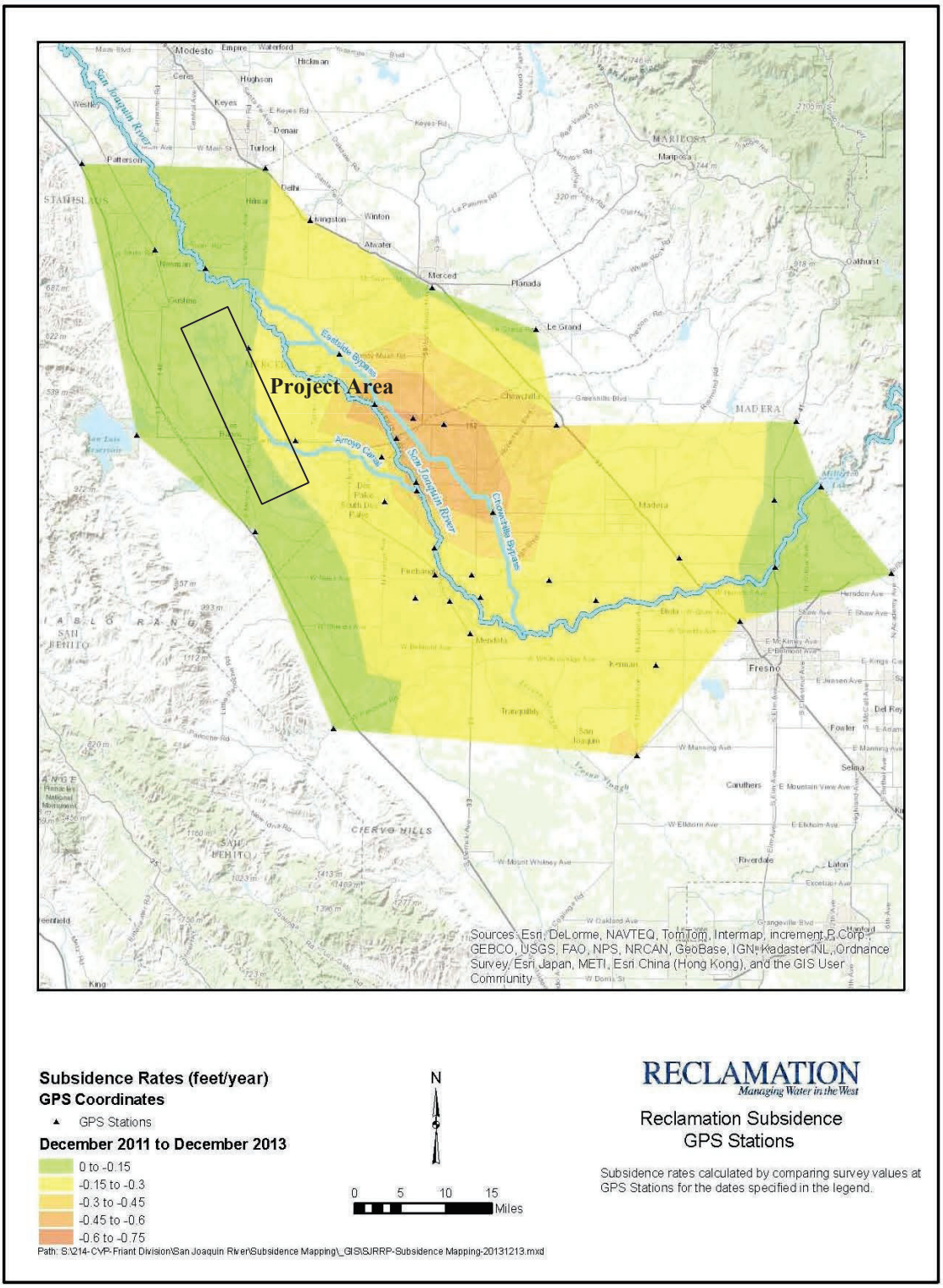


Figure 8- Cumulative Land Subsidence from July 2012 to December 2016

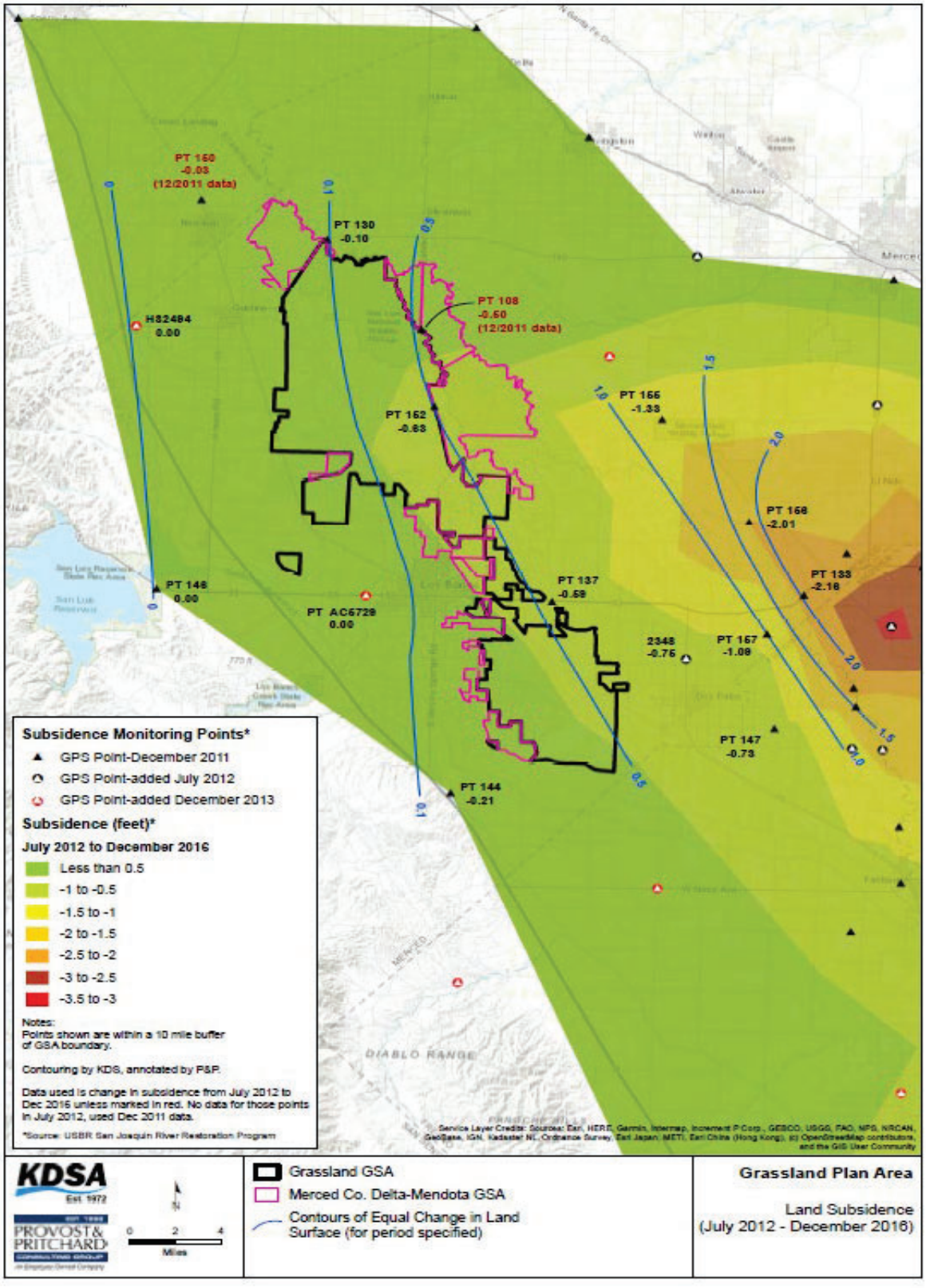


Figure 9 - Cumulative Subsidence from December 2013 to December 2018

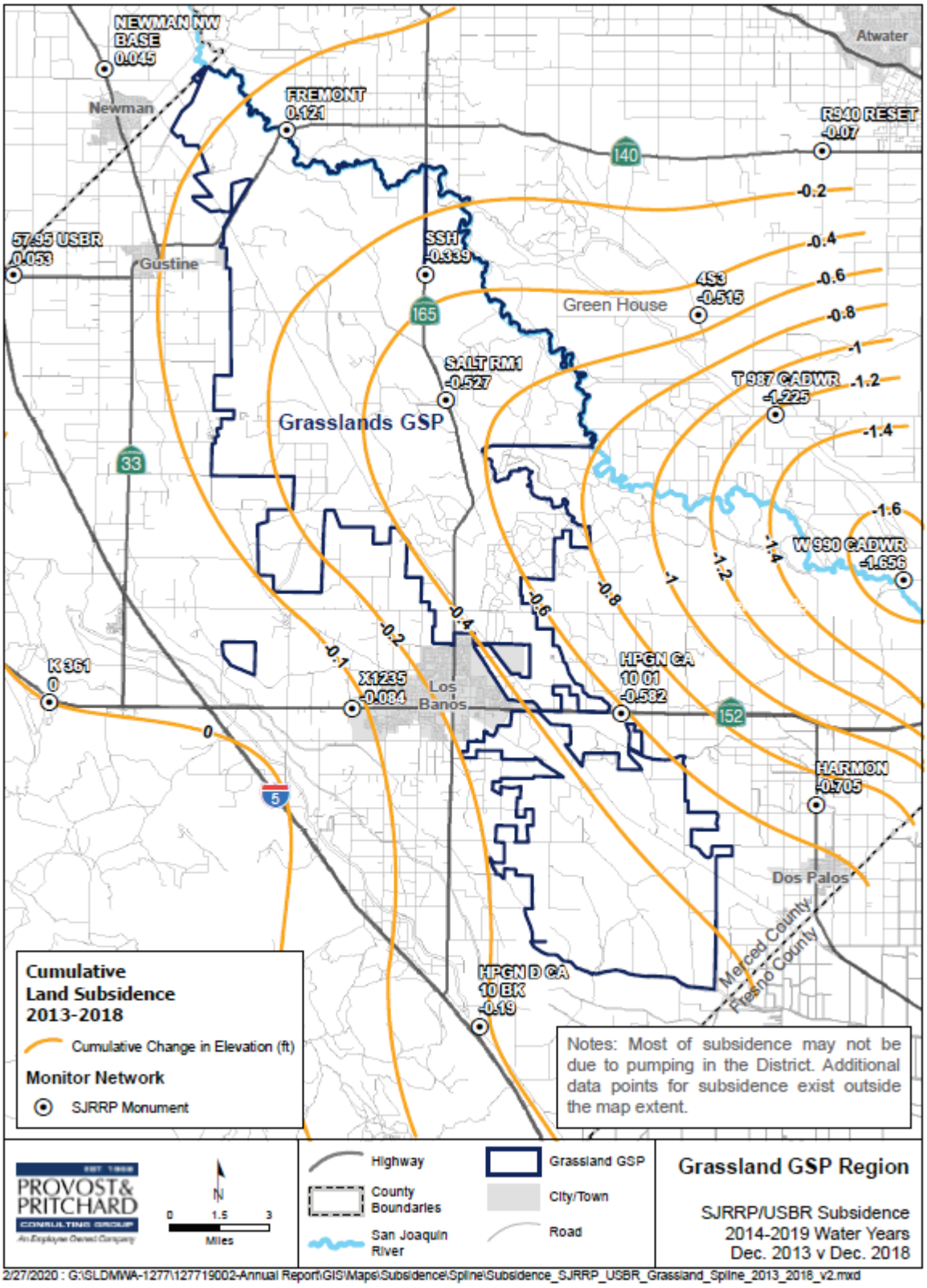
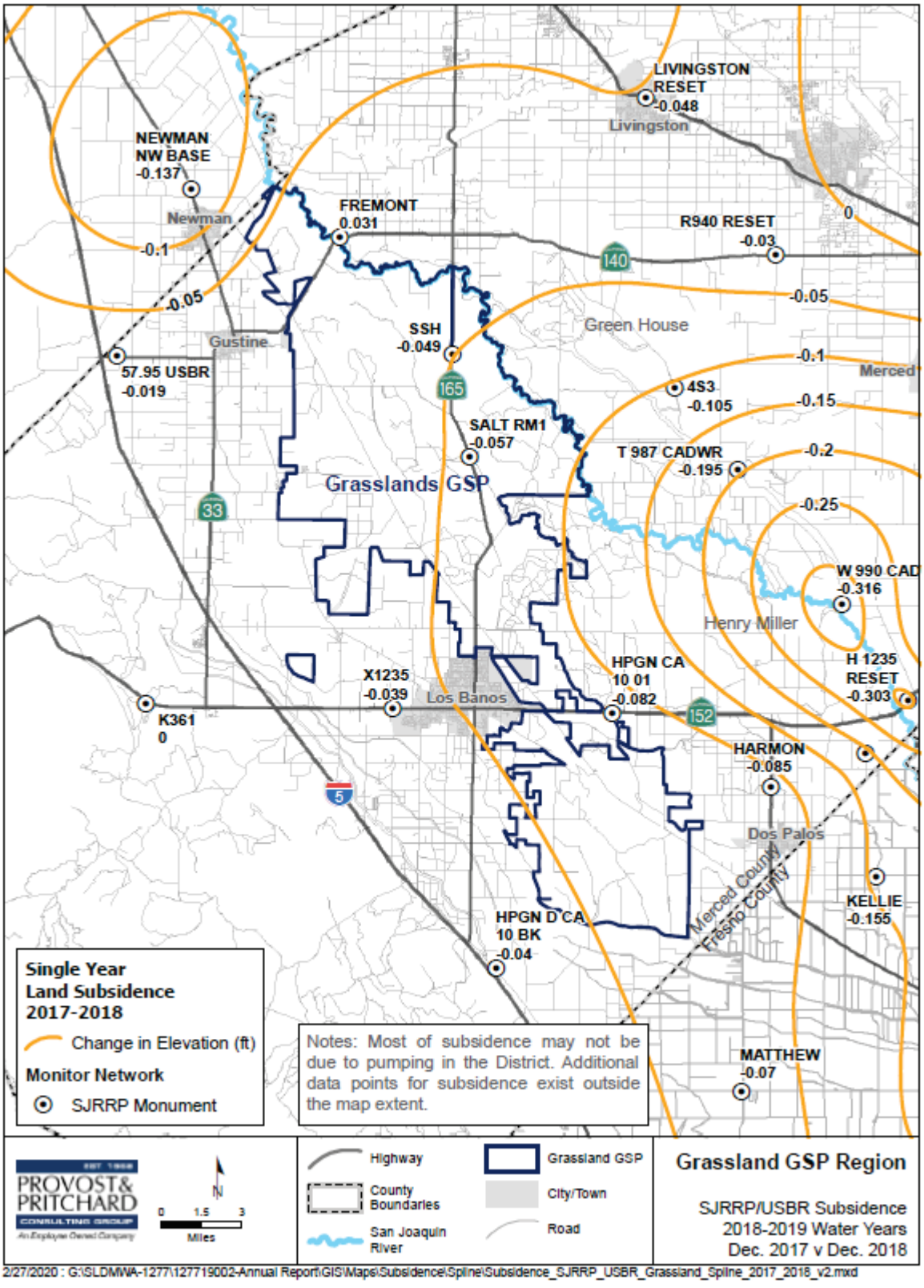


Figure 10 - Annual Subsidence Rate from December 2017 to December 2018



Project Monitoring Plan

The monitoring plans for water quality, groundwater levels and land subsidence are included as Appendix F and Appendix G.

4. No Project Alternative

Under the No Project alternative, the existing Project would end on March 1, 2021 and Incremental Level 4 refuge water supplies available to the GWD/GRCD would be significantly reduced. However, Reclamation has a statutory obligation to provide Level 4 water supplies to the GWD/GCRD pursuant to the CVPIA. Absent the Project, the District may experience water shortages, resulting in negative impacts to GRCD biological resources.

5. Reasons for Finding

Based on the initial study and, in particular, the analysis related to water quality, groundwater levels and land subsidence associated with the existing Project, the District finds that the existing Project resulted in no significant impact on the environment and that the proposed renewal of the Project poses no significant impact on the environment, and therefore will not require mitigation.

The water quality analyses for the existing Project indicate that there was no degradation of water quality on GRCD lands or in water discharged to the San Joaquin River, and no impacts on water quality are expected from the proposed Project. Nevertheless, in an abundance of caution, the District will continue implementation of several protections built into the existing Project to ensure water quality values will not exceed the established objectives during the proposed Project renewal period. First, the District will closely monitor water quality at all wells throughout the Project and in the receiving water downstream of wells. Should Project pumping lead to exceedances of water quality objectives at the wellhead or in the receiving water, the District will cease or modify pumping or increase the flow of surface water in the receiving conveyance channel until water quality objectives are met.

For all wells, the District will monitor EC (for TDS) on a weekly basis, and boron and selenium concentrations at the beginning and end of each pumping period. Monthly sampling and analysis for selenium will be conducted downstream of the discharge of all wells producing water with concentrations of selenium greater than 2.0 µg/L. The District will provide Reclamation with a monthly report on water quality throughout the Project's term. In addition, the District will monitor the EC, temperature and pH of the receiving water weekly both upstream and downstream of all active well discharges. Monitoring results will also be summarized in the Grassland GSA's annual reports submitted to DWR pursuant to SGMA.

II. ENVIRONMENTAL CHECKLIST AND INITIAL STUDY

The proposed Project qualifies as a "project" as defined by CEQA. The proposed Project does not qualify for one of CEQA's categorical exemptions.

The Project is located in the Northwestern San Joaquin Valley of California. The San Joaquin Valley consists of flat terrain with many irrigation facilities and canals. The primary land use in the area is agriculture and managed wetlands. Rural residences are mostly associated with agriculture land uses. Existing land uses on the wetland habitat areas are managed to provide wildlife habitat, hunting and bird watching opportunities.

The negative declaration for the Project requires a 20-day period for public and agency review. (See Public Resources Code § 21091(b); 14 Cal. Code Regs § 15073(a).) It does not require the 30-day State Clearinghouse review. A lead agency need only submit a negative declaration to the State Clearinghouse if it meets any of the following criteria:

(1) A proposed local general plan, element, or amendment thereof for which an EIR was prepared. If a Negative Declaration was prepared for the plan, element, or amendment, the document need not be submitted for review.

(2) A project has the potential for causing significant effects on the environment extending beyond the city or county in which the project would be located. Examples of the effects include generating significant amounts of traffic or interfering with the attainment or maintenance of state or national air quality standards. Projects subject to this subdivision include:

(A) A proposed residential development of more than 500 dwelling units.

(B) A proposed shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space.

(C) A proposed commercial office building employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space.

(D) A proposed hotel/motel development of more than 500 rooms.

(E) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or encompassing more than 650,000 square feet of floor area.

(3) A project which would result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 (Williamson Act) for any parcel of 100 or more acres.

(4) A project for which an EIR and not a Negative Declaration was prepared which would be located in and would substantially impact the following areas of critical environmental sensitivity:

(A) The Lake Tahoe Basin.

(B) The Santa Monica Mountains Zone as defined by Section 33105 of the Public Resources Code.

(C) The California Coastal Zone as defined in, and mapped pursuant to, Section 30103 of the Public Resources Code.

(D) An area within 1/4 mile of a wild and scenic river as defined by Section 5093.5 of the Public Resources Code.

(E) The Sacramento-San Joaquin Delta, as defined in Water Code Section 12220.

(F) The Suisun Marsh as defined in Public Resources Code Section 29101.

(G) The jurisdiction of the San Francisco Bay Conservation and Development Commission as defined in Government Code Section 66610.

(5) A project which would substantially affect sensitive wildlife habitats including but not limited to riparian lands, wetlands, bays, estuaries, marshes, and habitats for endangered, rare and threatened species as defined by Section 15380 of this Chapter.

(6) A project which would interfere with attainment of regional water quality standards as stated in the approved area-wide waste treatment management plan.

(7) A project which would provide housing, jobs, or occupancy for 500 or more people within 10 miles of a nuclear power plant.

The environmental factors below are those enumerated in CEQA, which if triggered by the Project, may result in a project-related "potentially significant impact" to the environment. As indicated by the checklist on the following pages, the proposed Project poses no potentially significant impacts on the environment.

	Aesthetics		Agriculture Resources		Air Quality
	Biological Resources		Cultural Resources		Geology/Soils
	Mineral Resources		Noise		Population/Housing
	Public Services		Recreation		Transportation/Traffic
	Utilities/Service Systems		Tribal Cultural Resources		Mandatory Findings of Significance

DETERMINATION: (Completed by the Grassland Water District, the lead agency)

On the basis of this initial evaluation:

X	I find that the project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION was appropriate.
	I find that although the project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from a "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and

b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Initial Study Checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?				**X**
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				**X**
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				**X**
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				**X**

Discussion of Checklist Answers:

a-d) The Project does not include construction of new facilities and will not have any adverse effect on a scenic vista, damage scenic resources, degrade the existing visual character or quality of the site and its surroundings, or create any new source of light or glare.

II. AGRICULTURE AND FORESTRY RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				**X**
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				**X**
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production				**X**

(as defined in Government Code section 51104(g))?				
d) Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				**X**

Discussion of Checklist Answers:

a-e) The Project does not include any land use changes or other changes in the existing environment and therefore will not convert any farmland to non-agricultural use, conflict with existing zoning for agricultural or forest use, conflict with a Williamson Act contract, or involve other changes that would convert agricultural or forest land to other uses.

III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				**X**
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				**X**

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?				**X**
d) Expose sensitive receptors to substantial pollutant concentrations?				**X**
e) Create objectionable odors affecting a substantial number of people?				**X**

Discussion of Checklist Answers:

a-e) Electric well pumps do not emit pollutants such as particulate matter to the air.

IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				**X**
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				**X**

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				**X**
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				**X**
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				**X**
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				**X**

Discussion of Checklist Answers:

a-d) The Project will not have adverse effects on biological resources. In fact, the Project is designed to provide additional water to the managed wetlands in the District to maintain, protect and enhance wetland habitat and biological resources, including the wildlife that it supports.

e-f) The Project does not conflict with any local policies, ordinances or the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

V. CULTURAL RESOURCES -- Would the project:				

a) Cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5?				**X**
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5?				**X**
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				**X**
d) Disturb any human remains, including those interred outside of formal cemeteries?				**X**

Discussion of Checklist Answers:

a-d) There is no construction associated with the proposed Project and therefore there will be no adverse change to any historic, archaeological, paleontological, or unique geologic features present in the Project area and will not disturb any human remains.

VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				

i) Rupture of a known earthquake fault, as delineated on the most recent AlquistPriolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				**X**

ii) Strong seismic ground shaking?				**X**
iii) Seismic-related ground failure, including liquefaction?				**X**
iv) Landslides?				**X**
b) Result in substantial soil erosion or the loss of topsoil?				**X**
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			**X**	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				**X**
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				**X**

Discussion of Checklist Answers:

a) The Project does not include any construction of new facilities and will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: earthquake faults, seismic ground shaking or ground failure, or landslides.
b) There is no proposed disturbance of soil associated with the Project and therefore there will be no soil erosion or loss of topsoil.

c) Although significant land subsidence has been measured within the Delta-Mendota Subbasin, most of it has occurred south of the District and has been associated with pumping from the lower confined zone, beneath the Corcoran Clay. The area in the vicinity of the Project wells has not been identified as a critical land subsidence area. In addition, the proposed wells pump primarily from the unconfined zone above the Corcoran Clay and therefore should not contribute to any land subsidence associated with pumping from the confined zone below the

Corcoran Clay. See Section I.3.B for a detailed discussion of the potential of the proposed Project to contribute to land subsidence.

d-e) No new facilities are included as part of the Project and therefore soil stability, expansive soils and the soil's ability to support waste water disposal will not be an issue with the implementation of the Project.

VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				**X**
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				**X**

Discussion of Checklist Answers:

a-b) GHG emissions are generated annually by use of electricity to pump water to irrigate existing crops and to provide water for the managed wetlands in the District. Implementation of the proposed Project would require the continued use of electricity to pump water to the managed wetlands. The volume of any increase in GHG air pollutant emissions generated by the Project is considered less than significant, and does not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				**X**
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				**X**
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				**X**
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				**X**
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				**X**
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				**X**
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				**X**

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				**X**

Discussion of Checklist Answers:

a-b) The rest wells proposed to be operated as part of the Project are equipped with electrically-driven motors and therefore will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. These existing wells will not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c, e, f) There are no schools within one-quarter mile of the Project site, nor are there any public or private air strips within the vicinity of the Project site.

d) There are no identifiable hazardous materials, pursuant to Government Code Section 65962.5, on the Project site, nor will hazardous materials, substances, or wastes be disposed of on site.

g) The Project will not interfere with any emergency response or evacuation plans. The site is at low risk of wildfires as the area surrounding the site is either wetlands or being farmed.

h) The Project will not expose people or structures to significant risk of loss, injury or death involving wildland fires.

IX. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?			**X**	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater			**X**	

table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				**X**
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				**X**
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				**X**
f) Otherwise substantially degrade water quality?			**X**	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				**X**
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				**X**

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				**X**
j) Inundation by seiche, tsunami, or mudflow?				**X**

Discussion of Checklist Answers:

a) The Project does not include any discharge of waste and therefore there are no waste discharge requirements. The only regulatory water quality objective established for the water conveyance system in the District is the limit for selenium of 2 μg/L. For selenium, the District and Reclamation have agreed to use a water quality objective of 5 μg/L at each wellhead, in order to ensure compliance with the instream surface water quality objective of 2 μg/L. Boron is primarily a constituent of concern in the lower San Joaquin River, where objectives (maximum of 5.8 mg/l) have been set by the Central Valley Regional Water Quality Control Board (RWQCB) as protective measures for the growing of row crops and trees. Even though there is no adopted water quality objective for boron within the District, GWD and Reclamation have agreed to establish an objective of 4 mg/L for boron in the receiving channel downstream of the well discharge. For TDS, the District's Board of Directors has adopted a water quality objective of 2,500 mg/L for any water discharged into a District conveyance channel. The locations and frequency of water quality sampling as well as the protocols to ensure compliance with the water quality objectives established for the Project are described in the Project Monitoring Plan included as Appendix F. The proposed monitoring plan is essentially the same as the monitoring plan implemented for the existing Project, which has proven effective in protecting the water quality within the District conveyance system and water quality in the managed wetlands in the District. The results of the water quality monitoring are presented in the annual Incremental Level 4 Groundwater Acquisition Pilot Project Reports, the most recent of which is shown in Appendix D. Also, included in Appendix C is a summary of the latest water quality data for the wells included in the five current groundwater agreements, as well as the Water Quality Analytical Reports. This impact is considered less than significant.

b) The groundwater level monitoring conducted during the existing Project has established that the use of groundwater in and nearby the District for wetland management purposes has not affected groundwater levels in the vicinity of the wells. No complaints from nearby well owners have been received. The Project will not increase the current maximum volume of groundwater that can be pumped under existing agreements, which is 35,600 AF. As described in the District's Groundwater Management Plan and in the Grassland Groundwater Sustainability Plan, the annual recharge volume attributable to the percolation of imported surface water within the District is estimated to be greater than 40,000 AF. This annual recharge estimate includes the recharge from percolation from unlined conveyance channels and from the managed wetlands ponds that are flooded for six to nine months per year. The continued development of groundwater to supplement the water needs of the District as part of the Project will include the

same groundwater level monitoring plan as currently being implemented as part of the District's groundwater program, including any measures required to protect groundwater levels in the vicinity of the wells. The results of groundwater level monitoring are presented in the annual Incremental Level 4 Groundwater Acquisition Pilot Project Reports, as shown in Appendix D, and in the Volta Wells annual reports, as shown in Appendix E. See Section I.3.B for detailed discussion of groundwater level monitoring and results. This impact is considered less than significant.

c-e) The Project does not include earthwork or construction at the various well sites and therefore will not alter the drainage pattern of the site or the area and will not create runoff.

f) See discussion of IX.a, above.

g-j) The Project does not include construction of housing or structures and will therefore not expose housing, structures or people to flooding in a 100-year floodplain or from failure of a dam or levee, tsunami, seiche, or landslide.

X. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?				**X**
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				**X**
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				**X**

Discussion of Checklist Answers:

a-c) The Project does not include any changes in land use and will not divide an established community, conflict with any established land use plan, policy or regulations, or conflict with any habitat conservation plan or natural community conservation plan.

XI. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				**X**
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				**X**

Discussion of Checklist Answers:

a-b) The Project does not impact mineral resources in the area.

XII. NOISE -- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				**X**
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				**X**
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				**X**

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				**X**
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				**X**
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				**X**

Discussion of Checklist Answers:

a-f) The Project will not create permanent or temporary noise levels in excess of any existing standards, or ground borne vibration, and is not located within two miles of an airport.

XIII. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				**X**
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				**X**

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				**X**

Discussion of Checklist Answers:

a-c) The Project does not include construction of new or replacement housing and will not impact population growth.

XIV. PUBLIC SERVICES --				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?				**X**
Police protection?				**X**
Schools?				**X**
Parks?				**X**
Other public facilities?				**X**

Discussion of Checklist Answers:

a) The Project does not include any construction and does not require public services.

XV. RECREATION --				

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				**X**
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				**X**

Discussion of Checklist Answers:

a-b) The Project does not create or have a recreation component included, and would not adversely affect recreational facilities.

XVI. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				**X**
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				**X**

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				**X**
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				**X**
e) Result in inadequate emergency access?				**X**
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				**X**

Discussion of Checklist Answers:

a-f) The Project will not significantly increase vehicle or air traffic and will not exceed any established standards, create any safety risks or change emergency access to the well sites, affect parking capacities, or conflict with any adopted policies, plans or programs supporting alternative transportation.

XVII. TRIBAL CULTURAL RESOURCES -- Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as				**X**

defined in Public Resources Code section 5020.1(k), or				
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				**X**

Discussion of Checklist Answers:

a-b) The Project does not include any construction and will not cause a change in the significance of a tribal cultural resource. The Project will not affect any cultural resource that is listed or eligible for listing as a historical resource or that is of significance to a California Native American tribe.

XVIII. UTILITIES AND SERVICE SYSTEMS -- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				**X**
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				**X**
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				**X**

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			**X**	
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				**X**
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				**X**
g) Comply with federal, state, and local statutes and regulations related to solid waste?				**X**

Discussion of Checklist Answers:

a-c, and e-f) The Project does not include the construction or use of wastewater treatment, stormwater facilities or landfills and does not generate solid waste.

d) No new or expanded entitlements for water supply are required for the Project. The groundwater resources in the Project area are sufficient to support the continued development of groundwater for Project purposes. See discussion of IX.a, above.

XVIV. MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				**X**
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				**X**

Discussion of Checklist Answers:

a) The Project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. The purpose of the Project is to sustain the managed wetlands in the District that support the millions of migratory waterfowl and other species dependent on the habitat.

b) The Project does not have impacts that are individually limited, but cumulatively considerable. The potential impacts of the Project on water quality, groundwater levels, and land subsidence have been analyzed as part of the existing Incremental Level 4 Groundwater Project, and are detailed and described in the annual Incremental Level 4 Groundwater Project Reports

included in Appendix D, and in the Volta Wells Project annual reports included in Appendix E. The monitoring of Project operations and potential impacts are described in the Project Monitoring Plans included in Appendix F and Appendix G. Implementation of the monitoring plans and their protection measures are designed to minimize the potential effects of the Project. These impacts are considered less than significant.

c) The Project does not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.