Water Supply Assessment
For the ZGlobal Vega SES 6, LLC
Solar Energy and Battery Storage Project
Imperial County, California

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1.0 INTRODUCTION

EMKO Environmental, Inc. (EMKO) has prepared this Water Supply Assessment (WSA) as a subconsultant to ECORP Consulting, Inc. for the proposed Vega SES 6, LLC Solar Energy and Battery Storage Project (Project) in Imperial County, California at the location indicated on Figure 1. Project water use includes dust control and soil conditioning requirements during construction and routine maintenance, primarily panel washing, during operation.

Water Code Sections 10910 through 10915 were amended by Senate Bill 610 (SB 610) in 2002. SB 610 requires that under specific circumstances, as detailed below, an assessment of available water supplies must be conducted. The purpose of the assessment is to determine if available water supplies are sufficient to serve the demand generated by the Project, as well as the reasonably foreseeable demand in the region over the next 20 years under average normal year, single dry year, and multiple dry year conditions. Water Code Section 10910 was further amended by SB 1262 on September 24, 2016, to require a Water Supply Assessment to include additional information regarding the groundwater basin designation and adjacent water systems. This report provides the information required for a Water Supply Assessment (WSA), as described in the October 2003 *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to Assist Water Suppliers, Cities, and Counties in Integrating Water and Land Use Planning*, published by the California Department of Water Resources (DWR Guidebook) along with the additional information required by SB 1262.

2.0 PROJECT DESCRIPTION

Vega SES 6, LLC is proposing to construct and operate the Project on private lands in the Imperial Valley in Imperial County, California**.** The Project site is located approximately five miles southwest of the community of Westmorland and 10 miles west of the City of Brawley, south of Andre Road (see Figures 1 and 2). The Project includes approximately 320 acres in Section 26 of Township 13 South, Range 12 East of the San Bernardino Base and Meridian (SBB&M) within the “Westmorland West” 7.5-minute U.S. Geologic Survey (USGS) quadrangle. The Project site covers Imperial County Assessor’s Parcel Number (APN) 034-160-002. The site is one-half mile west of the Imperial Irrigation District (IID) Westside Main Canal (see Figure 2). The Project will

include an 80-megawatt solar photovoltaic system and integrated 160-megawatt battery energy storage system along with related substations and transmission lines. Figure 3 is a Site Plan showing the Project layout and ancillary facilities.

The parcel is not currently located within the Imperial County Renewable Energy Overlay Zone. Thus, an amendment to the County's General Plan must be approved, along with a Conditional Use Permit (CUP), to allow construction and operation of the Project. These are discretionary actions by the County requiring compliance with the California Environmental Quality Act (CEQA). This Water Supply Assessment is intended to support and be a part of the CEQA analysis.

Domestic water and sanitation facilities would be required during construction. These would be provided through bottled water and portable facilities. A domestic/potable water connection would not be required.

Construction is anticipated to require 12 to 18 months to complete. Anticipated operational Project life is 25 to 30 years.

Figure 1. Regional Location Map

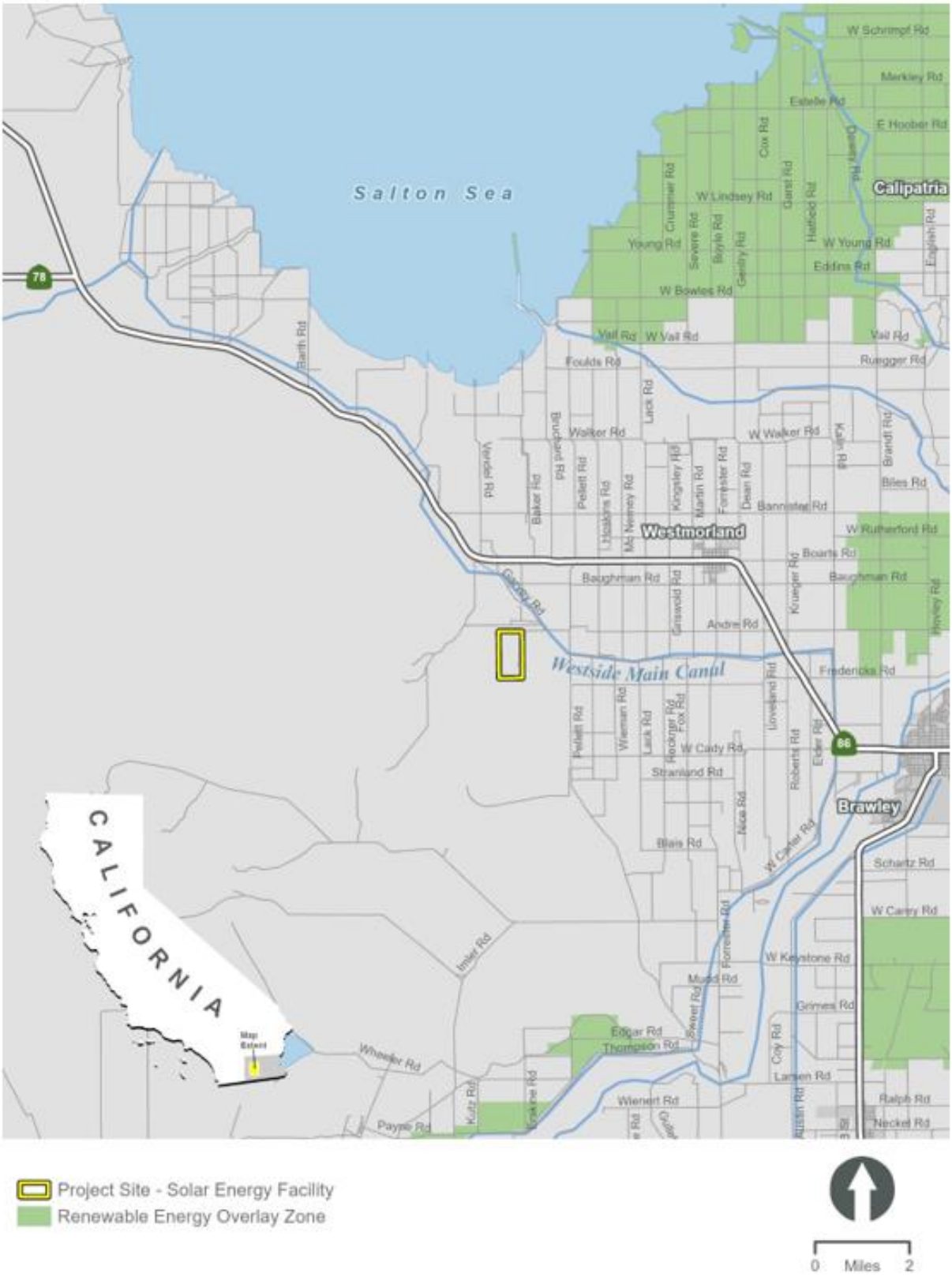
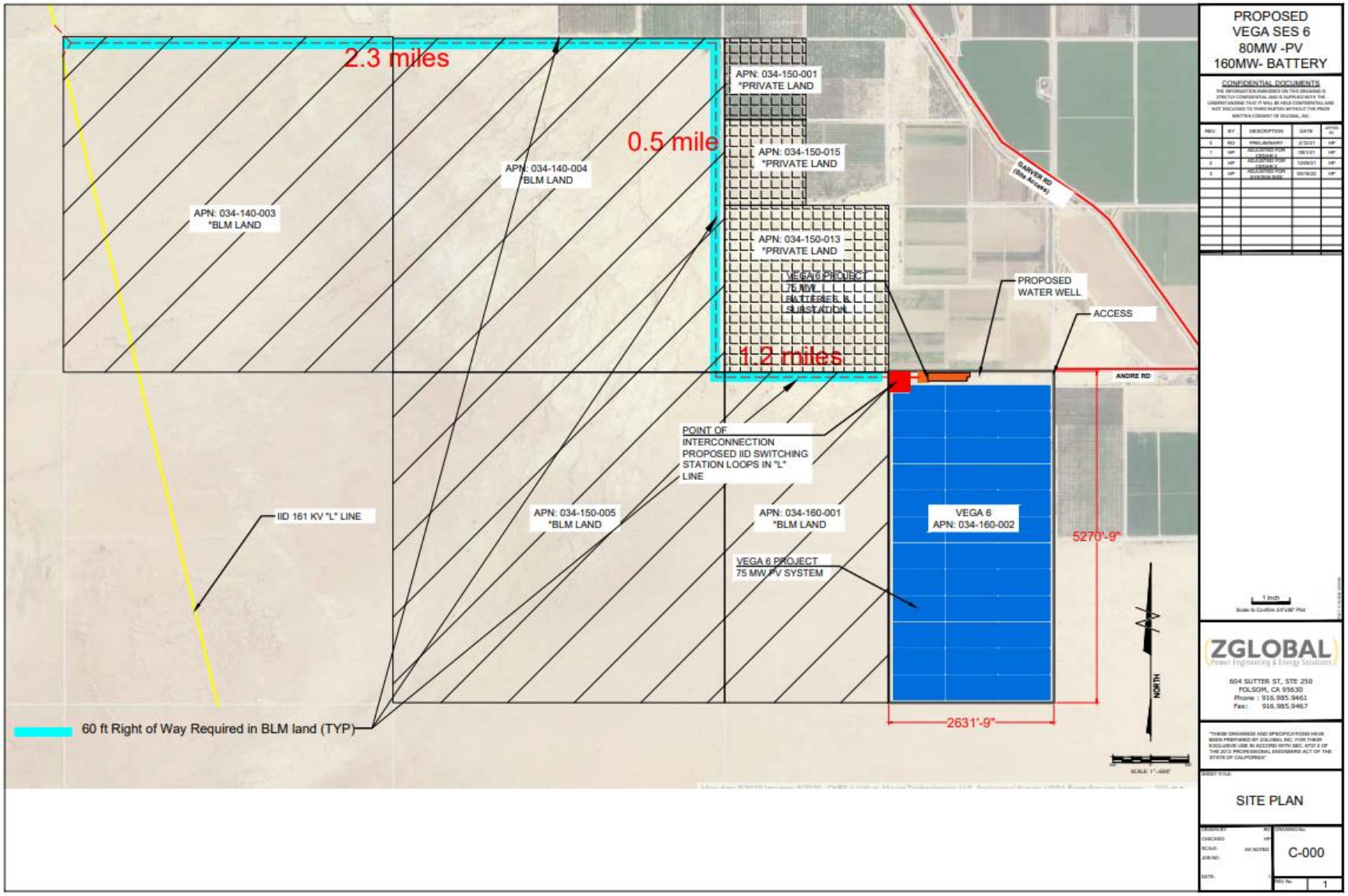


Figure 2. Project Location

FIGURE 3. Site Plan



3.0 WATER SUPPLY PLANNING UNDER SB 610 and SB 1262

SB 610, effective January 1, 2002, amends Sections 10910 through 10915 of the Water Code by requiring preparation of a WSA for development projects subject to CEQA and other criteria, as discussed below. SB 610 also amends Section 10631 of the Water Code, which relates to Urban Water Management Plans (UWMPs). The WSA process under SB 610 is designed to rely on the information typically contained in UWMPs, where available.

On September 24, 2016, SB 1262 further amended Section 10910 of the Water Code to require additional information related to adjacent public water systems and the status of the groundwater basin. These amendments provide additional consistency with the Sustainable Groundwater Management Act of 2014, as discussed further in Section 4.3.

The first steps in the WSA process are to determine whether SB 610 applies to the proposed Project. If so, then documentation of available water supplies, anticipated Project demand, and the sufficiency of supplies must be conducted. These issues are summarized by the following questions, as outlined in the DWR Guidebook:

1. Is the proposed Project subject to CEQA?
2. Is the proposed Project a "Project" under SB 610?
3. Is there a public water system that will service the proposed Project?
4. Is there a current UWMP that accounts for the project demand?
5. Is groundwater a component of the supplies for the Project?
6. Are there sufficient supplies to serve the Project over the next twenty years?

Each of these issues are discussed in the following sections as they relate to the proposed Project.

3.1 Is the Proposed Project Subject to CEQA?

The first step in the SB 610 process is to determine whether the proposed project is subject to CEQA. Water Code Section 10910(a) states that any city or county that determines that an application meets the definition of "project", per Water Code Section 10912 (see Section 3.2, below), and is subject to CEQA, shall prepare a water supply assessment for the project. CEQA applies to projects requiring issuance of a discretionary permit by a public agency, projects undertaken by a public agency, or projects funded by a public agency. As noted in Section 2.0, the proposed Project requires discretionary approval of a General Plan Amendment and a CUP by Imperial County, a public agency. Therefore, the Project is subject to CEQA. This WSA has been prepared to support the environmental review that will be conducted by Imperial County under CEQA.

3.2 Is the Proposed Project a "Project" Under SB 610?

The second step in the SB 610 process is to determine if the proposed Project meets the definition of "project" under Water Code Section 10912(a). Under Section 10912(a) a "project" is defined as meeting any of the following criteria:

1. a proposed residential development of more than 500 dwelling units;
2. a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
3. a proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
4. a proposed hotel or motel, or both, having more than 500 rooms;
5. 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 having more than 650,000 square feet of floor area;
6. a mixed-use project that includes one or more of the projects defined above; or
7. a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

The Vega SES 6 site is 320 acres. As a result, the Project will include an industrial site that is larger than 40 acres and thus this WSA is being prepared in accordance with criterion 5, above.

3.3 Is There a Public Water System That Will Service the Proposed Project?

Section 10912(c) of the Water Code identifies a public water system as a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. The Project site is approximately five to 10 miles away from the nearest municipal water systems (i.e., the community of Westmorland and the City of Brawley, respectively). Furthermore, the water allocations to these systems from IID would likely be insufficient to serve the Project. For example, the annual allocation to Westmorland in 2022 was 723.4 acre-feet, which is not much greater than the construction water demand for the Project (IID, 2023a). The Project parcel is also located outside of IID's Imperial Unit and, therefore, does not have water service from IID (IID, 2023b). Thus, there is not a public water system that will serve the Project. The water supply will be provided by a new onsite groundwater supply well or wells to be drilled and installed as part of the Project.

3.4 Is There a Current Urban Water Management Plan That Accounts for the Project Demand?

The Water Code requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet per year, must prepare an UWMP. The DWR Guidebook (page iii) states that SB 610 repeatedly refers to the UWMP as a planning document that can be used to meet the standards set forth in the statute, and that UWMPs act as a foundation to fulfill the requirements of the statute. As noted in Section 3.3, above, there is no public water system that will serve the Project and, therefore, there is not an UWMP that addresses the Project area or Project demand. Since there is not an UWMP that accounts for the Project demand, this WSA is based upon available and relevant information from DWR, USGS, and other publicly available data. As this WSA has been prepared for use by the CEQA lead agency, this document includes an evaluation of whether the total projected water supplies, determined to be available during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed Project, in addition to existing and planned future uses, including agricultural and manufacturing uses, in accordance with Water Code § 10910(c)(4).

3.5 Is Groundwater a Component of the Supplies for the Project?

Water Code Section 10910(f), paragraphs 1 through 5, must be addressed if groundwater is a source of supply for the proposed Project. As described in Section 3.3, the water supply will be provided by a new groundwater supply well or wells that will be drilled and installed as part of the Project. Therefore, an assessment of groundwater conditions is included in this document.

Water Code Section 10910(f) paragraphs 1 through 5, as modified by SB 1262, state:

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

> (1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.
>
> (2) (A) A description of any groundwater basin or basins from which the proposed project will be supplied. (B) For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. (C) For a basin that has not been adjudicated that is a basin designated as high- or medium priority pursuant to Section 10722.4, information regarding the following: (i) Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924; and (ii) If a groundwater sustainability agency has adopted a groundwater

sustainability plan or has an approved alternative, a copy of that alternative or plan. (D) For a basin that has not been adjudicated that is a basin designated as low- or very-low priority pursuant to Section 10722.4, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

Paragraphs 1 through 4, above, are addressed in Section 4.0, below, including a description of the groundwater basin, groundwater conditions, and available supply. Section 5.0 presents available information regarding water demand for the Project.

The Paragraph 5 requirement to provide an analysis of the sufficiency of the groundwater basin to meet the projected water demand associated with the proposed project is addressed in Section 6.0, below.

3.6 Are There Sufficient Supplies to Serve the Project Over the Next Twenty Years?

Water Code Section 10910(c)(4) requires the WSA to "*include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-*

year projection, will meet the projected water demand associated with the proposed project, in addition to existing and future planned uses, including agricultural and manufacturing uses."

The sufficiency of water supply for the proposed Project is addressed in Sections 6.0 and 7.0, below.

4.0 PROJECT WATER SUPPLY

As stated in Section 3.3, above, water for the Project will be provided by a new well or wells to be drilled on the Project site. As such, groundwater will be the sole water supply for both the construction and operational water needs. Because there are no public water systems that rely on groundwater, or other significant users of groundwater in the groundwater basin, there are no Urban Water Management Plans or similar planning documents available that include information regarding groundwater supply. Thus, limited information is available regarding groundwater conditions in the Project vicinity.

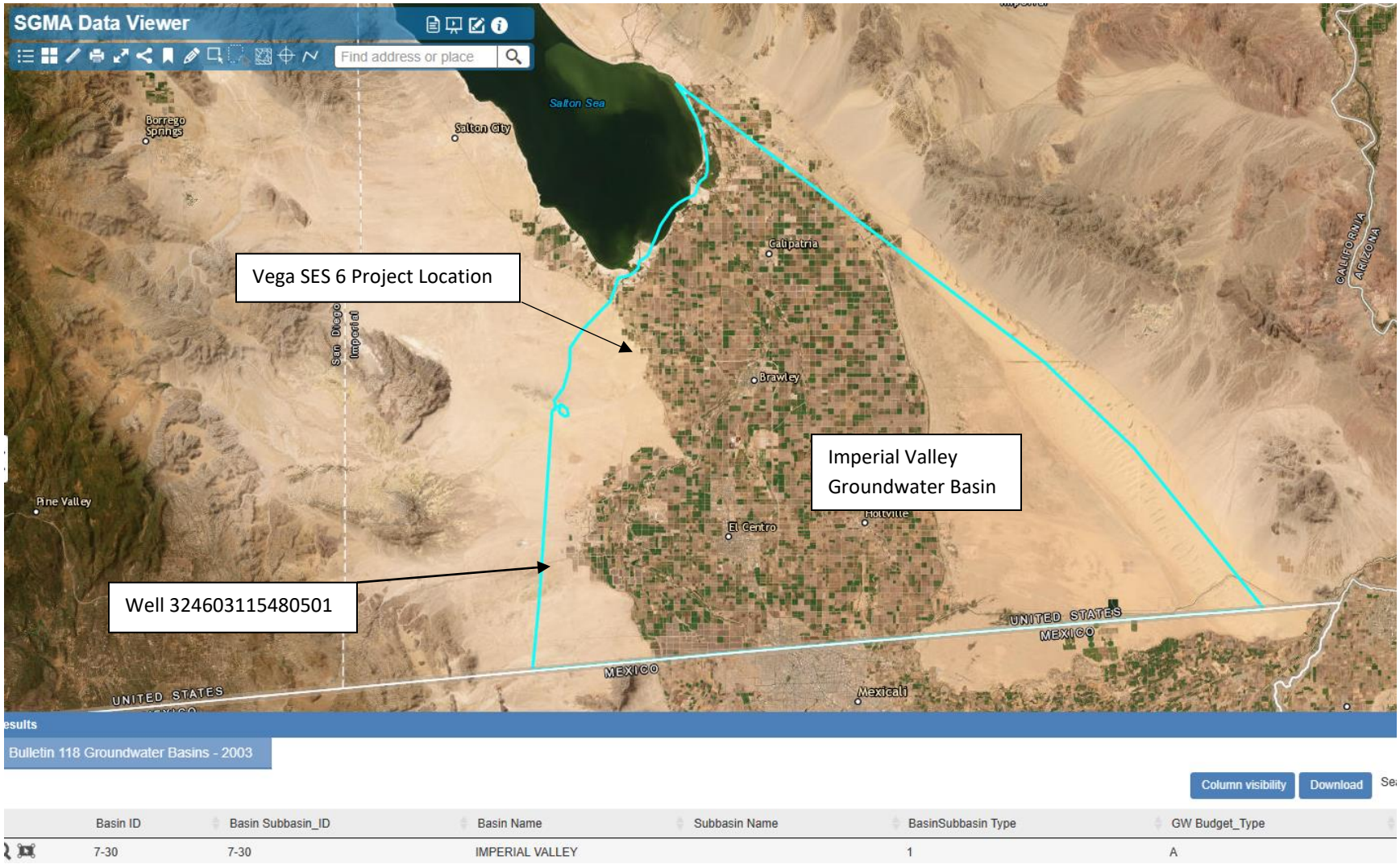
Overall conditions within the groundwater basin are described in Section 4.1. Groundwater recharge and available supply are discussed in Section 4.2. Groundwater level trends and the status of the basin relative to the Sustainable Groundwater Management Act of 2014 (SGMA) is provided in Section 4.3, as required by SB 1262.

4.1 Groundwater Basin

The Project is located within the northwestern part of the Imperial Valley Groundwater Basin (Basin), designated as basin number 7-030, as defined by DWR (2023a), as indicated on Figure 4. The Basin is bounded on the east by the Sand Hills and on the west by the igneous and metamorphic rocks of the Fish Creek and Coyote Mountains (DWR, 2003). The northern boundary is the Salton Sea while the southern boundary is the international border with Mexico. The groundwater basin has an area of approximately 1,200,000 acres, or 1,870 square miles (DWR, 2003). The Basin has not been adjudicated (DWR, 2023b). Figure 4 shows the groundwater basin boundary and the approximate location of the Project.

Groundwater occurs within two major aquifers, separated at depth by a semi-permeable aquitard that averages 60 feet thick and reaches a maximum thickness of 280 feet. The aquifers consist mostly of alluvial deposits of late Tertiary and Quaternary age that have eroded from the adjacent mountains and filled the valley. The upper aquifer has an average thickness of approximately 200 feet with a maximum thickness of 450 feet. The lower aquifer averages approximately 380 feet thick with a maximum thickness of 1,500 feet. (DWR, 2003)

FIGURE 4. Imperial Valley Groundwater Basin



Source: DWR, 2023a

4.2 Groundwater Supply and Recharge

Much of the Basin area consists of irrigated agriculture, as can be seen on Figure 4. Surface water from the Colorado River provides almost all of the irrigation and municipal water supply, through IID. Ninety-seven percent of IID's 3.1-million-acre-foot entitlement is used to irrigate almost 500,000 acres of farmland (IID, 2023c). The remaining three percent of IID's allocation supplies municipal, commercial, industrial, and rural domestic needs. DWR (2023b) reports that the population in the Imperial Valley Groundwater Basin in 2010 was approximately 164,037 persons and that the population is expected to increase 30 percent by 2030. Growth in municipal areas often occurs on land that was previously irrigated. Due to the very small percentage of water demand that is due to municipal and domestic uses, and the offset of previous irrigation use, the projected future population growth is not expected to result in a measurable change in water demand in the Basin.

The total groundwater storage capacity of the Basin is estimated to be as much as 14,000,000 acre-feet (DWR, 2003). However, much of the groundwater is not usable for agricultural and municipal purposes due to high levels of dissolved solids (see additional discussion below). As a result, there are only seven public water supply wells and 57 total wells present within the 1,200,000-acre Basin (DWR, 2023b).

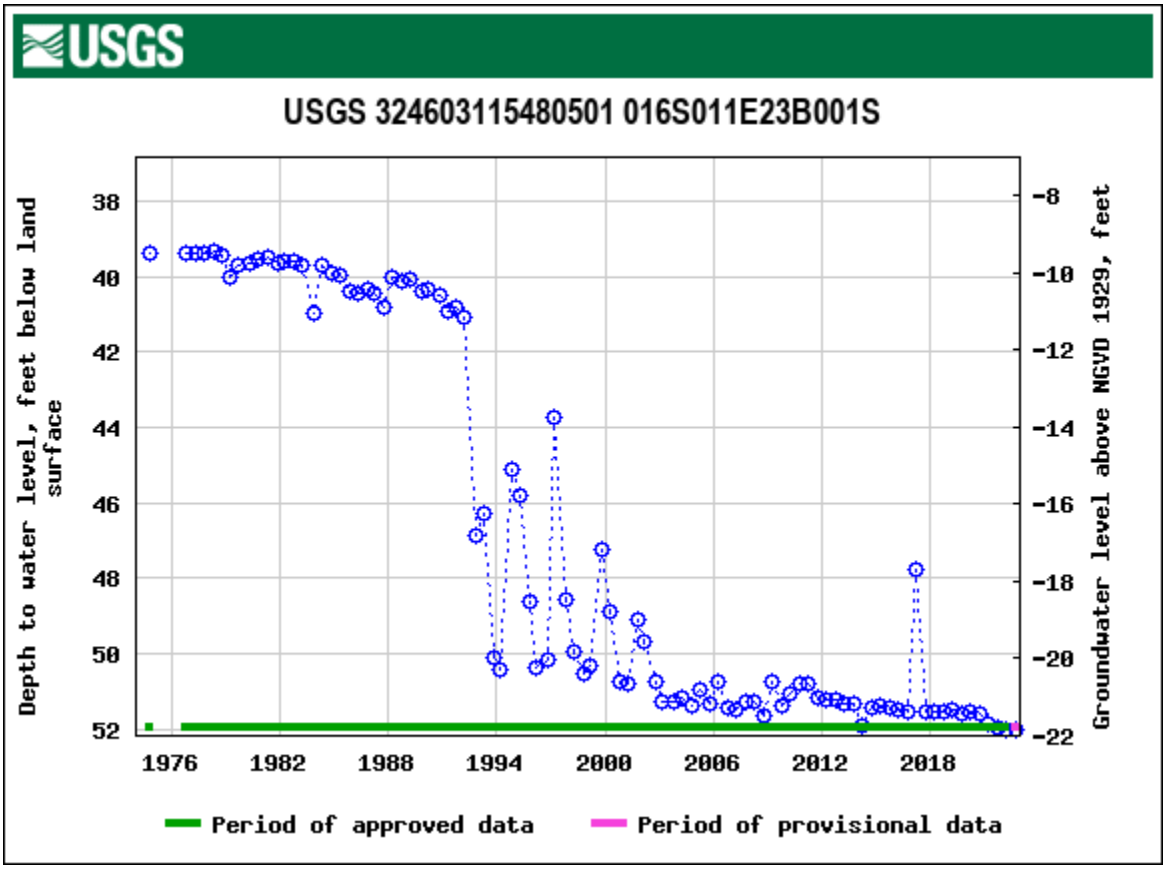
The average annual rainfall is very low, as discussed further in Section 6.0 below, and typically does not provide a sufficient quantity of moisture to percolate deep into the alluvial sediments. As a result, recharge of groundwater occurs primarily due to deep percolation of applied irrigation water and lateral inflow from adjacent groundwater basins. The average annual increase in groundwater storage in the Basin is estimated to be 17,000 acre-feet per year (DWR, 2003).

DWR's SGMA Data Viewer website (DWR, 2023a) and the USGS's National Water Information System mapping application (https://maps.waterdata.usgs.gov/mapper/index.html) indicate that there are approximately 15 active groundwater monitoring locations within the Basin at the time this report was prepared. However, all but one of the wells are located in the eastern part of the Basin. The nearest active monitoring well to the Project site is approximately 18 miles to the southwest of the Project site, near Interstate Highway 8 at the western edge of the Basin (see Figure 4). The well has USGS identification number 324603115480501, which identifies the latitude and longitude of the well (i.e., 32°46'03" latitude, -115°48'05" longitude), and California state well number 016S011E23B001, which indicates the township, range, and quarter-quarter section (i.e., northwest quarter of the northeast quarter of section 23 in township 16S, range 11E, San Bernardino Base and Meridian). The ground surface elevation at the well location is reported to be 30

feet above mean sea level (ft msl – NGVD29 datum) while the well depth is reported to be 114.7 feet below ground surface (ft bgs) (USGS, 2023).

Figure 5 is a hydrograph from USGS (2023) showing the groundwater level and groundwater elevation measured since 1974 in Well 324603115480501. Data have been measured from October 1974 to October 2022. As indicated on Figure 5, from 1974 to 1992, the depth to groundwater changed from approximately 39.5 ft bgs to 41 ft bgs. Between 1992 and 1994, the groundwater level decreased relatively rapidly from 41 ft bgs to about 50 ft bgs. Since 1992, the groundwater level has decreased from 50 ft bgs to 52 ft bgs. From 1974 to 1992, the rate of change in the groundwater level was approximately 0.08 foot per year, while from 1994 to 2022 the rate of change in the groundwater level was approximately 0.7 foot per year. Between 1993 and 2002, the data indicate that fluctuations occurred seasonally, potentially as a result of pumping. The overall decline of 12.5 feet from 1974 to 2022 represents a reduction in the available water column in the well of approximately 17 percent.

FIGURE 5. USGS Groundwater Level Hydrograph



As noted above, much of the groundwater in the Basin is not usable for agricultural and municipal purposes due to high levels of total dissolved solids (TDS). DWR (2003) reports that the TDS level may range from approximately 500 milligrams per liter (mg/L,

equivalent to parts per million, or ppm) to over 7,000 mg/L. Five public supply wells in the Basin reportedly have TDS concentrations ranging from 662 mg/L to 800 mg/L (DWR, 2003). The secondary maximum contaminant level (MCL) for TDS in drinking water ranges from 500 mg/L to 1,000 mg/L.

Water quality samples have been collected from Well 324603115480501 by the USGS (2023). Water quality samples were collected and analyzed in March 1964 and December 1974. Table 1 shows the water quality results from the March 1964 sample. Only the water temperature (24.0 degrees C) and the specific conductance (16,700 microsiemens per centimeter) were reported for the December 1974 sample. The groundwater sampled from the monitoring well has an alkaline pH and very high specific conductance, TDS, sodium + potassium, chloride and sulfate. The TDS level is appreciably greater than the high end of the range of the secondary MCL. The sodium and sulfate concentrations are also much greater than their respective secondary MCL of 250 mg/L. The water quality reported from Well 324603115480501 is much more saline than in many other parts of the Basin, based on the information reported by DWR (2003) and renders the groundwater unusable for potable or agricultural uses. The existing water quality is suitable for use for construction purposes but may require treatment for use in washing the photovoltaic panels. Without treatment, scaling and spotting could occur on the panel surfaces.

TABLE 1. USGS Water Quality Data (March 19, 1964)

Parameter	Units	Result
Specific Conductance	MicroSiemens per centimeter at 25° C	17,800
pH	Standard units	8.2
Bicarbonate Alkalinity	mg/L as calcium carbonate ($CaCO_3$)	184
Hardness	mg/L as $CaCO_3$	760
Non-carbonate hardness	mg/L as $CaCO_3$	610
Calcium	mg/L	148
Magnesium	mg/L	96
Sodium + Potassium	mg/L	4,200
Chloride	mg/L	4,380
Sulfate	mg/L	3,300
Silica	mg/L as silica dioxide (SiO_2)	3
Dissolved Solids	mg/L	12,200

Source: USGS, 2023

4.3 Groundwater Sustainability

A series of three bills passed by the California legislature were signed by Governor Brown on September 16, 2014. These three bills, Assembly Bill (AB) 1739, SB 1168, and SB 1319, together comprise the Sustainable Groundwater Management Act of 2014 (SGMA). SGMA provides a structure under which local agencies are to develop a sustainable groundwater management program. SGMA focuses on basins or subbasins designated by DWR as high or medium priority basins, and those with critical conditions of overdraft.

According to DWR (2023b), the Basin is a very low priority basin. DWR has not identified the Basin as overdrafted nor has it projected that the basin will become overdrafted if present management conditions continue (DWR, 2021 and 2023b). Thus, the Basin is not subject to the current requirements of SGMA, including the formation of a groundwater sustainability agency (GSA) and preparation of a groundwater sustainability plan (GSP).

5.0 PROJECT WATER DEMAND

Water demand varies depending on the Project phase. During construction, water will be needed for dust control and soil conditioning during installation of the photovoltaic panels, battery storage units, and related infrastructure. During the operational phase of the Project, water will be needed for routine maintenance activities, which primarily consists of washing the photovoltaic panels to maintain generation efficiency.

Table 2. Project Water Demand

Site	Area (acres)	Output (megawatts)	Construction Water (acre-feet)	Operational Water (acre-feet per year)
Vega SES 6	320	80	170	8

Table 2 provides a summary of Project parameters that affect water demand and the estimated water needs for construction and operation. The construction water demand is primarily for dust control. Thus, the water needs are proportional to the size of the disturbed area and the local climate. The construction water demand of the Project is estimated to be 160 acre-feet, with an additional 10 acre-feet required for dust control on offsite access roads that are not paved. Thus, as indicated in Table 2, the full construction water requirements are 170 acre-feet. Construction is anticipated to require 12 to 18 months to complete. Thus, the monthly water demand during that period may range from 9.4 acre-feet to 14.2 acre-feet, on average.

The operational water demand for panel washing and other maintenance needs is based primarily on the number of panels, which relates to the energy production or

output, in megawatts. The operational water demand is anticipated to be 8 acre-feet per year. Maintenance activities are anticipated to be conducted up to twice a year over a one-to-two-week period each event, so the maintenance water demand is intermittent and not spread throughout the year. The operational water demand will occur throughout the life of the Project.

6.0 DRY YEAR SUPPLY

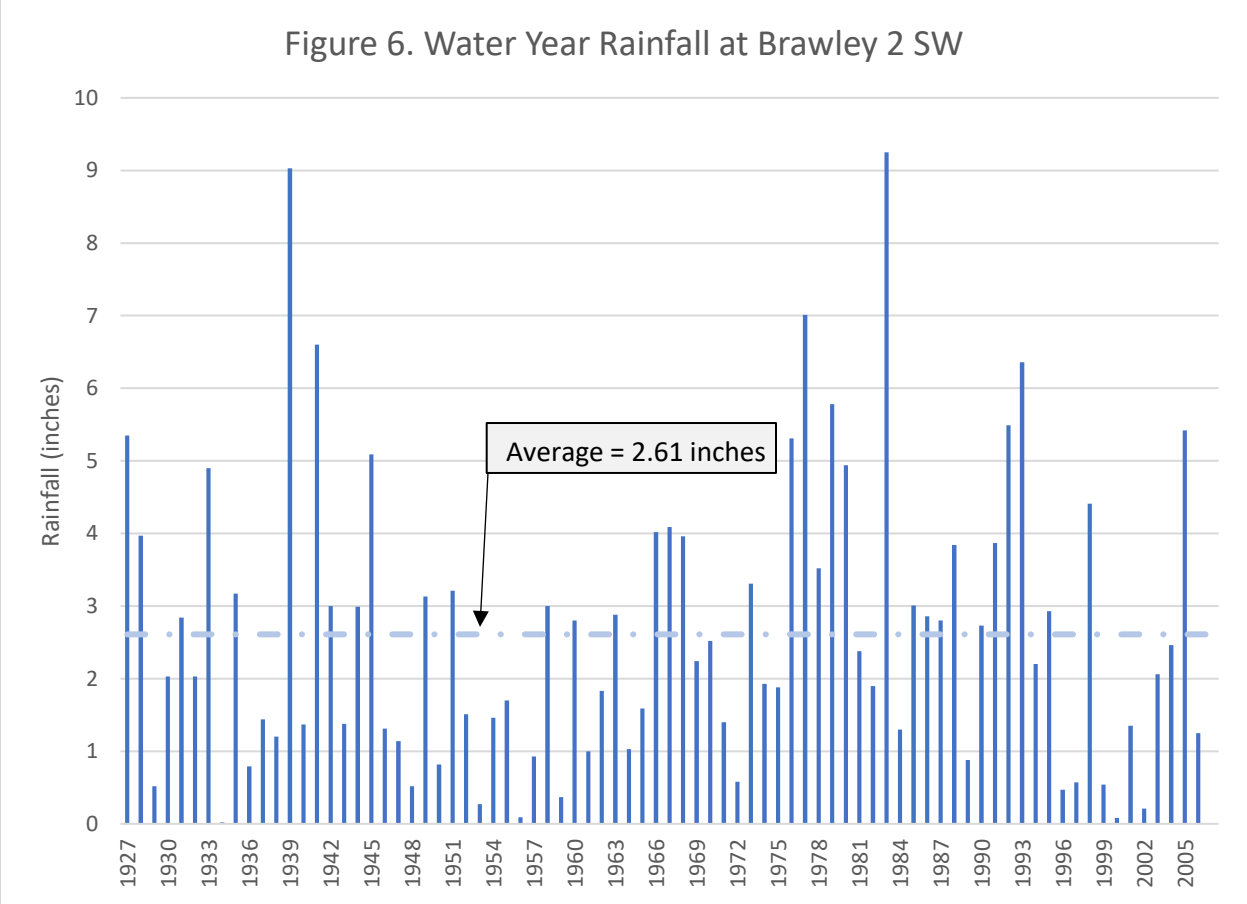
The volume and sustainability of dry-year water supply for a project in California is typically addressed by comparing annual rainfall with changes in groundwater levels in the Basin. This comparison is made for a normal or average water year[1], for single dry year, and for multiple dry water years. For this Project, local rainfall data were obtained from the Western Region Climate Center (WRCC, 2023) for the Brawley 2 SW meteorological station in Brawley, California, located approximately 15 miles east of the Project site (see Figure 1).

Figure 6 shows the annual water year rainfall for the Brawley 2 SW station from 1927 through 2007. The average water year rainfall during this period is 2.61 inches. The driest year was 2007, when no precipitation was recorded. The driest year with recorded rainfall was 1934, with only 0.2 inch of rainfall reported. The wettest year was 1983, when 9.25 inches of rain were measured. As indicated on Figure 6, a relatively wet period occurred from 1976 to 1986, with 14 of 18 water years exceeding the average annual rainfall. In comparison, the period from 1996 to 2012 was relatively dry, with 10 of 12 water years having below normal rainfall.

The historic rainfall data on Figure 6 can be compared with the groundwater levels shown on Figure 5 to assess the effects of wet and dry periods on groundwater supply in the Basin. The wettest year recorded, 1983, and the relatively wet period from 1976 to 1986, correspond to a period when groundwater levels were consistently declining. During the dry period from 1996 to 2016, groundwater levels were also declining, but at a rate that was slightly less than during the wet period from 1976 to 1986. The relatively large decrease in groundwater levels between 1992 and 1994 corresponds to a period with above-normal rainfall. Thus, the available groundwater level and rainfall data do not indicate any relationship between wet, normal, single dry year, or multiple dry years and available groundwater supply. As noted above in Section 4.2, recharge of groundwater

[1] In California, a water year is defined as the period from October 1 of a calendar year through September 30 of the subsequent calendar year. A water year is designated by the year in which it ends. For example, the period from October 1, 2006 through September 30, 2007 is referred to as the 2007 water year. Due to the nature of weather patterns in the state, a water year better represents hydrologic conditions related to wet and dry periods than does a calendar year.

occurs primarily due to deep percolation of applied irrigation water and lateral inflow from adjacent groundwater basins (DWR, 2003).



The total groundwater storage capacity of the Basin is estimated to be 14,000,000 acre-feet and the average annual increase in groundwater storage is estimated to be 17,000 acre-feet per year (DWR, 2003), as described in Section 4.2, above. While the groundwater elevation data shown on Figure 5 indicate that there may have been a loss of groundwater in storage of up to 17 percent, the construction water demand of 170 acre-feet and the annual operational water needs of 8 acre-feet are miniscule (0.0015 percent and 0.00008 percent, respectively) compared to the available groundwater in storage after accounting for the potential 17 percent reduction indicated from Figure 5. Overall, there is adequate water available to supply the Project water needs during single dry year and multiple dry year periods.

7.0 FINDINGS AND DISCUSSION

This WSA has been prepared in accordance with SB 610 and SB 1262 to support the CEQA environmental review for the proposed Project and provides an assessment of water supply adequacy for the Project in accordance with Water Code Sections 10910 through 10915. As stated in Section 1.0, the purpose of the assessment is to determine if available water supplies are sufficient to serve the demand generated by the Project, as well as the reasonably foreseeable demand in the region over the next 20 years under average normal year, single dry year, and multiple dry year conditions. As noted in Section 4.2, above, while groundwater levels in the Basin have been declining, the potential cumulative effect on the volume of groundwater storage in the western part of the Basin may be in the range of 17 percent over the past 60 years. While the population is anticipated to increase over the next several decades, any related increase in water demand is anticipated to be met using surface water from IID because the groundwater quality is generally not adequate for municipal and agricultural uses. Therefore, the Basin has adequate groundwater resources for current and anticipated future water needs.

The water demand for the proposed Project will consist of water needed during construction and water needed for maintenance once the Project is operational. The construction water demand is anticipated to be 170 acre-feet over 12 to 18 months, primarily for dust control. The operational demand is anticipated to be 8 acre-feet per year for panel washing and other maintenance activities. The operational demand will exist for the life of the Project, which is anticipated to be 25 to 30 years.

The construction water demand is 1.0 percent of the average annual increase in groundwater storage of 17,000 acre-feet per year and 0.0015 percent of the volume of groundwater in storage in the Basin (accounting for the groundwater level decline from 1974 to 2022). Furthermore, the construction water needs are short-term and temporary. This temporary water use is not anticipated to cause persistent and long-term lowering of groundwater levels. Therefore, the construction water demand will not cause or contribute to overdraft, exhaustion of water supplies, lowering of groundwater levels to depths that would be uneconomic for pumping, land subsidence, or significant alteration of groundwater quality.

The annual operational water needs are equivalent to 0.05 percent of the average annual increase in groundwater storage of 17,000 acre-feet per year and 0.00008 percent of the volume of groundwater in storage in the Basin (accounting for the groundwater level decline from 1974 to 2022). Therefore, the long-term operation and maintenance of the Project would not have any measurable effect or impact on groundwater resources in the Basin.

Based on the analysis presented in this WSA, there will be sufficient water available for existing and anticipated future water demands in the Basin and the Project water demand during normal, single dry year, and multiple dry year periods for the life of the Project, which is expected to be greater than 20 years.

8.0 DOCUMENTS CONSIDERED AND REFERENCES CITED

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