

**DOCKET**

**09-AFC-6**

DATE JAN 18 2010

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# **Attachment G**

## **Water Supply Assessment**

Palen Solar Power Project  
Riverside County, California



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## List of Acronyms

AFY	acre-feet per year
bgs	below ground surface
BLM	Bureau of Land Management
CEQA	California Environmental Quality Act
CVGWB	Chuckwalla Valley Groundwater Basin
DWR	Department of Water Resources
I-10	U.S. Interstate 10
msl	mean sea level
MW	megawatt
NEPA	National Environmental Protection Act
PSPP	Palen Solar Plant Project
SB	Senate Bill
UWMP	Urban Water Management Plan
WSA	Water supply Assessment

## **1.0 Objective of Report**

The objective of this report is to provide an assessment equivalent to a Water supply Assessment (WSA) that would be required in accordance with Senate Bills (SB) 610/221 (2001). The assessment must include an evaluation for single dry year and multiple dry years (three consecutive dry years) drought scenarios for the life of the Palen Solar Power Project (PSPP).

The information presented here was extracted from the Application for Certification--Volume 1, dated September 2009 by AECOM and submitted to the California Energy Commission.

## 2.0 Senate Bill 610

### 2.1 Does SB 610 Apply?

Appendix A of this report contains excerpts from the Guidebook for Implementation of SB 610 and SB 221 of 2001. As stated on the cover page of the Guidebook, the purpose is to assist water suppliers, cities, and counties in integrating water and land use planning. The Guidebook was prepared by the California Department of Water Resources (DWR) in October 2003.

The Guidebook excerpts include:

- Title page;
- SB 610 Flowchart; and,
- SB 221 Flowchart.

From the SB 610 Flowchart, PSPP is subject to SB 610 because of the following

- PSPP is subject to the California Environmental Quality Act (CEQA) and the federal National Environmental Protection Act (NEPA). NEPA is needed because the Project will be constructed on federal Bureau of Land Management (BLM) land.
- PSPP is a project as defined in California Water Code Section 10912.

Specifically, the Project is subject to the provisions of SB 610 because it:

- Is an industrial project covering more than 40 acres;
- Will demand an amount of water equivalent to, or greater than, the amount of water required by a 500-unit dwelling project.

The Guidebook provides guidance on how much water a 500-unit dwelling project can be expected to use in determining whether a project would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-unit dwelling project, it is generally acknowledged that one acre-foot of water can serve two to three households on an annual basis; therefore, one dwelling unit typically consumes 0.3 to 0.5 acre-feet of water per year depending.

PSPP will have two 250-megawatt (MW) solar power plants on the site. Water demand is projected to be 150 acre-feet per year (AFY) per plant or a total of 300 AFY. This quantity of water is equivalent to that consumed by 600 to 1,000 housing units, which is more than that consumed by 500 homes. Therefore, PSPP's water demand will exceed that of a subdivision as defined in California Government Code Section 66473.7(a)(1) and falls under SB 610.<sup>1</sup>

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<sup>1</sup> A Subdivision is a proposed residential development of more than 500 dwelling units, except that for a public water system that has fewer than 5,000 service connections. "Subdivision" means any proposed residential development that would account for an increase of 10 percent or more in the number of public water system's existing service connections.

## **2.2 SB 221 Not Applicable**

Based on the SB 221 Flowchart, it appears that the proposed PSPP is not subject to SB 221 because the PSPP is not a "subdivision" as defined by California Government Code Section 66473.7(a)(1):

## **2.3 SB 610 Requirements**

For an SB 610 compliant WSA a number of questions must be addressed. These questions are summarized in the SB 610 Flowchart, a copy of which is provided in Appendix A. Issues to be addressed, as shown on the Flowchart are:

1. Is there an applicable Urban Water Management Plan (UWMP)?
2. Primary question to be addressed in a WSA is whether the projected supply for the next 20 years -- based on normal, single dry, and multiple dry years -- will meet the demand projected for the Project plus existing and planned future use, including agricultural and manufacturing uses.
3. Specific issues to be addressed in a WSA are:
  - a. Quantify water received in prior years from existing:
    1. Water supply entitlements;
    2. Water rights; and,
    3. Water service contracts held by water supplier.

These must be demonstrated by:

1. Written contracts;
  2. Capital outlay/financing program for delivery adopted by water supplier;
  3. Federal/State/Local permits for delivery infrastructure; and
  4. Regulatory approvals required to convey or delivery water.
- b. If no water was received in prior years by water supplier, identify other water suppliers or water service contract holders that receive supply or have rights to the same source identified by the water supplier or agency.
  - c. If the water sources for the project include groundwater, factors and specifications related to groundwater source must be included.
4. Conclusion as to whether or not there is sufficient water available for the project.

### 3.0 Project Overview

#### 3.1 Location of PSPP

The PSPP is located on BLM land<sup>2</sup> approximately 0.5 miles north of U.S. Interstate-10 (I-10) and approximately 10 miles east of Desert Center, in an unincorporated area of eastern Riverside County, California (Figure 1). The nearest community is Desert Center with a population of 125. The nearest towns are Blythe about 40 miles to the east and Coachella and Indio which are about 50 miles to the west along I-10. The closest public water purveyors are in Desert Center and Blythe.

There is no UWMP covering the Project site. Nor is there a public water purveyor that can, from a practical standpoint, provide PSPP with water. The only practical water source is the underlying Chuckwalla Valley Groundwater Basin (CVGWB). Therefore, PSPP's water needs will be met by on-site groundwater wells.

The water system will be designed and constructed to solely meet the needs of PSPP. The water system will be classified by the California Department of Public Health as a non-community, non-transient water system because PSPP's water system will provide water to on-site employees as well as for the power production process. Under this classification, the requirements of the federal safe Drinking Water Act and California Title 22 for potable water must be met.

#### 3.2 PSPP Water Demands

The total annual water demand for the PSPP are listed in the Table below.

**Projected Annual Water Demands**

<b>Water Use</b>	<b>Annual Demand (AFY)</b>
Power Cycle Makeup	77
Mirror Washing	114
Potable	6
Dust Suppression	24
Ancillary Equipment Heat Rejection	82
<b>Total</b>	<b>303</b>

It should be noted that power cycle (boiler feedwater) will be recycled. The power cycle makeup water is needed to make up for unavoidable boiler feedwater losses that are typical of steam-powered power plants.

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<sup>2</sup> An application has been filed with the BLM for a right-of-way grant of approximately 5,200 acres.

### **3.3 Groundwater**

We are not using any water for power plant cooling and therefore need not comply with 75-58. The most practical water supply option for PSPP is groundwater pumped from the underlying CVGWB since there is no industrial water purveyor in the area, nor are there other water sources such as Reclaimed Water or surface waters that would not need an entitlement.

Following is a discussion of the CVGWB, which addresses the issues/questions raised in SB 610 and amplified in the Guidebook prepared by the DWR..

#### **3.3.1 Groundwater Management Plan**

There is no public water system with capacity to served PSPP. Nor is there is a groundwater basin management plan or UWMP covering PSPP. The CVGWB is not adjudicated

#### **3.3.2 Description of CVGWB**

PSPP lies within the Colorado River Hydrologic Basin Region that covers about 20,000 square miles in southeastern California. The CVGWB covers about 940 square miles (605,000 acres) within the Basin.

CVGWB consists primarily of alluvial deposits overlaying bedrock. At PSPP, wells extended to a depth of 1,000 feet below ground surface (bgs) and have a saturated thickness of about 800 feet or less (Figure 2). In the central part of the CVGWB, the alluvial deposits are about 1,200 feet thick increasing to about 2,000 feet.

Groundwater generally flows from north and west to the southeast toward the Colorado River. Groundwater from the Pinto Valley and Orocopia Valley Groundwater Basins flows into the CVGWB (Figure 1).

Groundwater depth at PSPP was measured at about 180 feet in September 2009. The depth to bedrock at PSPP is not known due to the limited depth of existing wells and boring log information (Figure 2). Saturated thickness is about 800 feet or less at PSPP.

Figure 3 shows hydrographs for several wells in the vicinity of PSPP. As noted on the figure, the hydrographs were extracted from a DWR study. In general, the hydrographs illustrate that the depth to groundwater has not change appreciably--slight declines in some wells, slight increases in other wells--over the last 40 years of so. The greatest declines were in the vicinity of Desert Center, about 10 miles west of PSPP, and were due to agricultural pumping. Agricultural pumping has declined in recent years.

#### **3.3.3 Potential CVGWB Over-drafted**

Including PSPP, groundwater extractions from CVGWB will include:

- 6,389 AFY for agriculture and aquaculture;
- 3,351 AFY for Desert Center, Lake Tamarisk, and Chuckwalla and Ironwood prisons; and,
- 300 AFY for PSPP.

Total well extractions are estimated to be 10,040 AFY.

In addition to groundwater well extractions, there are two other groundwater losses:



- 400 AFY underflow from CVGWB to the Palo Verde Mesa Groundwater Basin to the east; and,
- 1,420 AFY to 2,130 AFY of evaporation of precipitation runoff into Palen Dry Lake.

The 1,420 AFY evaporation loss is based on four inches of evaporation and the 2,130 AFY of evaporation loss is based on six inches of evaporation. These evaporation losses are included because "Mountain Front" runoff will be included in the following recharge calculations.

Total groundwater pumping and evaporation loss from Palen Dry Lake total 11,860 AFY to 12,570 AFY.

Nine solar power plant projects are proposed for the Chuckwalla Valley (**Table 1**). Total installed power production capacity would be almost 4,100 MW if all of the proposed projects are constructed. The total annual water demand for these nine projects is estimated to be about 9,800 AFY including 300 AFY for PSPP. Total groundwater extraction/evaporation losses could eventually reach about 21,360 AFY to 22,070 AFY.

CVGWB recharge comes from:

1. Subsurface flow, which includes:
  - a. 1,000 AFY from Orocopia Groundwater Basin; and
  - b. 2,500 AFY from Pinto Valley Groundwater Basin.
2. Percolation, which includes:
  - a. 639 AFY agricultural irrigation return water;
  - b. 1,672 AFY to 3,343 AFY from precipitation runoff from surrounding mountains; and
  - c. 834 AFY from leach-field return.

Total recharge is estimated to range from 5,745 AFY to 7,415 AFY. The precipitation runoff figures are based on 5 percent and 10 percent of precipitation runoff percolating to the groundwater. Based on these values, there would be an overdraft ranging from 4,444 AFY to 6,285 AFY including PSPP. If all nine of the proposed solar power plant projects are constructed, overdraft could range from 13,944 AFY to 15,785 AFY. However, as noted previously, DWR estimates that there are 15,000,000 AF of recoverable water in the CVGWB. It would take about between 950 and 1,075 years to "mine" 15,000,000 AF of the recoverable stored water from CVGWB. If agricultural production ceased, the potential overdraft would be reduced by about 6,389 AFY. This could extend the "life" of the aquifer to 3,300 to 3,400 years.

In September 2009, the depth to groundwater in an existing well at the PSPP site was measured at 180 bgs. The ground surface elevation at the well is about 595 feet above msl. The elevation of the groundwater surface at the well was, therefore, 415 feet above msl or about 175 feet above the

## 4.0 CONCLUSION

If all nine proposed solar power plants are constructed, CVGWB could be over-drafted by 13,944 AFY to 15,785 AFY. Given the estimated 15,000,000AF of recoverable water in the basin, there is sufficient groundwater to meet these demands for approximately 950 to 1,075 years. .

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**Table 1**  
**Projected Annual Water Demands**

**Table 1 Cumulative Impacts Assessment  
Estimate of Basin-wide Water Level Change**

PROJECT <sup>1</sup>	PROPONENT	BLM SERIAL ID	TECHNOLOGY	SOURCE	USE	WATER USE - SOLAR and OTHER RENEWABLE PROJECTS (AFY)														COMMENTS			
						2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023		2043		
Chuckwalla Solar I	Chuckwalla Solar I LLC	CA 48808	Photovoltaic (200MW)	Though not stated, assumed to be Groundwater	Construction	--	20	20	10	--	--	--	--	--	--	--	--	--	--	--	--	No water use amount provided in POD. Water use follows enXco 5 and scale-up from 100MW to a 200MW PV project.	
					Operational	--	--	5	7	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Desert Lily Soleil	enXco 5	CA 49492	Photovoltaic (100MW)	Though not stated, assumed to be Groundwater	Construction	--	--	10	10	--	--	--	--	--	--	--	--	--	--	--	--		
					Operational	--	--	--	--	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Desert Lily	Solel	CA 49494	Parabolic Trough (500MW)	Groundwater	Construction	--	--	1,250	1,250	--	--	--	--	--	--	--	--	--	--	--	--		
					Operational	--	--	--	--	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Desert Sunlight Solar Farm	Optisolar (acquired by First Solar)	CA 48649	Photovoltaic (550MW)	Though not stated, assumed to be Groundwater	Construction	--	9	9	9	--	--	--	--	--	--	--	--	--	--	--	--	No set time frame for construction provided in POD. Assume construction start coincident with Palen start.	
					Operational	--	--	--	--	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Eagle Mountain Pump Storage	Eagle Crest Energy Company, LLC	PAD/FERC (January 2009)	Pump - Storage (1300MW)	Groundwater	Construction	--	--	--	--	8,066	8,066	8,066	8,066	--	--	--	--	--	--	--	--		
					Operational	--	--	--	--	--	--	--	--	2,380	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763
Genesis Solar Energy	Genesis Solar LLC	CA 48880	Parabolic Trough (250MW)	Groundwater	Construction	--	1,250	1,250	--	--	--	--	--	--	--	--	--	--	--	--	--	POD assumes December 2010 license date. POD proposes 24 month construction period. No water amount specified. Assumed same as Beacon Solar (Kern County).	
					Operational	--	--	--	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Mule Mountain Solar Project	Bullfrog Green Energy, LLC	CA 49097	Photovoltaic (500MW)	Groundwater or water trucked in for mostly mirror washing	Construction	--	20	20	20	--	--	--	--	--	--	--	--	--	--	--	--	Construction supply not specified in the POD. Assumed to be same as other proposed PV projects. Three phases - operational water use estimated at 6,000 gal/mo/phase.	
					Operational	--	--	0.25	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Mule Mountain Soleil	enXco 2	CA 49488	Photovoltaic (200MW)	Though not stated, assumed to be Groundwater	Construction	--	--	20	20	--	--	--	--	--	--	--	--	--	--	--	--	No water use amount provided in POD. Water use follows enXco 5 and scale-up from 100MW to a 200MW PV project.	
					Operational	--	--	--	--	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Palen Solar Power	Solar Millennium LLC	CA 48810	Parabolic Trough (484MW)	Groundwater	Construction	--	480	480	480	--	--	--	--	--	--	--	--	--	--	--	--		
					Operational	--	--	--	--	303	303	303	303	303	303	303	303	303	303	303	303	303	303
<b>TOTAL WATER USE - RENEWABLE PROJECTS (AFY)<sup>2</sup></b>						0	1,779	3,064	4,307	15,899	15,899	15,899	15,899	10,213	9,596	9,596	9,596	9,596	9,596	9,596	9,596		
<b>DISCHARGE FROM OTHER SOURCES (AFY)<sup>3</sup></b>						9,806	9,806	9,806	9,806	9,806	9,806	9,806	9,806	9,806	9,806	9,806	9,806	9,806	9,806	9,806	9,806	9,806	

**Table 1 Cumulative Impacts Assessment  
Estimate of Basin-wide Water Level Change**

PROJECT <sup>1</sup>	PROPONENT	BLM SERIAL ID	TECHNOLOGY	SOURCE	USE	WATER USE - SOLAR and OTHER RENEWABLE PROJECTS (AFY)															COMMENTS			
						2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2043				
<b>RECHARGE (AFY)<sup>4</sup></b>						10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	10,458	
<b>YEARLY BALANCE (AFY)<sup>5</sup></b>						652	-1,127	-2,412	-3,655	-15,247	-15,247	-15,247	-15,247	-9,561	-8,944	-8,944	-8,944	-8,944	-8,944	-8,944	-8,944	-8,944	-8,944	
<b>CUMULATIVE CHANGE (AFY)<sup>6</sup></b>						652	-475	-2,887	-6,542	-21,788	-37,035	-52,281	-67,528	-77,088	-86,032	-94,975	-	-	-	-	-	-	-	-300,676
<b>BASIN-WIDE CHANGE IN WATER LEVEL (assuming a storage coefficient of 0.20)(inches)</b>						0.1	-0.05	-0.3	-0.6	-2.2	-3.7	-5.2	-6.7	-7.6	-8.5	-9.4	-10.3	-11.2	-12.1	-12.1	-12.1	-12.1	-29.8	
<b>BASIN-WIDE CHANGE IN WATER LEVEL (assuming a storage coefficient of 0.05)(inches)</b>						0.3	-0.2	-1.1	-2.6	-8.6	-14.7	-20.7	-26.8	-30.6	-34.1	-37.7	-41.2	-44.8	-48.3	-48.3	-48.3	-48.3	-48.3	-119.3

**NOTES**

1 Chuckwalla Solar I (Chuckwalla Solar I LLC) - Plan of Development, Chuckwalla Solar I, February 2009.  
 Desert Lily Soleil (enXco5) - Plan of Development, Desert Lily Soleil Project, October 2008.  
 Desert Lily (Soleil) - Plan of Development, Mojave Solar Park/Desert Lily Project, October 2007.  
 Desert Sunlight Solar Farm (First Solar) - Plan of Development Optisolar, October 2008.  
 Eagle Mountain Pump Storage Project - Estimates provided from the Eagle Mountain Pumped Storage Project No. 13123 - Final License Application, Eagle Crest Energy Company June 2009 (EIS Table 14).  
 Genesis Solar Energy (Genesis Solar LLC) - Plan of Development, Genesis Solar Energy Project, June 2009.  
 Mule Mountain Solar Project (Bullfrog Green Energy, LLC) - Plan of Development, Mule Mountain Solar Project, May 2009  
 Mule Mountain Soleil (enXco2) - Plan of Development, Mule Mountain Soleil Project, enXco February 2009.  
 Palen Solar Power Plant - Estimates provided from the AECOM Water, "Water Wastewater Report - Palen Solar Power Project July 2009 (Appendix L).

2 Sum of projected water use by year for the identified renewable energy projects.

3 Discharge from other sources other than solar or renewable energy projects (see Table 5.17-6). Assumption is that the discharge kept constant over the term of the analysis (30 years).

4 Estimate of recharge from basin water balance provided on Table 5.17-6. Recharge was assumed to be constant over 30 years.

5 Difference between discharge (inclusive of renewable projects and other sources) and recharge.

6 Cumulative difference between recharge and discharge.

7 Change in the regional water level following the equation shown below (Fetter 1988). Negative numbers indicate a decline or reduction in the water level by the amount shown.

**DEFINITIONS**

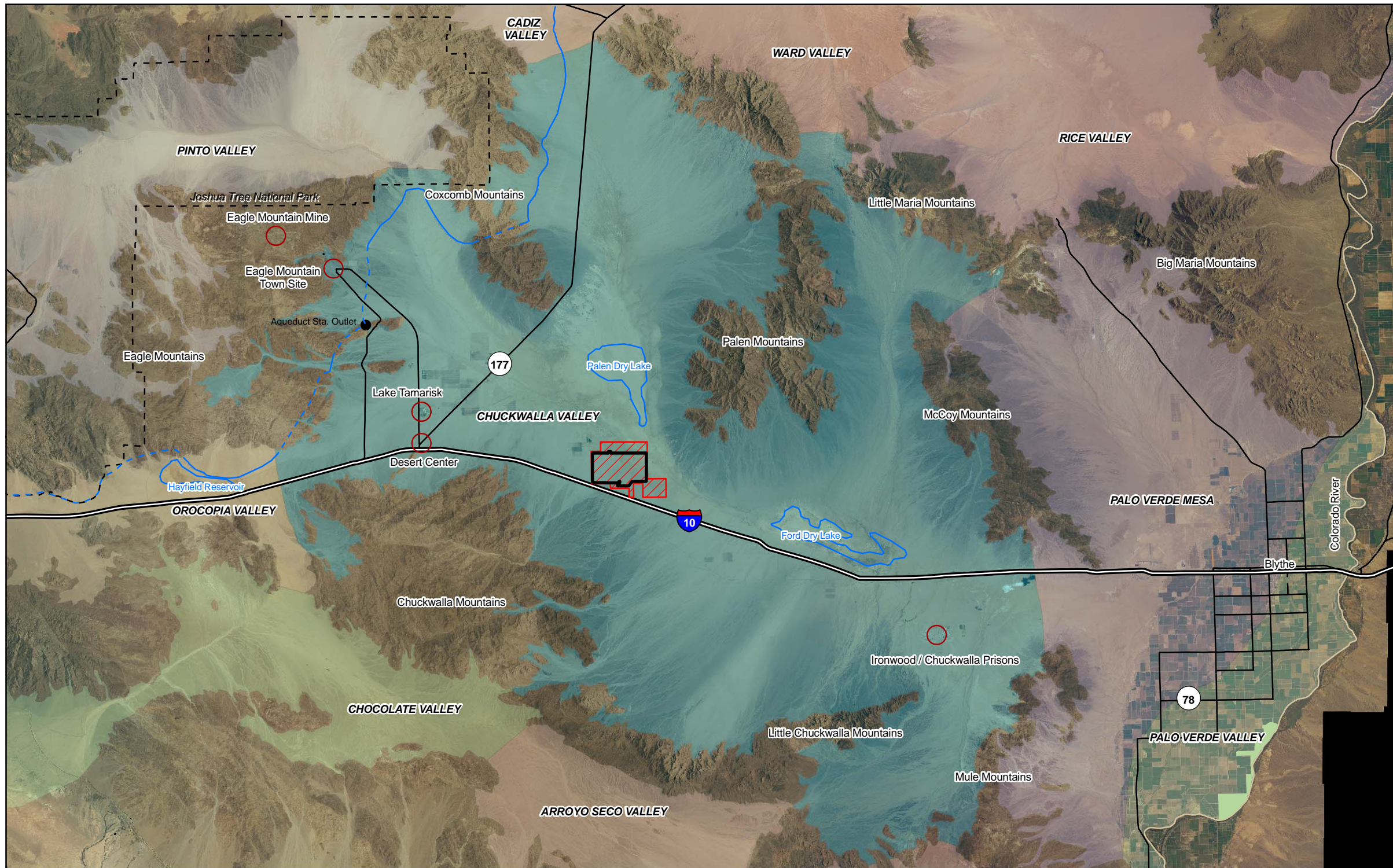
**AFY** = Acre feet per year  
**AF** = Acre feet - (325,829 gallons)  
**FERC** = Federal Energy Regulatory Commission  
**LLC** = Limited Liability Corporation  
**MW** = Megawatts

**ESTIMATE OF BASIN-WIDE WATER LEVEL CHANGE**

**V = A\*S\*dh**  
 V - volume of water released or taken into storage  
 A - area of the aquifer (605,000 acres)  
 S- aquifer storage (assumed to be 0.10)  
 dh - change in water level (inches)

## Figures

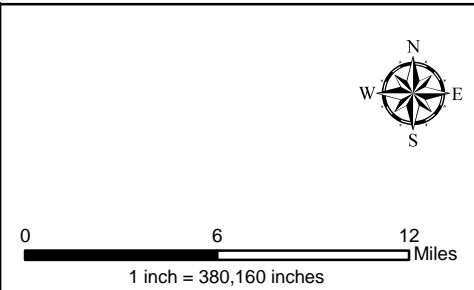




- Legend**
- Project Right-of-Way
  - Facility Footprint
  - Colorado River Aqueduct
  - Colorado River Aqueduct (Dash showing underground interval)
  - Freeway
  - Highway / Major Road

- CHUCKWALLA VALLEY**
- Groundwater Basin
  - Adjacent Basins Shown with Different Colors
  - Geographic/Cultural Area of Interest

Data Sources:  
 Air Photo, California Spatial Information Library, NAIP, 2005 Riverside County  
 Water Basins, Department of Water Resources Website groundwater basin map file B118v3NAD27UTM10.zip

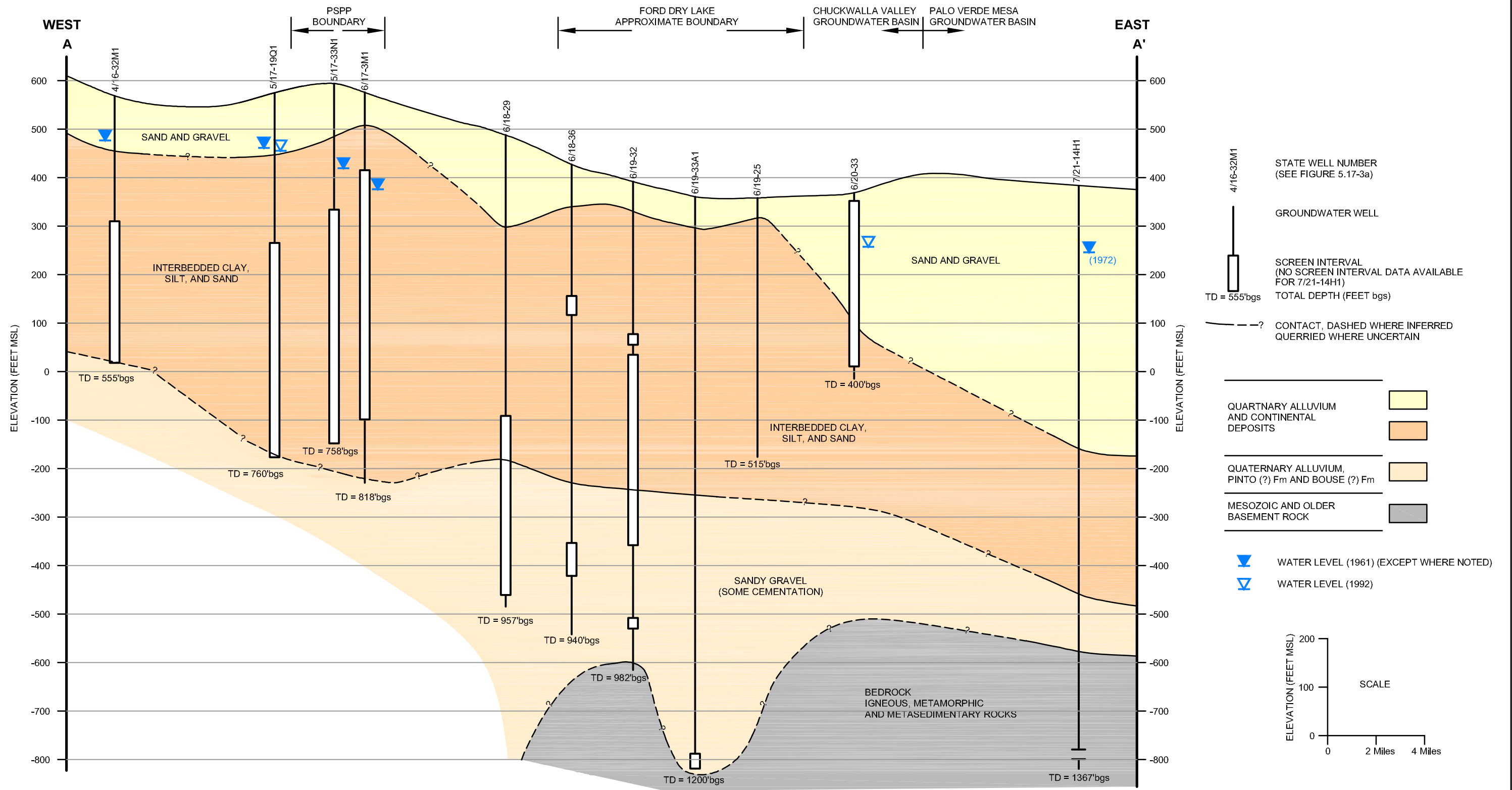


**Palen Solar Power Project**  
**Figure 1**  
**Regional Groundwater Basins**

Project: 60139694  
 Date: January 2010



J:\GIS\Projects\SolarMillennium\Palen\cad\cross section.dwg



**REFERENCE:**  
 Boring logs and well completion data for wells shown provided in Appendix J, of the AFC Submitted in September 2009.  
 Water level data for 1961 and 1992 provided in Appendix J, of the AFC Submitted in September 2009.  
 DWR, 1963, Bulletin No. 91-7, Data on Water Wells and Springs in the Chuckwalla Valley Area.

**Palen Solar Power Project**

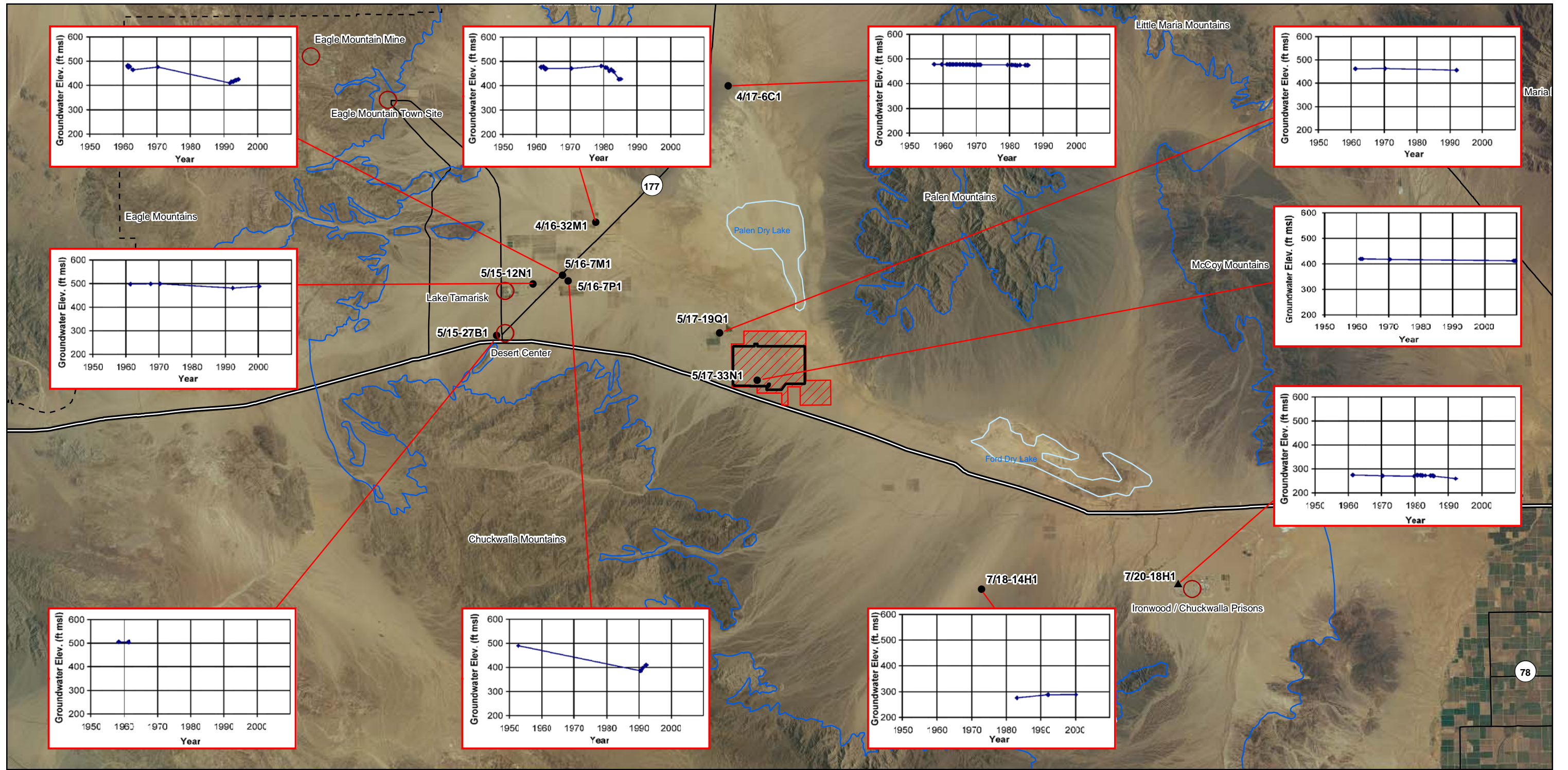
**Figure 2**  
**Cross Section A-A'**

**Solar Millennium**

**AECOM**

Project: 60139694  
 Date: JANUARY 2010



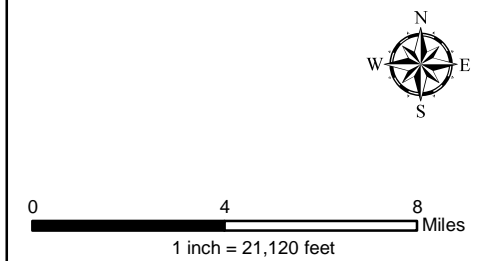


- Legend**
- Project Right-of-Way
  - Facility Footprint
  - Chuckwalla Valley Groundwater Basin Boundary
  - Freeway

- Groundwater Well Location based on Latitude and Longitude in USGS Database
- Groundwater Well Location based on the State Well Number (approximate)
- Geographic/Cultural Area of Interest

Data Sources:  
 Air Photo, California Spatial Information Library, NAIP, 2005 Riverside County

Water Basins, Department of Water Resources Website groundwater basin map file B118v3NAD27UTM10.zip



**Palen Solar Power Project**

**Figure 3  
 Basin Wide Hydrographs**



Project: 60139694  
 Date: January 2010

**Appendix A  
Excerpts from Excerpts  
from SB 610/221 Guidebook  
2001**

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

Prepared by the California Department of Water Resources

# SB 610 Flowchart

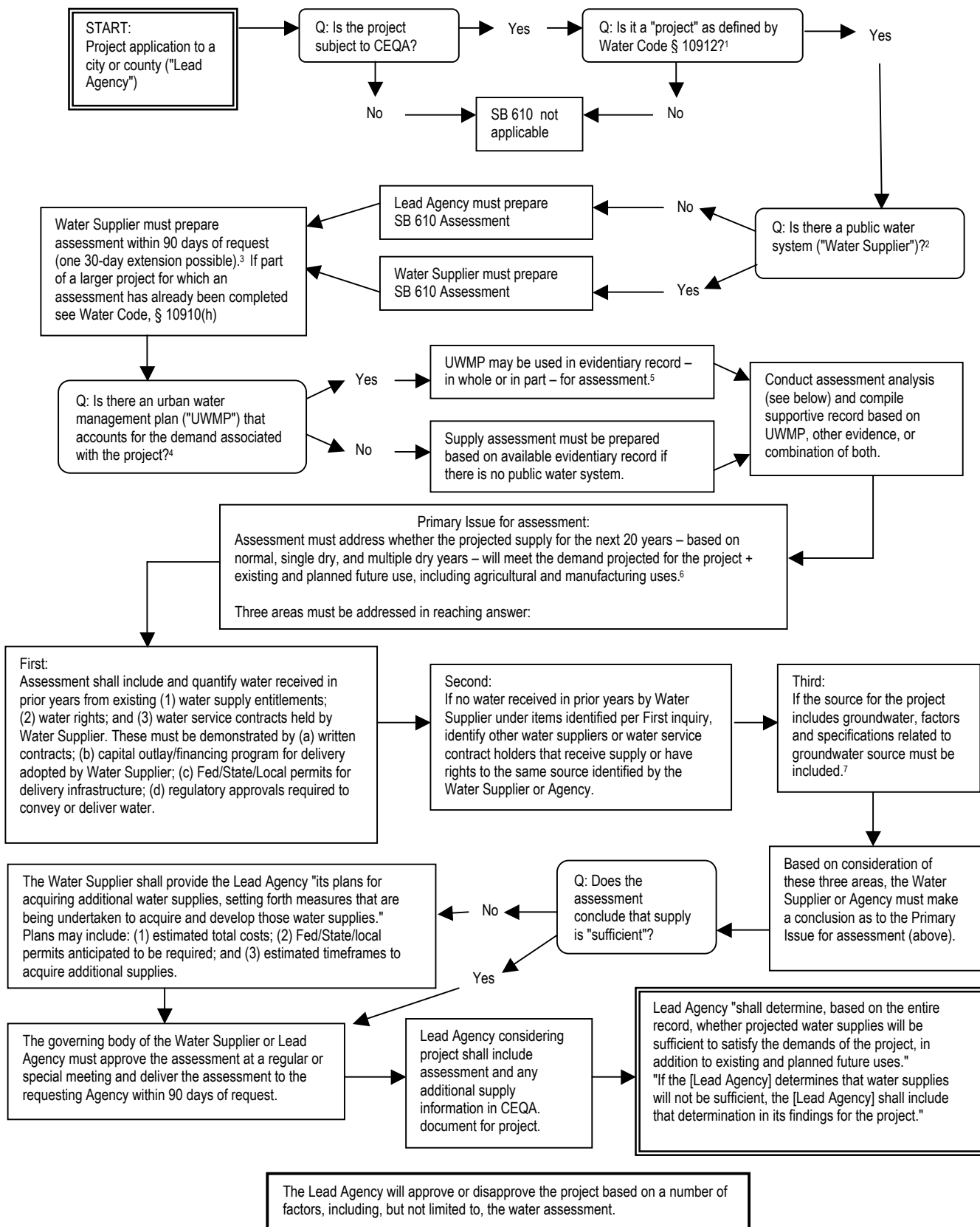


Chart Courtesy of the  
The Building Industry Legal Defense

## Notes for SB 610 Flowchart

### Footnote 1:

California Water Code section 10912.

For the purposes of this part, the following terms have the following meanings:

- (a) "Project" means any of the following:
- (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 specified in this subdivision.
  - (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.
- (b) If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

### Footnote 2:

California Water Code section 10912.

(c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. A public water system includes all of the following:

- (1) Any collection, treatment, storage, and distribution facility under control of the operator of the system which is used primarily in connection with the system.
- (2) Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.
- (3) Any person who treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption. It also means a system that will become a public water supplier if the project puts it over 3,000 service connections.

### Footnote 3:

California Water Code section 10910, subdivision (g)(1).

### Footnote 4:

The requirement for and contents of an urban water management plan are provided in California Water Code section 10631, as amended by SB 610 in 2001.

### Footnote 5:

California Water Code section 10910, subdivision (c)(2) provides that the UWMP may be used, but it may or may not provide all of the information needed.

### Footnote 6:

See California Water Code section 10910, subdivisions (c)(3) & (4); see also Government Code section 66473.7, subdivision (a)(2) [SB 221]

### Footnote 7:

California Water Code section 10910, subdivision (f):

- (f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water assessment:
- (1) A review of any information contained in urban water management plan relevant to the identified water supply for proposed project.
  - (2) A description of any groundwater basin or basins from which the proposed project will be supplied. 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. For basins that have not been adjudicated, 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.



# SB 221 Flowchart

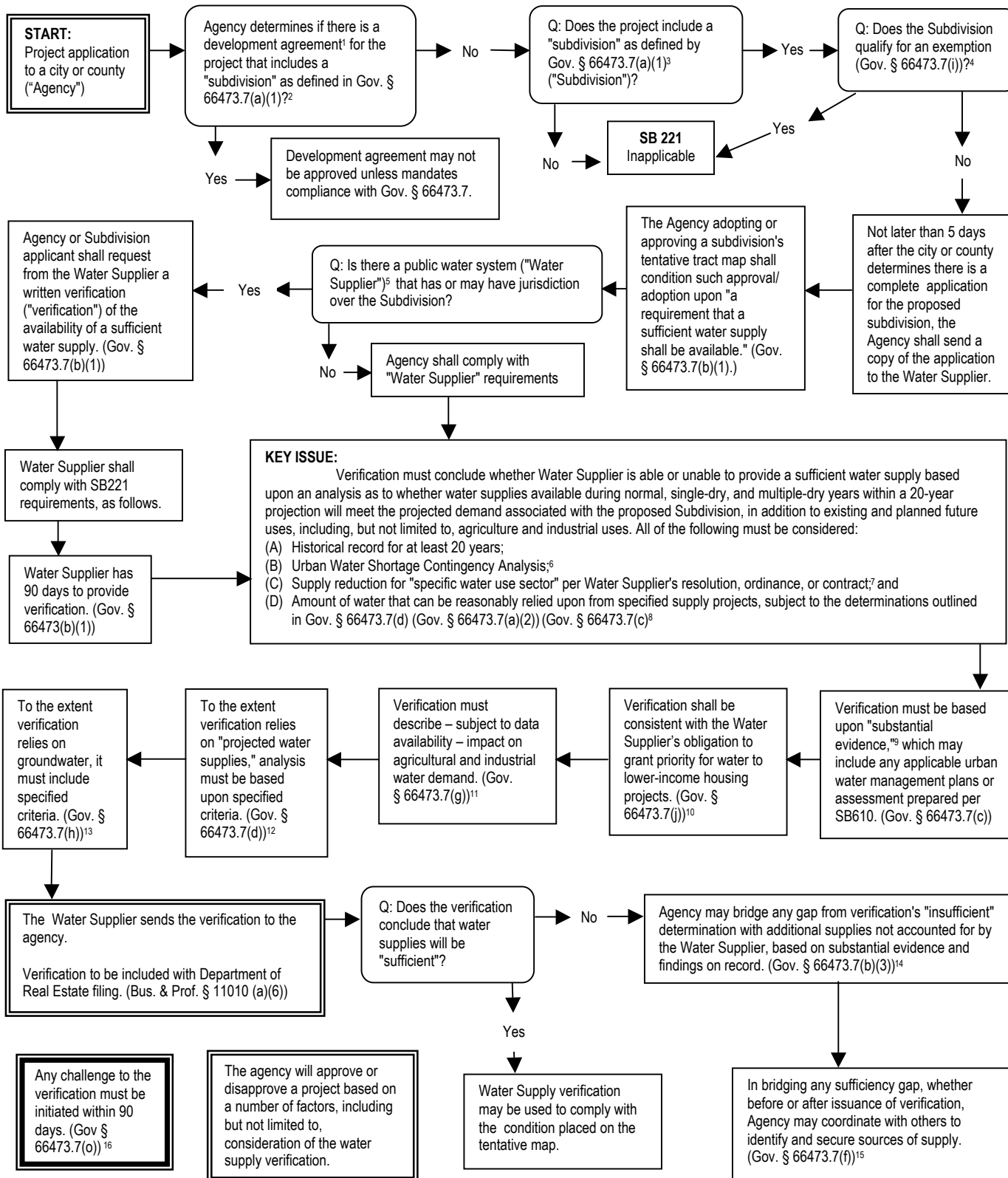


Chart Courtesy of the  
The Building Industry Legal Defense Foundation

## Notes for SB 221 Flowchart

**Footnote 1:** Gov. Code § 65867.5

**Footnote 2:** "Subdivision" is defined as follows per Government Code § 66473.7(a)(1): " 'Subdivision' means a proposed residential development of more than 500 dwelling units, except that for a public water system that has fewer than 5,000 service connections, "subdivision" means any proposed residential development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections." See Government Code § 65867.5(c). (development agreements)

**Footnote 3:** See note 2.

**Footnote 4:** Gov. Code § 66473.7(i) provides an exemption for "infill" or "low-income or very-low-income" housing subdivisions as follows: "This section shall not apply to any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses, or where the immediate contiguous properties surrounding the residential project site are, or previously have been, developed for urban uses, or housing projects that are exclusively for very low and low-income households."

**Footnote 5:** " 'Public water system' means the water supplier that is, or may become as a result of servicing the subdivision included in a tentative map pursuant to subdivision (b), a public water system, as defined in Section 10912 of the Water Code, that may supply water for a subdivision." (Gov. Code §66473.7(a)(3).) There may be one water supplier for a given project. For example there may be different providers for potable water versus reclaimed water versus groundwater.

**Footnote 6:** The Urban Water Shortage Contingency Analysis may be prepared pursuant to Water Code § 10632.

**Footnote 7:** Supply reduction resolution, ordinance, or contract may not conflict with Water Code § 354.

**Footnote 8:** Specifically, "The amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under federal, state, and local water initiatives such as CALFED and Colorado River tentative agreements, to the extent that these water supplies meet the criteria of subdivision (d)." (Gov. Code § 66473.7(a)(2)(D).) Subdivision (d) addresses evidentiary requirements for "projected" water supplies, and these requirements are listed in note 13.

**Footnote 9:** "The applicable public water system's written verification of its ability or inability to provide a sufficient water supply that will meet the projected demand associated with the proposed subdivision as required by subdivision (b) shall be supported by substantial evidence. The substantial evidence may include, but is not limited to, any of the following:

- (1) The public water system's most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610) of Division 6 of the Water Code.
- (2) A water assessment that was completed pursuant to Part 2.10 (commencing with Section 10910) of Division 6 of the Water Code.
- (3) Other information relating to the sufficiency of the water supply that contains analytical information that is substantially similar to the assessment required by Section 10635 of the Water Code." (Gov. Code § 66473.7(c).)

**Footnote 10:** "The determinations made pursuant to this section shall be consistent with the obligation of a public water system to grant a priority for the provision of available and future water resources or services to proposed housing developments that help meet the city's or county's share of the regional housing needs for lower income households, pursuant to Section 65589.7." (Gov. Code § 66473.7(j).)

**Footnote 11:** "The written verification prepared under this section shall also include a description, to the extent that data is reasonably available based on published records maintained by federal and state agencies, and public records of local agencies, of the reasonably foreseeable impacts of the proposed subdivision on the availability of water resources for agricultural and industrial uses within the public water system's service area that are not currently receiving water from the public water system but are utilizing the

same sources of water. To the extent that those reasonably foreseeable impacts have previously been evaluated in a document prepared pursuant to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) or the National Environmental Policy Act (Public Law 91-190) for the proposed subdivision, the public water system may utilize that information in preparing the written verification." (Gov. Code § 66473.7(g).)

**Footnote 12:** "When the written verification pursuant to subdivision (b) relies on projected water supplies that are not currently available to the public water system, to provide a sufficient water supply to the subdivision, the written verification as to those projected water supplies shall be based on all of the following elements, to the extent each is applicable:

- (1) Written contracts or other proof of valid rights to the identified water supply that identify the terms and conditions under which the water will be available to serve the proposed subdivision.
- (2) Copies of a capital outlay program for financing the delivery of a sufficient water supply that has been adopted by the applicable governing body.
- (3) Securing of applicable federal, state, and local permits for construction of necessary infrastructure associated with supplying a sufficient water supply.
- (4) Any necessary regulatory approvals that are required in order to be able to convey or deliver a sufficient water supply to the subdivision." (Gov. Code § 66473.7(d).)

**Footnote 13:** "Where a water supply for a proposed subdivision includes groundwater, the public water system serving the proposed subdivision shall evaluate, based on substantial evidence, the extent to which it or the landowner has the right to extract the additional groundwater needed to supply the proposed subdivision. Nothing in this subdivision is intended to modify state law with regard to groundwater rights." (Gov. Code § 66473.7(h).)

**Footnote 14:** "If the written verification provided by the applicable public water system indicates that the public water system is unable to provide a sufficient water supply that will meet the projected demand associated with the proposed subdivision, then the local agency may make a finding, after consideration of the written verification by the applicable public water system, that additional water supplies not accounted for by the public water system are, or will be, available prior to completion of the subdivision that will satisfy the requirements of this section. This finding shall be made on the record and supported by substantial evidence." (Gov. Code. § 66473.7(b)(3).)

**Footnote 15:** "In making any findings or determinations under this section, a local agency, or designated advisory agency, may work in conjunction with the project applicant and the public water system to secure water supplies sufficient to satisfy the demands of the proposed subdivision. If the local agency secures water supplies pursuant to this subdivision, which supplies are acceptable to and approved by the governing body of the public water system as suitable for delivery to customers, it shall work in conjunction with the public water system to implement a plan to deliver that water supply to satisfy the long-term demands of the proposed subdivision." (Gov. Code § 66473.7(f).)

**Footnote 16:** "Any action challenging the sufficiency of the public water system's written verification of a sufficient water supply shall be governed by Section 66499.37." (Gov. § 66473.7(o).) Government Section 66499.37 states: "Any action or proceeding to attack, review, set aside, void or annul the decision of an advisory agency, appeal board or legislative body concerning a subdivision, or of any of the proceedings, acts or determinations taken, done or made prior to such decision, or to determine the reasonableness, legality or validity of any condition attached thereto, shall not be maintained by any person unless such action or proceeding is commenced and service of summons effected within 90 days after the date of such decision. Thereafter all persons are barred from any such action or proceeding or any defense of invalidity or unreasonableness of such decision or of such proceedings, acts or determinations. Any such proceeding shall take precedence over all matters of the calendar of the court except criminal.