5.4 SOILS

5.4.1 Affected Environment

5.4.1.1 Introduction

SES Solar Two, LLC (Solar Two or Applicant) proposes to construct and operate the Solar Two Project and its ancillary facilities (Project). The Project is located approximately 14 miles west of El Centro, California, between Interstate 8 and Evan Hewes Highway. This region of Imperial County is primarily undeveloped desert land that lies to the west of the Westside Main Canal and the agriculture land use areas that dominate Imperial County. The area lies near the southwestern margin of ancient Lake Cahuilla and southeast of the Coyote Mountains. This section discusses the affected soil resources for the Project (see Figure 5.4-1, Soils in Project Vicinity).

The affected environments for soil resources are described in this section. Environmental consequences are discussed in Section 5.4.2, Environmental Consequences, cumulative effects are discussed in Section 5.4.3, Cumulative Effects, and Applicant-committed mitigation measures are presented in Section 5.4.4, Mitigation Measures.

5.4.1.2 Regional Setting

Imperial County is a rural agricultural county in the southern portion of California. The region has a long growing season and low precipitation (average 2.93 inches per year). Precipitation occurs primarily from mid-fall to mid-spring. Summers are long and hot; winters are typically mild. Imperial County is a leading agricultural area because of both environmental and cultural factors including good soils, a year-round growing season, the availability of adequate water transported from the Colorado River by a complex canal system, extensive areas committed to agricultural production, a gently sloping topography, and a climate that is well suited for growing crops and raising livestock (Imperial County General Plan, Agricultural Element 1993a).

The Imperial County area is generally level, with low levels of natural erosion. Erosion is dependent on texture (i.e., clay, sand, or silt content), moisture content, and agronomic practices (i.e., cropped, fresh-tilled, or fallow). Lacustrine basin soils in the Imperial County area formed on nearly level old lakebeds near prehistoric Lake Cahuilla. These soils generally consist of silty clays, silty clay loams, and clay loams; are deep and highly calcareous; and usually contain gypsum and soluble salts. Soils within Imperial County have no potential for farming, unless irrigated, because of the very dry climate. Continued agricultural use of soils within the Imperial County area generally requires both irrigation and installation of subsurface tile drains to carry away water and salts that would have otherwise built up in the soils and prevented crop growth. Tile drains discharge irrigation water to surface drains.

5.4.1.3 Affected Soils Resource

Soil types near the Project are described and mapped at the level of soil association. The location of, and properties of, the soil associations are based on interpretation of the State Soil Geographic Database (STATSGO) prepared by the Natural Resources Conservation Service

(NRCS 1995) and on data from the Soil Data Mart. Based on this mapping and the current Project layout, primarily two soil associations will be affected by Project construction. As shown on Figure 5.4-1, Soils in Project Vicinity, the site area is underlain by the Rositas-Carrizo-Orita and Meloland-Vint-Indio soil associations. The waterline and the transmission line routes are also underlain primarily by these two soil types. In addition, the transmission line route traverses a small area underlain by Badland-Beeline-Rillito soils. The following paragraphs provide brief descriptions of the mapped soil units. Characteristics for these soil associations are presented in Table 5.4-1, Summary of Soil Unit Characteristics.

Table 5.4-1
Summary of Soil Unit Characteristics

Soil Association	Texture	Depth of Surface Layer (inches)	Land Capability Class[1]	Wind Erodibility[2] (Group/ Index)	K Factor	Erosion Hazard – Roads and Trails[3]	Risk of Corrosion	
							Uncoated Steel	Concrete
Rositas-Carrizo-Orita	Gravelly loam, sandy loam	11	7	3 / 86	0.15	Slight	High	Low
Meloland-Vint-Indio	Loam, silt loam, sandy loam	11	7	4L / 180	0.43	Slight	High	Moderate and Low
Badland-Beeline-Rillito	Ranges from clay to gravelly sand; fine textures predominate	12	8	8 / 0	0.15	Severe	N/A	N/A

Source for soils mapping and characteristics: U.S. Department of Agriculture, NRCS, SSURGO data, Imperial County Area, California, GIS; STATSGO, 2004.

Notes:

1 Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat. Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

2 Wind erodibility groups range from 1 to 8, with 1 being highly erodible and 8 having low erodibility. L denotes calcareous soil. Wind erodibility index is the estimated soil loss measured in tons per acre per year.

3 Qualitative descriptors of erosion hazard: Slight = little or no erosion is anticipated, Moderate = some erosion anticipated, Severe = significant erosion potential exists.

K = erodibility factor

N/A = not applicable

The Rositas-Carrizo-Orita association soils typically form on alluvial fans, terraces, and basins. These soils are commonly silt loams to sands and are somewhat excessively well drained to moderately well drained.

The Meloland-Vint-Indio association soils are formed primarily on valley fill or basin deposits, including lacustrine and eolian deposits. These calcareous soils range from silt loam to loamy sand in the upper layers with a potential for clayey subsoils. These soils are generally moderately well drained to well drained with low to medium runoff and slow permeability.

The Badland-Beeline-Rillito association soils are formed on moderately sloping to steep dissected drainages and in mixed alluvium. These relatively barren soils are underlain by sediments and eroded sedimentary rock, including soft sandstone and shale. Soil texture ranges from gravelly loam to sandy loam and the soils are calcareous. These soils are generally somewhat excessively drained and exhibit slow to medium runoff and moderate permeability.

A summary of the significant characteristics, including the description, hazard of erosion, and risk of corrosion of the major soil units within the site area are presented in Table 5.4-1, Summary of Soil Unit Characteristics.

5.4.1.4 Agricultural and Prime Farmland

Agriculture

The Project Site encompasses undeveloped desert land. The nearest agricultural distribution canal is the Westside Main Canal, which is located approximately 1.5 miles to the east of the eastern edge of the site. To the south, this canal is located approximately 0.75 mile east of Imperial Valley Substation, terminus of the proposed transmission line. No crops have been grown at the Project Site. The nearest agricultural usage is on the parcels approximately 0.25 mile east of the Project Site. None of the Project components traverse land covered by Williamson Act contracts. See also Section 5.9, Land Use, Section 5.9.2.2, Agricultural Land, for more information.

Prime Farmland

As assessed in Section 5.9, Land Use, the Project facilities, transmission line, water pipeline, and laydown areas are not located within any areas designated as prime farmland or farmland of statewide importance based on review of available information. See also Section 5.9, Land Use, Section 5.9.2.2, Agricultural Land, for more information.

5.4.2 Environmental Consequences

The Project's environmental consequences, with respect to soil and agricultural resources, are mainly related to Project construction and operation. Grading will be performed in the areas planned for dish structures, building pads, electrical transmission facilities, utilities, access roads, and berms for drainage of surface water flow.

Environmental consequences related to soils are presented in Section 5.4.2.1, Soils Resource, and environmental consequences related to agricultural resources are presented in Section 5.4.2.2, Agriculture and Prime Farmland. Potential effects resulting from Project emissions are presented in Section 5.4.2.3, Potential Effects of Project Emissions.

5.4.2.1 Soils Resources

California Environmental Quality Act (CEQA), Appendix G, identifies the criterion below for determining significance of effects to soils resources.

- Project results in substantial soil erosion or loss of topsoil, degradation of soils or farmland, changes in topography, or unstable soil conditions.

The assessment of Project effects to soil resources is based on soils information presented in the published and unpublished Soil Conservation Service (SCS) soil survey information covering the Project area (SCS 1981; NRCS 1995) and consideration of the applicant-committed mitigation measures. The Project area soil conditions include slightly and moderately sloping topography

and undeveloped site conditions. The use of erosion control best management practices (BMPs) to control water and wind erosion during construction activities, and placement of impervious surfaces and/or BMPs on disturbed areas within the Project area will effectively control soil loss after construction. Quantitative calculations of potential soil loss using the Universal Soil Loss and Chepil Wind Erosion Equations, have been performed, and the results are presented below. The Project's potential effects on soil resources can be divided into those involving construction activities and those related to Project operation.

The average annual soil erosion rates by sheet and rill erosion caused by rainfall runoff for the soil associations with the Project are provided in Table 5-4-2, Soil Erosion Rates. Several soil textures were used for the calculations to correlate soil loss rates with soil texture. Based upon the calculations, the existing condition erosion rates increase during construction due primarily to fill placement without the use of erosion and sediment control BMPs. The Project will use construction and operation phase erosion and sediment control BMPs, and final stabilization to reduce soil erosion rates to at or below existing levels.

The Wind Erodibility Indices provided by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), Soil Survey Geographic Data, Imperial Valley, California, for these soils are 85 tons per acre per year for Rositas-Carrizo-Orita soil association, and 160 tons per acre per year for the Meloland-Vint-Indio soil associations, as shown in Table 5-4-1, Summary of Soil Unit Characteristics. The wind erodibility index is the theoretical, long-term amount of soil lost per year through wind erosion. It is based on the assumption that the soil is bare, lacks a surface crust, occurs in an unsheltered position, and is subject to the weather at Garden City, Kansas. These wind erodibility index values were checked using the Wind Erosion Prediction System model using Imperial Valley wind and climate information. Soil loss due to wind erosion is estimated to be greater than 100 tons per acre per year for both the Rositas-Carrizo-Orita and the Meloland-Vint-Indio soil associations. Wind erosion rates are orders of magnitude higher than soil erosion by rainfall runoff at this location due to the relatively low annual rainfall amount. Wind erosion control BMPs (e.g., tracking control, stabilized construction entrance exits, construction road stabilization, and dust control) will be used to maintain or reduce existing wind erosion rates during construction and operation.

The RUSLE2 and Wind Erosion Prediction System soil loss calculations are provided in Appendix W, Soil Loss Calculations.

Table 5-4-2
Soil Erosion Rates

Soil Type	Existing (ton/ac/yr)	Construction - Cut Area with No BMPs (ton/ac/yr)	Construction - Fill area with No BMPs (ton/ac/yr)	Construction - Average with No BMPs (ton/ac/yr)	Construction with BMPs (ton/ac/yr)	Operations with BMPs (ton/ac/yr)
Rositas Sand and Fine Sand, 0% to 9% Slopes	0.042	0.042	0.14	0.091	<0.042	<0.042
Rositas Loamy Fine Sand, 0% to 2% Slopes	0.082	0.081	0.25	0.17	<0.082	<0.082
Rositas Silt Loam 0% to 2% Slopes	0.42	0.42	1.3	0.86	<0.42	<0.42
Meloland Fine Sand	0.017	0.017	0.054	0.036	<0.017	<0.017

Table 5-4-2
Soil Erosion Rates

Soil Type	Existing (ton/ac/yr)	Construction - Cut Area with No BMPs (ton/ac/yr)	Construction - Fill area with No BMPs (ton/ac/yr)	Construction - Average with No BMPs (ton/ac/yr)	Construction with BMPs (ton/ac/yr)	Operations with BMPs (ton/ac/yr)
Vint Fine Sandy Loam	0.13	0.13	0.41	0.27	<0.13	<0.13
Indo Loam	0.25	0.25	0.76	0.51	<0.25	<0.25

Source: URS Corporation 2008. See Appendix W, Soil Loss Calculations.
Notes:
< = less than
% = percent
BMP = Best Management Practice
ton/ac/yr = tons per acre per year
Soil erosion rates reflect sheet flow and rill erosion caused by storm water runoff and were calculated using the Revised Universal Soil Loss Equation (Version 2), RUSLE2 computer program.
BMP = Erosion and Sediment Control Best Management Practice (Erosion Blanket, Mulch, Silt Fence, Fiber Roll, or Final Stabilization, etc.).

Construction-Related Effects

Construction-related effects to soil resources associated with Project development, including the proposed waterline, electrical transmission line, and laydown areas, primarily involve vegetation removal, excavation, grading, and temporary stockpiling. Approximately 3,000 acres of land will be disturbed during construction activities with the completed Project Site improvements limited to approximately 2,747 acres.

The existing site topography includes an upland area sloping gently to the east-northeast. Some minor cut and fill will be required to provide a level area for the Project facilities. The surficial soils will likely be excavated and recompacted within the areas of proposed Project facilities. Construction will include approximately 10.35 miles of electrical transmission line and 7.18 miles of waterline.

Effects during Project construction on soil resources can include alteration of the existing soil profile, increased soil erosion, and soil compaction. Alteration of the existing soil profiles, including mixing of soils and rock, will alter the physical, chemical, and biological characteristics of the native soils and underlying geology. Clearing or cutting of the protective vegetative cover and subsequent soil disturbance will likely result in short-term increases in water and wind erosion rates. Soil erosion causes the loss of topsoil and can increase the sediment load in surface-receiving waters downstream of the construction site. Soil compaction can decrease infiltration rates, resulting in increased runoff and erosion rates.

The magnitude, extent, and duration of construction-related effects depend on the erodibility of the soil, the proximity of the construction activity to receiving water, and the construction methodologies, duration, and season. The gentle topography and site grading on the Project Site would limit soil erosion to minor or moderate. The mitigation measures outlined in Section 5.4.4, Mitigation Measures, would further reduce effects to soil resources resulting from Project construction to less-than-significant levels.

Operation-Related Effects

The completed Project will include solar collectors, various buildings, paved primary access roads, secondary unpaved access roads, and minor asphalt or crushed aggregate parking lots. Infiltration basins are proposed to handle storm water at the Main Services Complex. Therefore, no significant effects to soil resources are anticipated from Project operations.

5.4.2.2 Agriculture and Prime Farmland

CEQA, Appendix G, identifies the criteria below for determining significance of effects to agriculture and prime farmland.

- Does the Project convert prime farmland, unique farmland, or farmland of statewide importance to nonagricultural uses?
- Does the Project conflict with existing zoning for agricultural use or a Williamson Act contract?
- Does the Project involve other changes in the existing environment that, because of their location or nature, could result in conversion of farmland to nonagricultural use?

As discussed in Section 5.9, Land Use, the Project does not convert prime farmland, unique farmland or farmland of statewide importance and does not conflict with a Williamson Act contract. The Project does not represent a loss of farmland. Therefore, Project development does not represent a significant effect to agricultural resources.

5.4.2.3 Potential Effects of Project Emissions

Project construction and operation will not expose nearby soils and vegetation to any significantly increased levels of air pollutants, as discussed in Section 5.2, Air Quality. As presented, these emissions would not adversely affect Project habitats. Based on the minimal level of emissions, the paucity of surrounding vegetation, and the implementation of dust control measures, effects to the soil vegetation system from Project emissions are expected to be insignificant.

5.4.3 Cumulative Effects

From a soils and agricultural lands resources perspective, no cumulative effects have been identified for the Project.

5.4.4 Mitigation Measures

No significant agricultural effects were identified; therefore, no agricultural mitigation measures are proposed. This section describes Applicant-committed mitigation measures that will be implemented to reduce Project-related potential effects to soil resources.

The following mitigation measures will be implemented to reduce potentially significant soils effects to less-than-significant levels. An acceptable level of soil erosion, as used herein, is defined as that amount of soil loss that would not affect (i.e., limit) the potential long-term beneficial uses of the soil as a growth medium, or adversely affect water resources because of accelerated erosion and subsequent sedimentation. Refer to Section 5.5, Water Resources, for mitigation measures related to potential effects to water quality associated with soil erosion.

With implementation of the mitigation measures listed below, no significant unavoidable adverse effects to soils resources are anticipated because of Project construction and operation.

- **Soil-1:** Conduct grading operations consistent with the Imperial County Grading Ordinance.
- **Soil-2:** Prepare and implement a detailed Erosion Control Plan before construction, which may be a component of the Storm Water Pollution Prevention Plan (SWPPP) (see Mitigation Measure Water-4).
- **Soil-3:** Limit soil erosion/dust generation by wetting active construction areas (including roads) with water or by applying dust palliatives (soil binders).
- **Soil-4:** Stabilize disturbed areas that will not be covered with structures (e.g., buildings or collectors) or pavement following grading and/or cut-and-fill operations. Stabilization methods will include moisturizing and compacting and/or application of polymeric soil stabilizers. The waterline route will be reseeded using a grass seed mix native to the area and allowed to naturally revegetate.
- **Soil-5**: Minimize disturbance of soils and vegetation by reducing access and construction areas to smallest practical dimensions.
- **Soil-6:** Cut/mow vegetation when removal is necessary, clear vegetation only to the extent necessary during construction activities.
- **Soil-7:** Segregate and stockpile removed topsoil for reuse if practicable.
- **Soil-8:** Implement drainage control measures and grade Project Site to direct surface water into the retention basins.
- **Soil-9:** Conduct post-construction monitoring of areas that were disturbed during the construction phase.

5.4.5 Compliance with LORS

The laws, ordinances, regulations, and standards (LORS) summarized in Table 5.4-3, Summary of LORS – Soils, are applicable to protection of soils resources.

Table 5.4-3
Summary of LORS – Soils

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Federal Jurisdiction				
Federal Water Pollution Control Act of 1972; Clean Water Act of 1977 (including 1987 amendments).	Meet discharge requirements relative to sediment because of accelerated erosion.	Section 5.4.5.3	RWQCB, Colorado River Basin Region 7, under the direction of the State Water Resources Control Board	4, 5
U.S. Department of Agriculture, SCS, National Engineering Handbook (1983), Sections 2 and 3.	Implement standards for the planning, design, and conservation of soil conservation practices.	Section 5.4.5.3	NRCS	1
State Jurisdiction				
California Public Resource Code §25523(a)	Provisions relating to the manner in which the Project is to be designed, sited, and operated to protect environmental quality and assure public health and safety.	Section 5.4.5.4	CEC	2
California Public Resource Code §21000 *et. seq.*; Guidelines for Implementation of California Environmental Quality, Appendix G	Environmental checklist form, evaluation of erosion or siltation and conversion of agricultural lands.	Section 5.4.5.4	CEC	2
Williamson Act	Provides for lowered property taxes for lands maintained in agricultural and certain open space uses.	Section 5.4.5.4	Department of Conservation, Office of Land Conservation	3
California Porter-Cologne Water Quality Control Act; California Water Code, Division 7, §13260–13269	Adequate protection of water quality by appropriate design, sizing and construction of erosion and sediment controls; obtain waste discharge requirements concerning potential surface water pollution from Project runoff.	Section 5.4.5.4	CEC, RWQCB Colorado River Basin Region 7	2, 4

Table 5.4-3
Summary of LORS – Soils

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Local Jurisdictions				
Imperial County Codified Ordinance Site Design Standards				
Imperial County Land Use Code, Title 9, Division 3, Chapter 1, Sections 90301.02; 90301.03; Chapter 2, Section 90302.13	Regulations pertaining to fugitive dust control during grading. Regulations describing submittal requirements related to grading projects; description of soil test required for grading permit.	Section 5.4.5.5	Imperial County Planning/Building Department	6
Imperial County Codified Ordinance Grading Regulations				
Imperial County Land Use Code, Title 9, Division 10, Chapter 10	Regulations pertaining to construction permits.	Section 5.4.5.5	Imperial County Planning/Building Department	6
Imperial County Codified Ordinance Flood Damage Regulations				
Imperial County Land Use Code, Title 9, Division 16, Chapter 3, Section 91603.00; Chapter 4, Section 91604.00; Chapter 5, Section 91605.04.	Permit required for development within the floodplain	Section 5.4.5.5	Imperial County Planning/Building Department	6
Imperial County General Plan, Open Space and Conservation Element				
Policy	Landscaping should be required in all developments to prevent erosion on graded sites, and, if the area is contiguous with undisturbed wildlife habitat, the plan should include revegetation with native plant species.	Section 5.4.5.5	Imperial County Planning/Building Department	6
Goal 1	Environmental resources should be conserved for future generations by minimizing environmental effects in all land-use decisions.	Section 5.4.5.5	Imperial County Planning/Building Department	6
Goal 4; Objective 4.2	The county will actively conserve and maintain contiguous farmlands and prime soil areas to maintain economic vitality and the unique lifestyle of the Imperial Valley. Control and prevent soil erosion when possible.	Section 5.4.5.5	Imperial County Planning/Building Department	6
Goal 8	The county will conserve, protect, and enhance the water resources in the planning area.	Section 5.4.5.5	Imperial County Planning/Building Department	6

Table 5.4-3
Summary of LORS – Soils

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Imperial County General Plan, Agricultural Element				
Goal 1	Preservation of important farmland.	Section 5.4.5.5	Imperial County Planning/Building Department	6
Goal 3	Limit the introduction of conflicting uses into farming areas, including residential development of existing parcels, which may create the potential for conflict with continued agricultural use of adjacent property.	Section 5.4.5.5	Imperial County Planning/Building Department	6

Source: URS Corporation, 2008.
Notes:
CEC = California Energy Commission
LORS = laws, ordinances, regulations, and standards
NRCS = Natural Resources Conservation Service
RWQCB = Regional Water Quality Control Board
SCS = Soil Conservation Service

5.4.5.1 Agencies and Agency Contacts

Agency contacts are provided in Table 5.4-4, Agency Contact List for LORS.

Table 5.4-4
Agency Contact List for LORS

No.	Agency	Contact	Address	Telephone
1	U.S. Department of Agriculture, Natural Resources Conservation Services	Cydean Gillespie	177 North Imperial Avenue El Centro, CA 92243-2808	760-352-4418
2	California Energy Commission	Eileen Allen, Energy Facility Licensing Program	1516 Ninth Street Sacramento, CA 95814-5504	916-654-4082
3	California Department of Conservation, Division of Land Resource Protection	Bridgett Luther	801 K Street, MS 18-01 Sacramento, CA 95814-3528	916-324-0850
4	Regional Water Quality Control Board, Colorado River Basin Region	John Carmona	73-720 Fred Waring Drive, Suite 100 Palm Desert, CA 92260	760-346-7491
5	California Department of Water Resources	Lester Snow	1416 9th Street Sacramento, CA 94236-0001	916-653-5791
6	Imperial County Planning/ Building Department	Jurg Heuberger	801 Main Street El Centro, CA 92243	760-482-4238

Source: URS Corporation, 2008.

5.4.5.2 Permits Required and Permitting Schedule

Permits and schedules are provided in Table 5.4-5, Applicable Permits.

Table 5.4-5
Applicable Permits

Responsible Agency	Permit/Approval	Schedule
Regional Water Quality Control Board Colorado River Basin Region 7	Notice of Intent	Before construction
	National Pollutant Discharge Elimination System General Construction Storm Water Permit	Before construction
Imperial County	Grading Permit, Construction Permit	Before construction
	Development Permit Requirements to be met	Before construction
	Septic Tank/Leach Field Permit	Before construction

Source: URS Corporation, 2008.

5.4.5.3 Federal Authorities and Administering Agencies

Federal Water Pollution Control Act of 1972; Clean Water Act of 1977 (including its 1987 amendments)

These authorities establish requirements for any facility or activity that has or that will discharge wastes (including sediment because of accelerated erosion) that may interfere with the beneficial uses of receiving waters.

The administering agency for the above authority is the Regional Water Quality Control Board (RWQCB), Colorado River Basin, Region 7, under the direction of the State Water Resources Control Board.

A SWPPP would be submitted to the RWQCB to be reviewed and approved. The SWPPP would incorporate all appropriate erosion control measures during Project construction.

U.S. Department of Agriculture, Soil Conservation Service, National Engineering Handbook (1983), Sections 2 and 3

The U.S. Department of Agriculture prescribes standards of technical excellence for the SCS (now the NRCS) for the planning, design, and construction of soil conservation practices.

The administering agency for the above authority is the NRCS.

The Applicant would adhere to the appropriate standards associated with the planning, design, and construction of soil conservation practices.

5.4.5.4 State Authorities and Administering Agencies

California Public Resources Code Section 25523(a) and California Code of Regulations Sections 1752, 1752.5, 2300-2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (i)

The code provides for protection of environmental quality. Regarding the Project, the code requires submission of information to the California Energy Commission (CEC) concerning potential environmental effects, and the CEC's decision on the Application for Certification must include consideration of environmental protection.

The administering agency for the above authority is the CEC.

California Environmental Quality Act, California Public Resources Code Section 21000 et seq.; Guidelines for Implementation of the California Environmental Quality Act of 1970, 14 California Code of Regulations Section 150000-155387, Appendix G

The CEQA guidelines specify that: "A project will normally have a significant effect on the environment if it will…[¶] (q) Cause substantial flooding, erosion or siltation; …[¶](y) Convert prime agricultural land to nonagricultural use or impair the agricultural productivity of prime agricultural lands."

The administering agency for the above authority is the CEC.

The Project would comply with these CEQA requirements because BMPs would be implemented to mitigate significant erosion, siltation, or flooding effects. The Project Site would not require the conversion of prime agricultural land to non-agricultural use; the Land Evaluation and Site Assessment model does not indicate a significant effect; the Project does not represent a significant net loss of farmland; none of the Project components traverse land covered by Williamson Act contracts.

California Land Conservation Act (Williamson Act), California Government Code Title 5, Part 1, Chapter 7 Sections 51200-51295

The Williamson Act provides for lowered property taxes for lands maintained in agricultural and certain open space uses. The landowner enters into a contract with the county or city to restrict land uses to those compatible with agriculture, wildlife habitat, scenic corridors, recreational use, or open space. In return, the local authorities calculate the property tax assessment based on the actual use of the land instead of its potential value assuming full commercial development. To be eligible, the land must be designated by a city or county as agricultural preserve, scenic highway corridor, or wildlife habitat area; or it must be actively used for the 3 years immediately preceding the beginning of the contract as a salt pond, managed wetland, or recreational or open space area.

The administering agency for the above authority is the Department of Conservation, Office of Land Conservation.

The Project is not expected to require the cancellation of any Williamson Act contracts.

California Porter-Cologne Water Quality Control Act of 1972; California Water Code, Sections 13260-13269; 23 California Code of Regulations Chapter 9

The code requires adequate protection of water quality by appropriate design, sizing, and construction of erosion and sediment controls. Discharge of waste earthen material into surface waters resulting from land disturbance may require the filing of a report of waste discharge (Water Code §13260(a)), and provides for the issuance of waste discharge requirements regarding the discharge of any waste that can affect the quality of the waters of the state. Regarding potential surface water pollution from Project runoff, the waste discharge requirements may incorporate requirements based on the following sources of recommended methods and procedures.

The administering agencies for the above authority are the CEC and the RWQCB (Colorado Basin, Region 7).

The Project would develop an Erosion Control Plan to address surface water runoff.

5.4.5.5 Local Authorities and Administering Agencies

Imperial County Land Use Code, Title 9, Division 3, Chapter 1, Sections 90301.02, 90301.03; Chapter 2, Section 90302.13

This county ordinance establishes development standards. The ordinance requires that dust control measures be implemented during construction and grading activities. It requires submittal of a Plot Plan to the Imperial County Planning/Building Department for approval before obtaining a grading permit. The Plot Plan must include a map showing graded topography. On approval of the Plot Plan, a Grading Plan must be submitted that includes a topographic map showing sloped areas. This ordinance also establishes that a Soils Report may be required.

The administering agency is the Imperial County Planning/Building Department.

The Project would comply with the grading plan requirements through the CEC review process. Project grading and drainage plans would incorporate BMPs and appropriate grading techniques to control fugitive dust emissions and minimize erosion. A soils report would be prepared, if necessary, which would present the results of required soil tests.

Imperial County Land Use Code, Title 9, Division 10, Chapter 10

Imperial County's grading ordinance incorporates regulations pertaining to excavation, grading, and construction. This section of the ordinance also identifies procedures and requirements for applying for a construction permit.

No person, firm, association, corporation or organization except public entities and their officers, employees or contractors who are performing work within publicly owned rights-of-way should, within the unincorporated territories of Imperial County, do any grading, excavation, or earthwork construction without having first obtained a permit therefore from the County Engineer.

Application for a permit must include drainage systems, protective devices, and existing and proposed elevations. Permit conditions establish that (1) proposed grading, excavation, or earthwork will not cause said land to be unfit of agricultural use; (2) the depth of grading, excavation, or earthwork will not preclude the use of drain tile in irrigated lands; and (3) the grading, excavation, or earthwork construction cannot extend below the water table of the immediate area.

The administering agency is the Imperial County Planning/Building Department.

The Applicant would comply with the ordinance requirements through the CEC review process. Project grading and drainage plans would incorporate BMPs and appropriate grading techniques that would minimize the amount of cut and fill. Grading plans would implement erosion control measures for construction and a permanent storm water drainage plan. A registered engineer would prepare the grading and drainage plans.

5.4.6 References

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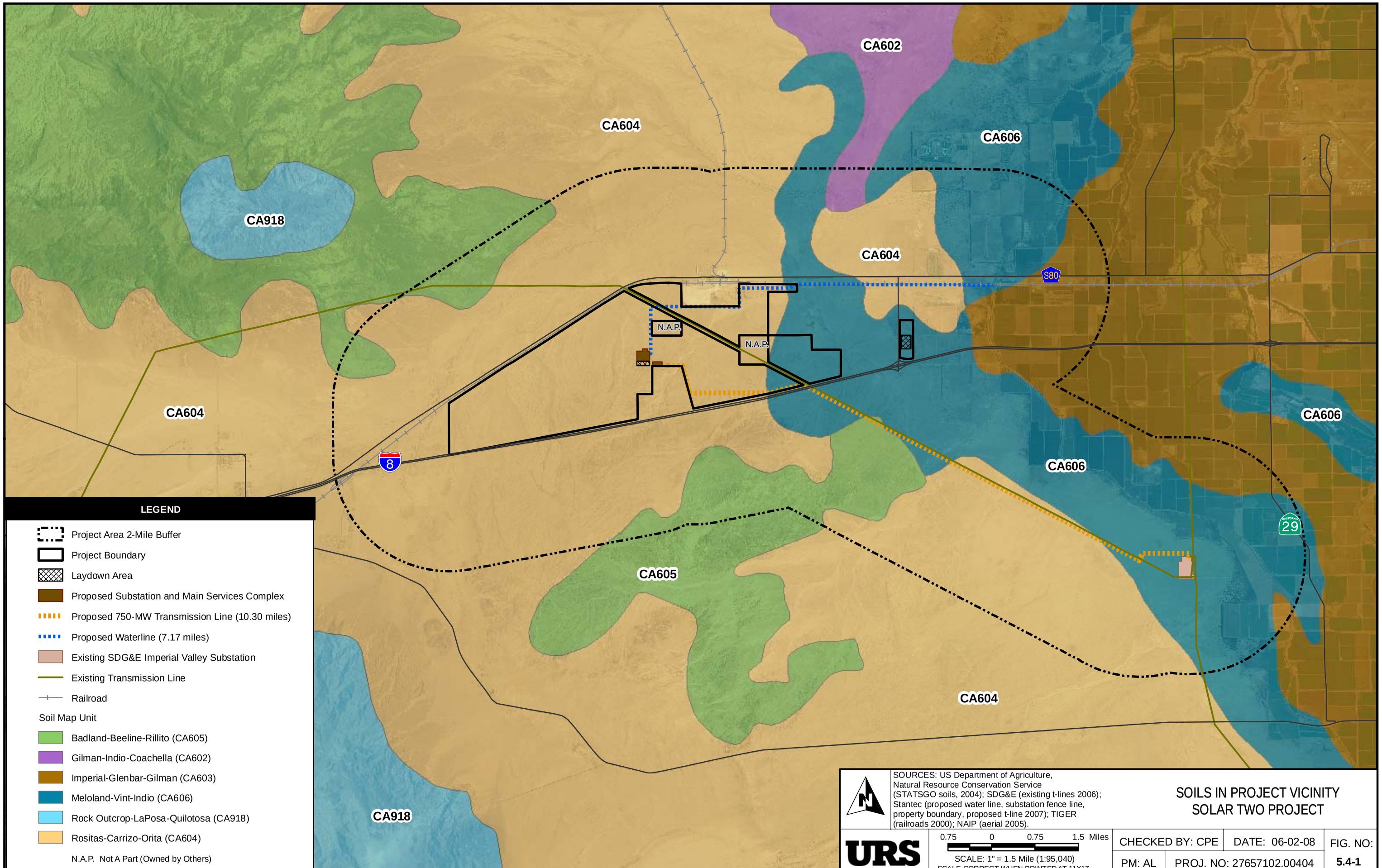
Adequacy Issue:	Adequate		Inadequate		DATA ADEQUACY WORKSHEET	Revision No.	0	Date	
Technical Area:	**Soils**			Project:	Solar Two Project		Technical Staff:		
Project Manager:				Docket:			Technical Senior:		

SITING REGULATIONS	INFORMATION	AFC SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the Project, the measures proposed to mitigate adverse environmental impacts of the Project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	Section 5.4.1 Section 5.4.2 Section 5.4.3 Section 5.4.4		
Appendix B (g) (15) (A)	A map at a scale of 1:24,000 and written description of soil types and all agricultural land uses that will be affected by the proposed Project. The description shall include:	Section 5.4.1.3 Section 5.9.2.2 Figure 5.4-1* *Maps at scale other than 1:24,000 due to very large Project Site size		
Appendix B (g) (15) (A) (i)	The depth, texture, permeability, drainage, erosion hazard rating, and land capability class of the soil;	Section 5.4.1.3 Table 5.4-1		
Appendix B (g) (15) (A) (ii)	An identification of other physical and chemical characteristics of the soil necessary to allow an evaluation of soil erodibility, permeability, re-vegetation potential, and cycling of pollutants in the soil-vegetation system;	Section 5.4.1.3		
Appendix B (g) (15) (A) (iii)	The location of any proposed fill disposal or fill procurement (borrow) sites; and	Section 5.4.1.3		
Appendix B (g) (15) (A) (iv)	The location of any contaminated soils that could be disturbed by Project construction.	N/A		
Appendix B (g) (15) (B)	An assessment of the effects of the proposed Project on soil resources and agricultural land uses. This discussion shall include:	N/A		

Adequacy Issue:	Adequate		Inadequate		DATA ADEQUACY WORKSHEET	Revision No.	0	Date	
Technical Area:	**Soils**			Project:	Solar Two Project		Technical Staff:		
Project Manager:				Docket:			Technical Senior:		

SITING REGULATIONS	INFORMATION	AFC SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (15) (B) (i)	The quantification of accelerated soil loss due to wind and water erosion; and	Section 5.4.2.1		
Appendix B (g) (15) (B) (ii)	The effect of power plant emissions on surrounding soil-vegetation systems.	N/A		
Appendix B (i) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed Project, and a discussion of the applicability of, and conformance with each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed; and	Table 5.4-3		
Appendix B (i) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	Table 5.4-3		
Appendix B (i) (2)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	Table 5.4-4		

Adequacy Issue:	Adequate		Inadequate		DATA ADEQUACY WORKSHEET		Revision No.	0	Date	
Technical Area:	**Soils**				Project:	Solar Two Project		Technical Staff:		
Project Manager:					Docket:			Technical Senior:		
SITING REGULATIONS	**INFORMATION**				**AFC SECTION NUMBER**		**ADEQUATE YES OR NO**	**INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**		
Appendix B (i) (3)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.				Table 5.4-5					



SOILS IN PROJECT VICINITY
SOLAR TWO PROJECT

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