

APPENDIX I

LESA MODELS

**LESA ASSESSMENT
SEVILLE 4 SOLAR PROJECT
HORIZONTAL SINGLE-AXIS TRACKING ARRAY
(T16S, R12E, S25, SBB&M)**

IMPERIAL COUNTY, CALIFORNIA

July 2017

EMA Report No. 2375-01

Prepared for:

Titan Solar II LLC
604 Sutter Street, Suite 250
Folsom, CA 95630-2694



ENVIRONMENTAL MANAGEMENT ASSOCIATES

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LAND EVALUATION AND SITE ASSESSMENT MODEL

SEVILLE 4 SOLAR PROJECT HORIZONTAL SINGLE-AXIS TRACKING ARRAY (T12S, R9E, S25, SBB&M) IMPERIAL COUNTY, CALIFORNIA

The Land Evaluation and Site Assessment (LESA) model is an approach for rating the relative quality of land resources based upon specific measurable features. The LESA model was first developed by the federal Natural Resources Conservation Service (NRCS) in 1981. It was subsequently adapted in 1990 by the California Department of Conservation to evaluate land use decisions that affect the conversion of agriculture lands in California. The formulation of the California LESA Model is intended to provide lead agencies under the California Environmental Quality Act (CEQA) with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process.

For determining the potential CEQA significance resulting from the conversion of agricultural lands to some other purpose, the California Agricultural LESA Model has developed Scoring Thresholds which are used to compare the Final LESA Score and the Weighted Factor Scores for the Project with suggested Scoring Decisions. These LESA Scores do not take into consideration any proposed mitigation measures or other factors that might affect a lead agency's determination of the significance of the agricultural lands conversion impact under CEQA.

The information provided on the following pages present documentation of the LESA assessment prepared using the California Agricultural LESA Model for the Seville 4 Solar Project (Project). The proposed Seville 4 Solar Project, horizontal single-axis tracking array, would be located on portions of the 572.1 acre parcel (APN 018-170-057-000) in west central Imperial County, California, approximately eight miles west of the junction of State Highway 78 and State Highway 86, and approximate three miles east of the San Diego County line. Of this parcel, only approximately 174 acres would be become disturbed land; the rest is land which would not be disturbed (see Figure 1 and Figure 2).

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LESA ASSESSMENT
SEVILLE 4 SOLAR PROJECT
IMPERIAL COUNTY, CALIFORNIA

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Date: 7/19/2017
Author: Carey, D.



EMD
ENVIRONMENTAL MANAGEMENT ASSOCIATES

Seville 4 Solar Project

Location Map

 Project Location

Figure 1: Location Map

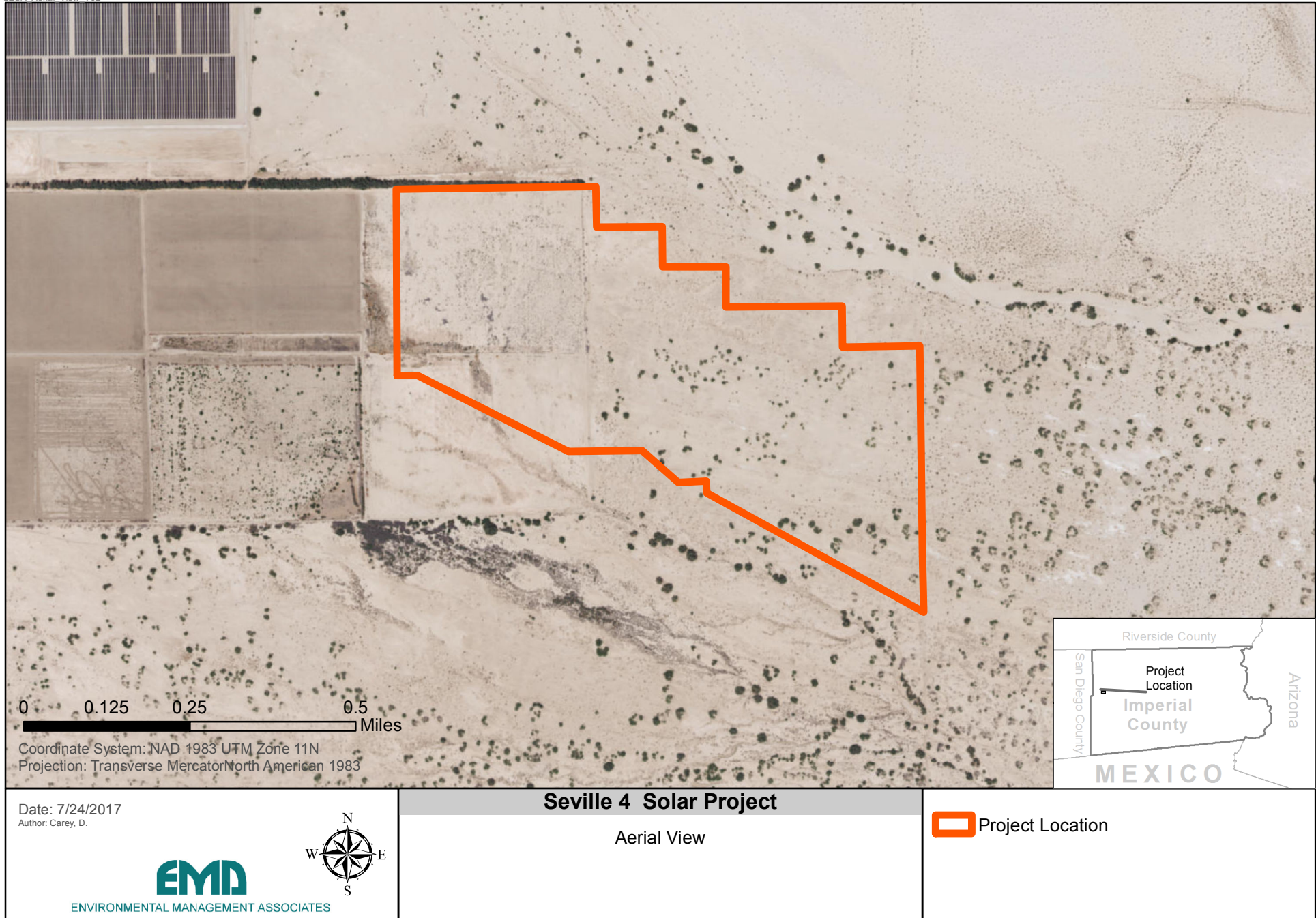
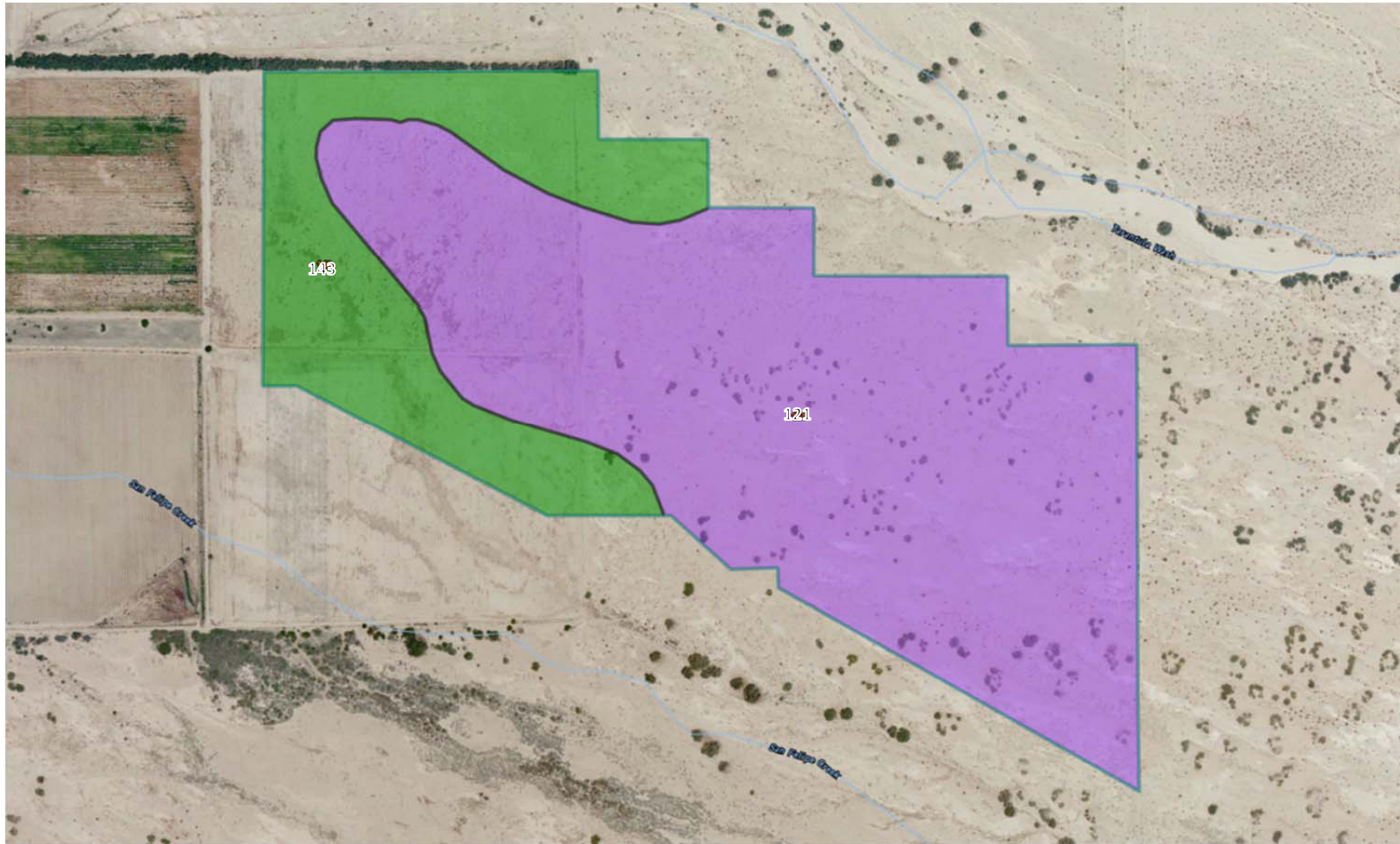


Figure 2 : Development Area on an Aerial Photographic Base

Land Evaluation Worksheet							
A	B	C	D	E	F	G	H
Soil Map Unit*	Project Acres	Proportion of Project Area	LCC** (nonirrigated)	LCC Rating (nonirrigated)***	LCC Score (C x E)	Storie Index**	Storie Index Score (C x G)
121	130.8	0.750	VIIe	10	7.50	55	41.25
143	43.6	0.250	VIIe	10	2.50	95	23.75
Totals	174.4	1.000		LCC Total Score	10.00	Storie Index Total Score	65.00
Total Project Area (acres)=	174.4						
* The Soil Map Unit information and acreage were determined from the current soil survey information available at the USDA Natural Resources Conservation Service website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Figure 3).							
** The Land Capability Classification and Storie Index information was obtained from the current soil survey information available at the USDA Natural Resources Conservation Service website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Appendix A).							
*** The LCC Rating for nonirrigated land was determined from the LCC Point Rating Table 2 from the LESA Instruction Manual (California Department of Conservation 1997).							



Tables — California Revised Storie Index (CA) — Summary By Map Unit					
Summary by Map Unit — Imperial County, California, Imperial Valley Area (CA683)					
Map unit symbol	Map unit name	Rating	Component name (percent)	Acres in AOI	Percent of AOI
121	Meloland fine sand	Grade 3 - Fair	Meloland (85%)	130.8	75.0%
			Meloland (4%)		
143	Vint fine sandy loam	Grade 1 - Excellent	Vint (90%)	43.6	25.0%
Totals for Area of Interest				174.4	100.0%

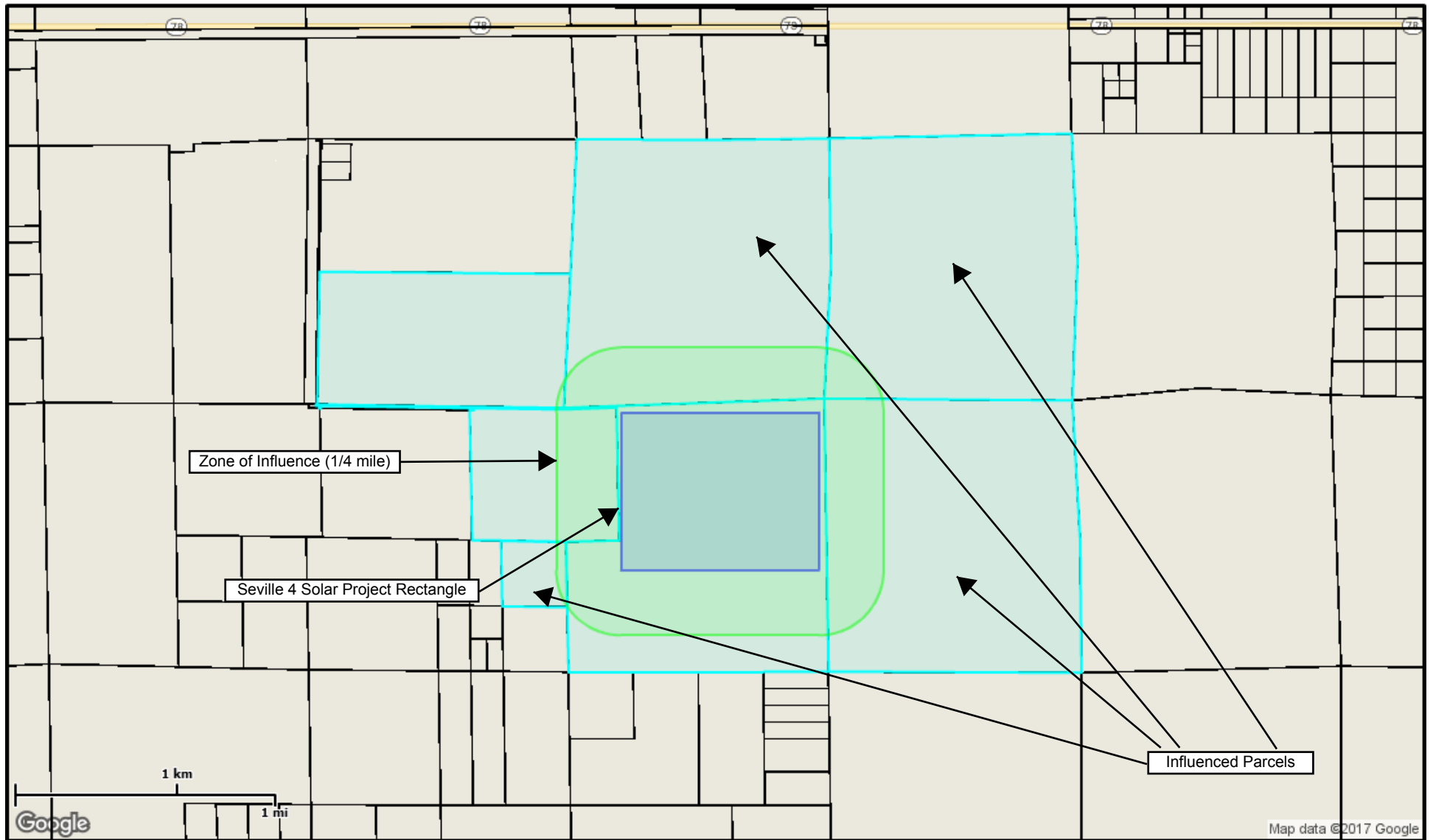
Figure 3: Development Area Soils Map

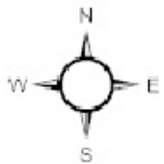

	Site Assessment Worksheet 1		
	Project Size Score*		
	I	J	K
	LCC Class I-II	LCC Class III	LCC Class IV-VIII
<i>Project Acres per LCC Class</i>			130.8
<i>Project Acres per LCC Class</i>			43.6
<i>Total Project Acres per LCC Class</i>			174.4
<i>* Project Size Scores</i>			60
<i>Highest Project Size Score</i>	60		
* Project Size Score was determined from the Project Size Scoring Table from the LESA Instruction Manual (California Department of Conservation 1997).			

Site Assessment Worksheet 2				
Water Resources Availability				
A	B	C	D	E
Project Portion	Water Source	Proportion of Project Area	Water Availability Score*	Weighted Availability Score (C x D)
1	Ground Water Only	1.0	65	65
2				
3				
4				
5				
6				
		(Must Sum to 1.0)	Total Water Resource Score	65
* The Water Availability Score was determined using the Water Resources Availability Scoring Table from the LESA Instruction Manual (California Department of Conservation 1997).				

Site Assessment Worksheet 3							
Surrounding Agricultural Land & Surrounding Protected Resource Land							
A	B	C	D	E	F	G	
Zone of Influence*					Surrounding Agricultural Land Score (From LESA Manual Table 6)	Surrounding Protected Resource Land Score (From LESA Manual Table 7)**	
Total Acres	Acres in Agriculture	Acres of Protected Resource Land	Percent in Agriculture (B/A)	Percent Protected Resource Land (C/A)			
2510.5	258	1323	10.3	53	0	30	
<p>* In conformance with the instructions in the LESA Instruction Manual (California Department of Conservation 1997), the Zone of Influence was determined by drawing the smallest rectangle that could completely encompass the entire Project Area. A second rectangle was then drawn which extended one quarter mile on all sides beyond the first rectangle. The Zone of Influence is represented by the entire area of all parcels with any lands inside the outer rectangle, less the area of the proposed project (Figure 4).</p> <p>** The LESA Instruction Manual (California Department of Conservation 1997) describes <i>Protected Resource Land</i> as those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following: Williamson Act contracted lands; Publicly owned lands maintained as park, forest, or watershed resources; and Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses.</p>							
Surrounding Parcels***	Acres	Protected Resource Land?	Percent Protected Resource Land	Acres in Protected Land	Agricultural Land?	Percent Agricultural Land	Acres of Agriculture
018-170-009	644.2	Y	100	644	N	0	0.0
018-170-046	184.6	N	0	0	Y	100	184.6
018-170-047	314.2	N	0	0	Y	22	69.1
018-170-054	4.0	N	0	0	Y	100	4.0
018-180-001	643.5	N	0	0	N	0	0.0
018-180-011	679.2	Y	100	679	N	0	0.0
018-220-007	40.8	N	0	0	N	0	0.0
Total	2510.5		Total	1323		Total	258
<p>***The Imperial County Assessors website was accessed to identify the surrounding parcel numbers (http://www.co.imperial.ca.us/assessor/). The percentage of agriculture was determined from a map overlay used to estimate the proportion of land in agriculture and the California Department of Conservation Important Farmland Map Series.</p>							

Figure 4: Zone of Influence



1" = 3,009 ft	Zone of Influence	Seville 4 Solar Project 07/12/2017		
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This map represents a visual display of related geographic information. Data provided hereon is not a guarantee of actual field conditions. To be sure of complete accuracy, please contact Imperial County staff for the most up-to-date information.

Final LESA Score Sheet				California LESA Model Scoring Thresholds	
	Factor Scores	Factor Weight	Weighted Factor Scores	Total LESA Score	Scoring Decision
LE Factors					
Land Capability Classification	10.00	0.25	2.50	0 to 39 Points	Not Considered Significant
Storie Index	65.00	0.25	16.25		
LE subtotal		0.50	18.75		
SA Factors					
Project Size	60	0.15	9.00	40 to 59 Points	Considered Significant <u>only</u> if LE <u>and</u> SA subscores are each <u>greater</u> than or equal to 20 points
Water Resource Availability	65	0.15	9.75		
Surrounding Agricultural Land	0	0.15	0.00	60 to 79 Points	Considered Significant <u>unless</u> either LE <u>or</u> SA subscore is <u>less</u> than 20 points
Protected Resource Land	30	0.05	1.50		
SA Subtotal		0.50	20.25		
		Total LESA Score	39.00	80 to 100 Points	Considered Significant

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APPENDIX A: SEVILLE 4 SOLAR PROJECT SOILS DETAILS

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Imperial County, California, Imperial Valley Area

121—Meloland fine sand

Map Unit Setting

National map unit symbol: h8zw

Elevation: -230 to 300 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Meloland and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Meloland

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed and/or eolian deposits derived from mixed

Typical profile

H1 - 0 to 12 inches: fine sand

H2 - 12 to 26 inches: stratified loamy fine sand to silt loam

H3 - 26 to 71 inches: clay

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 13.0

Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Niland

Percent of map unit: 4 percent
Hydric soil rating: No

Glenbar

Percent of map unit: 4 percent
Hydric soil rating: No

Meloland

Percent of map unit: 4 percent
Hydric soil rating: No

Rositas

Percent of map unit: 3 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 8, Sep 12, 2016

Imperial County, California, Imperial Valley Area

143—Vint fine sandy loam

Map Unit Setting

National map unit symbol: h90l

Elevation: -230 to 310 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Vint and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vint

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed and/or eolian deposits derived from mixed

Typical profile

H1 - 0 to 10 inches: fine sandy loam

H2 - 10 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High
(1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Very slightly saline to slightly saline
(2.0 to 4.0 mmhos/cm)

Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 2s

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Hydric soil rating: No

Minor Components

Rositas

Percent of map unit: 5 percent

Hydric soil rating: No

Indio

Percent of map unit: 3 percent

Hydric soil rating: No

Meloland

Percent of map unit: 2 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area

Survey Area Data: Version 8, Sep 12, 2016

California Revised Storie Index (CA)

The Revised Storie Index is a rating system based on soil properties that govern the potential for soil map unit components to be used for irrigated agriculture in California.

The Revised Storie Index assesses the productivity of a soil from the following four characteristics:

- Factor A: degree of soil profile development
- Factor B: texture of the surface layer
- Factor C: steepness of slope
- Factor X: drainage class, landform, erosion class, flooding and ponding frequency and duration, soil pH, soluble salt content as measured by electrical conductivity, and sodium adsorption ratio

Revised Storie Index numerical ratings have been combined into six classes as follows:

- Grade 1: Excellent (81 to 100)
- Grade 2: Good (61 to 80)
- Grade 3: Fair (41 to 60)
- Grade 4: Poor (21 to 40)
- Grade 5: Very poor (11 to 20)
- Grade 6: Nonagricultural (10 or less)

Reference:

O'Geen, A.T., Southard, S.B., Southard, R.J. 2008. A Revised Storie Index for Use with Digital Soils Information. University of California Division of Agriculture and Natural Resources. Publication 8355. <http://anrcatalog.ucanr.edu/pdf/8335.pdf>

Report—California Revised Storie Index (CA)

California Revised Storie Index (CA)—Imperial County, California, Imperial Valley Area			
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)	
		Rating class	Value
121—Meloland fine sand			
Meloland	85	Grade 3 - Fair	55
143—Vint fine sandy loam			
Vint	90	Grade 1 - Excellent	95

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 8, Sep 12, 2016

**LESA ASSESSMENT
SEVILLE 4 SOLAR PROJECT
FIXED-FRAME ARRAY
(T16S, R12E, S25, SBB&M)**

IMPERIAL COUNTY, CALIFORNIA

July 2017

EMA Report No. 2375-02

Prepared for:

Titan Solar II LLC
604 Sutter Street, Suite 250
Folsom, CA 95630-2694



ENVIRONMENTAL MANAGEMENT ASSOCIATES

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LAND EVALUATION AND SITE ASSESSMENT MODEL

SEVILLE 4 SOLAR PROJECT FIXED-FRAME ARRAY (T12S, R9E, S25, SBB&M) IMPERIAL COUNTY, CALIFORNIA

The Land Evaluation and Site Assessment (LESA) model is an approach for rating the relative quality of land resources based upon specific measurable features. The LESA model was first developed by the federal Natural Resources Conservation Service (NRCS) in 1981. It was subsequently adapted in 1990 by the California Department of Conservation to evaluate land use decisions that affect the conversion of agriculture lands in California. The formulation of the California LESA Model is intended to provide lead agencies under the California Environmental Quality Act (CEQA) with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process.

For determining the potential CEQA significance resulting from the conversion of agricultural lands to some other purpose, the California Agricultural LESA Model has developed Scoring Thresholds which are used to compare the Final LESA Score and the Weighted Factor Scores for the Project with suggested Scoring Decisions. These LESA Scores do not take into consideration any proposed mitigation measures or other factors that might affect a lead agency's determination of the significance of the agricultural lands conversion impact under CEQA.

The information provided on the following pages present documentation of the LESA assessment prepared using the California Agricultural LESA Model for the Seville 4 Solar Project (Project). The proposed Seville 4 Solar Project, fixed-frame array, would be located on portions of the 572.1 acre parcel (APN 018-170-057-000) in west central Imperial County, California, approximately eight miles west of the junction of State Highway 78 and State Highway 86, and approximate three miles east of the San Diego County line. Of this parcel, only approximately 146 acres would become disturbed land; the rest is land which would not be disturbed (see Figure 1 and Figure 2).

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LESA ASSESSMENT
SEVILLE 4 SOLAR PROJECT
IMPERIAL COUNTY, CALIFORNIA

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E SURROUNDING AGRICULTURAL LAND RATING	7
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Date: 7/19/2017
 Author: Carey, D.

Seville 4 Solar Project
 Location Map

Project Location

Figure 1: Location Map

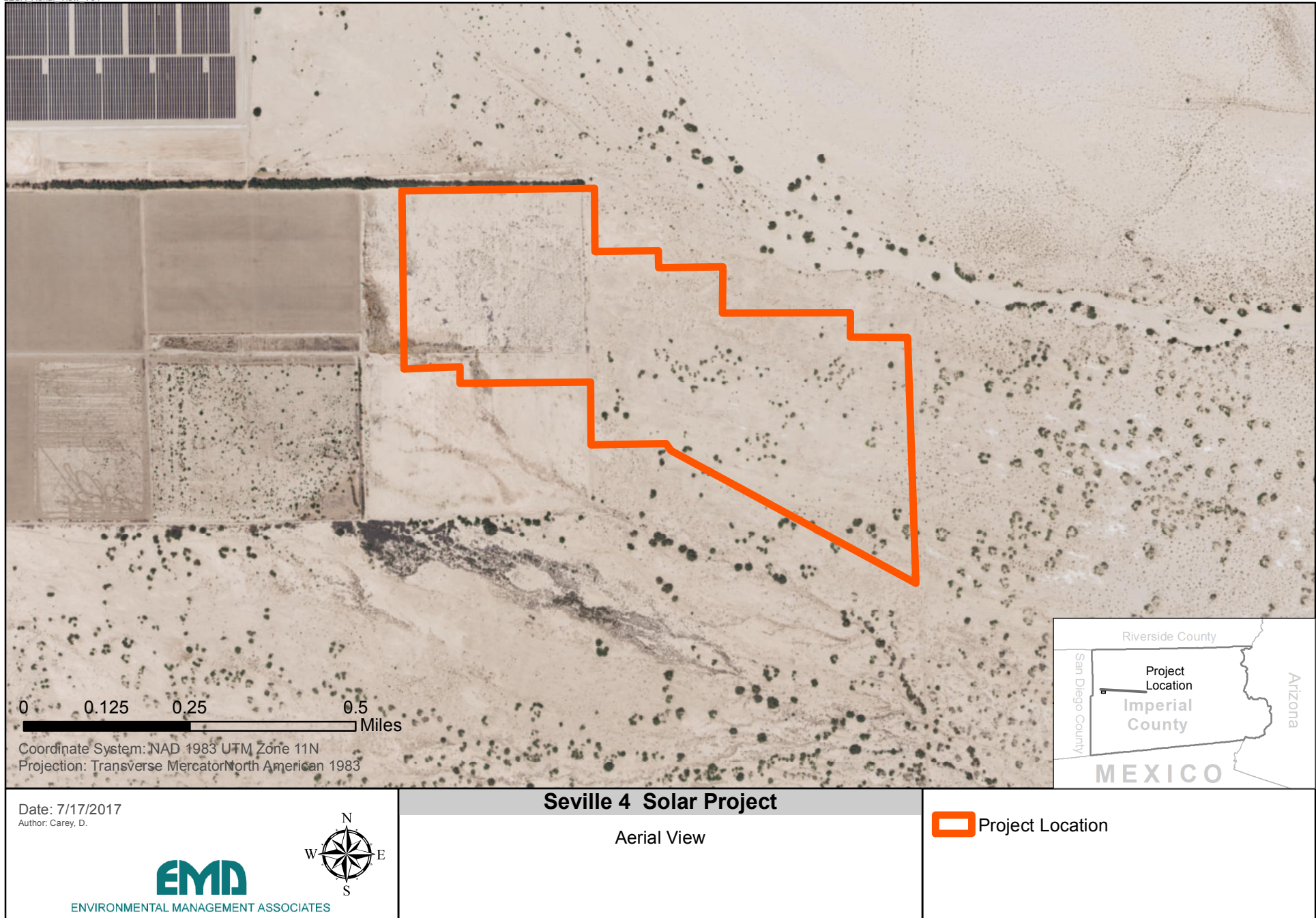
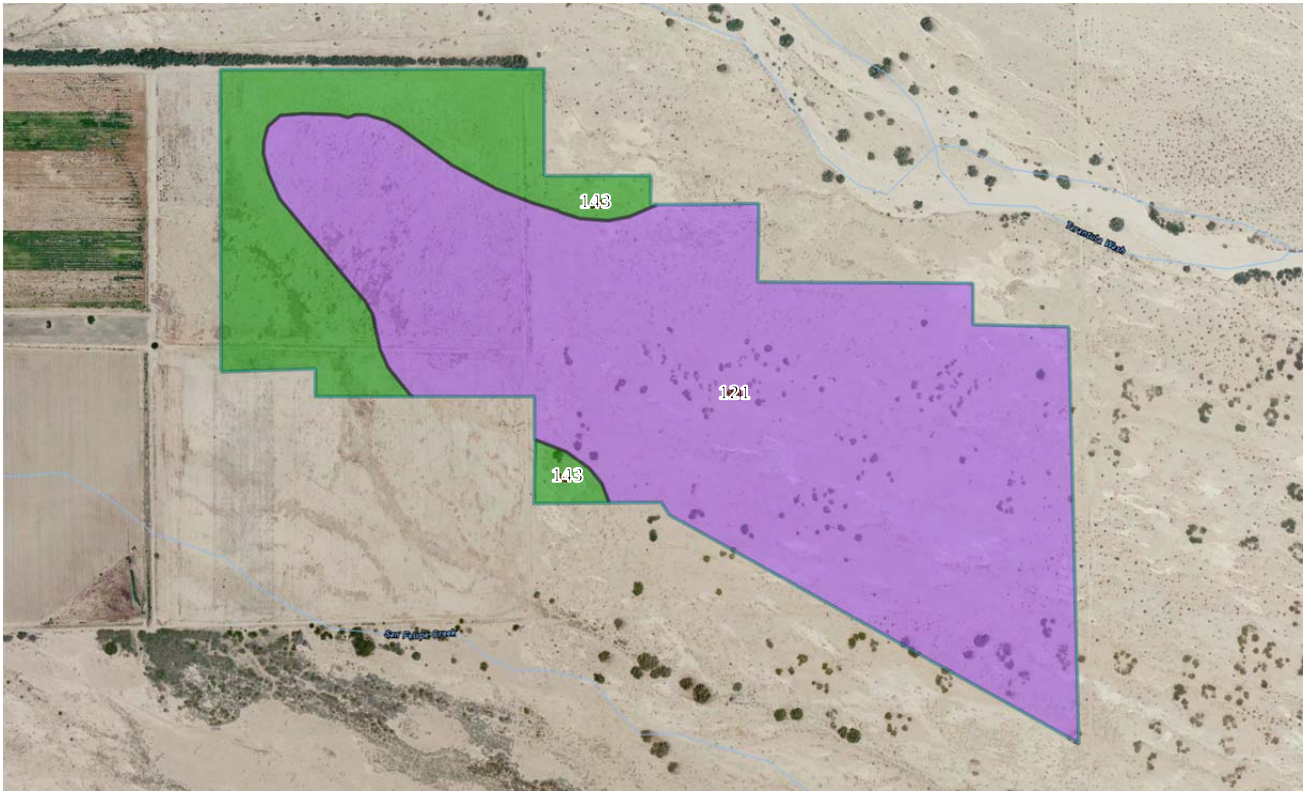


Figure 2 : Development Area on an Aerial Photographic Base

Land Evaluation Worksheet							
A	B	C	D	E	F	G	H
Soil Map Unit*	Project Acres	Proportion of Project Area	LCC** (nonirrigated)	LCC Rating (nonirrigated)***	LCC Score (C x E)	Storie Index**	Storie Index Score (C x G)
121	116.6	0.797	VIIe	10	7.97	55	43.84
143	29.7	0.203	VIIe	10	2.03	95	19.29
Totals	146.3	1.000		LCC Total Score	10.00	Storie Index Total Score	63.12
Total Project Area (acres)=	146.3						
* The Soil Map Unit information and acreage were determined from the current soil survey information available at the USDA Natural Resources Conservation Service website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Figure 3).							
** The Land Capability Classification and Storie Index information was obtained from the current soil survey information available at the USDA Natural Resources Conservation Service website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Appendix A).							
*** The LCC Rating for nonirrigated land was determined from the LCC Point Rating Table 2 from the LESA Instruction Manual (California Department of Conservation 1997).							



Tables — California Revised Storie Index (CA) — Summary By Map Unit					
Summary by Map Unit — Imperial County, California, Imperial Valley Area (CA683)					
Map unit symbol	Map unit name	Rating	Component name (percent)	Acres in AOI	Percent of AOI
121	Meloland fine sand	Grade 3 - Fair	Meloland (85%)	116.6	79.7%
			Meloland (4%)		
143	Vint fine sandy loam	Grade 1 - Excellent	Vint (90%)	29.7	20.3%
Totals for Area of Interest				146.3	100.0%

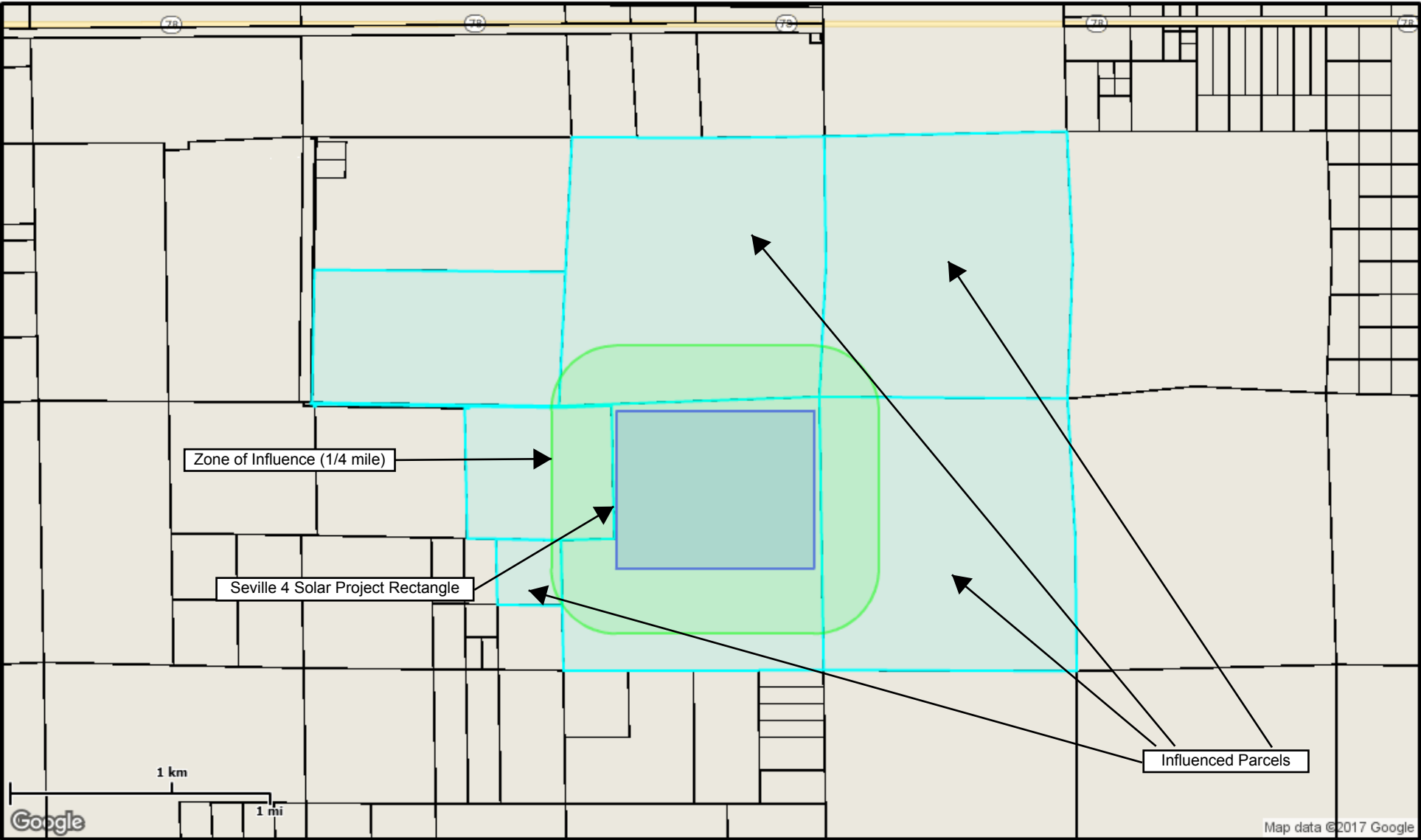
Figure 3: Development Area Soils Map

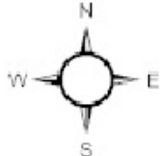

	Site Assessment Worksheet 1		
	Project Size Score*		
	I	J	K
	LCC Class I-II	LCC Class III	LCC Class IV-VIII
<i>Project Acres per LCC Class</i>			116.6
<i>Project Acres per LCC Class</i>			29.7
<i>Total Project Acres per LCC Class</i>			146.3
<i>* Project Size Scores</i>			40
<i>Highest Project Size Score</i>	40		
* Project Size Score was determined from the Project Size Scoring Table from the LESA Instruction Manual (California Department of Conservation 1997).			

Site Assessment Worksheet 2				
Water Resources Availability				
A	B	C	D	E
Project Portion	Water Source	Proportion of Project Area	Water Availability Score*	Weighted Availability Score (C x D)
1	Ground Water Only	1.0	65	65
2				
3				
4				
5				
6				
		(Must Sum to 1.0)	Total Water Resource Score	65
* The Water Availability Score was determined using the Water Resources Availability Scoring Table from the LESA Instruction Manual (California Department of Conservation 1997).				

Site Assessment Worksheet 3							
Surrounding Agricultural Land & Surrounding Protected Resource Land							
A	B	C	D	E	F	G	
Zone of Influence*					Surrounding Agricultural Land Score (From LESA Manual Table 6)	Surrounding Protected Resource Land Score (From LESA Manual Table 7)**	
Total Acres	Acres in Agriculture	Acres of Protected Resource Land	Percent in Agriculture (B/A)	Percent Protected Resource Land (C/A)			
2510.5	258	1323	10.3	53	0	30	
<p>* In conformance with the instructions in the LESA Instruction Manual (California Department of Conservation 1997), the Zone of Influence was determined by drawing the smallest rectangle that could completely encompass the entire Project Area. A second rectangle was then drawn which extended one quarter mile on all sides beyond the first rectangle. The Zone of Influence is represented by the entire area of all parcels with any lands inside the outer rectangle, less the area of the proposed project (Figure 4).</p> <p>** The LESA Instruction Manual (California Department of Conservation 1997) describes <i>Protected Resource Land</i> as those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following: Williamson Act contracted lands; Publicly owned lands maintained as park, forest, or watershed resources; and Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses.</p>							
Surrounding Parcels***	Acres	Protected Resource Land?	Percent Protected Resource Land	Acres in Protected Land	Agricultural Land?	Percent Agricultural Land	Acres of Agriculture
018-170-009	644.2	Y	100	644	N	0	0.0
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018-180-011	679.2	Y	100	679	N	0	0.0
018-220-007	40.8	N	0	0	N	0	0.0
Total	2510.5		Total	1323		Total	258
<p>***The Imperial County Assessors website was accessed to identify the surrounding parcel numbers (http://www.co.imperial.ca.us/assessor/). The percentage of agriculture was determined from a map overlay used to estimate the proportion of land in agriculture and the California Department of Conservation Important Farmland Map Series.</p>							

Figure 4: Zone of Influence



1" = 3,009 ft	Zone of Influence	Seville 4 Solar Project 07/12/2017		
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This map represents a visual display of related geographic information. Data provided hereon is not a guarantee of actual field conditions. To be sure of complete accuracy, please contact Imperial County staff for the most up-to-date information.

Final LESA Score Sheet				California LESA Model Scoring Thresholds	
	Factor Scores	Factor Weight	Weighted Factor Scores	Total LESA Score	Scoring Decision
LE Factors					
Land Capability Classification	10.00	0.25	2.50	0 to 39 Points	Not Considered Significant
Storie Index	63.12	0.25	15.78		
LE subtotal		0.50	18.28		
SA Factors					
Project Size	40	0.15	6.00	40 to 59 Points	Considered Significant <u>only</u> if LE <u>and</u> SA subscores are each <u>greater</u> than or equal to 20 points
Water Resource Availability	65	0.15	9.75		
Surrounding Agricultural Land	0	0.15	0.00	60 to 79 Points	Considered Significant <u>unless</u> either LE <u>or</u> SA subscore is <u>less</u> than 20 points
Protected Resource Land	30	0.05	1.50		
SA Subtotal		0.50	17.25		
		Total LESA Score	35.53	80 to 100 Points	Considered Significant

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APPENDIX A: SEVILLE 4 SOLAR PROJECT SOILS DETAILS

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Imperial County, California, Imperial Valley Area

121—Meloland fine sand

Map Unit Setting

National map unit symbol: h8zw

Elevation: -230 to 300 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Meloland and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Meloland

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed and/or eolian deposits derived from mixed

Typical profile

H1 - 0 to 12 inches: fine sand

H2 - 12 to 26 inches: stratified loamy fine sand to silt loam

H3 - 26 to 71 inches: clay

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 13.0

Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Niland

Percent of map unit: 4 percent
Hydric soil rating: No

Glenbar

Percent of map unit: 4 percent
Hydric soil rating: No

Meloland

Percent of map unit: 4 percent
Hydric soil rating: No

Rositas

Percent of map unit: 3 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 8, Sep 12, 2016

Imperial County, California, Imperial Valley Area

143—Vint fine sandy loam

Map Unit Setting

National map unit symbol: h90l

Elevation: -230 to 310 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Vint and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vint

Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed and/or eolian deposits derived from mixed

Typical profile

H1 - 0 to 10 inches: fine sandy loam

H2 - 10 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High
(1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Very slightly saline to slightly saline
(2.0 to 4.0 mmhos/cm)

Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 2s

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Hydric soil rating: No

Minor Components

Rositas

Percent of map unit: 5 percent

Hydric soil rating: No

Indio

Percent of map unit: 3 percent

Hydric soil rating: No

Meloland

Percent of map unit: 2 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area

Survey Area Data: Version 8, Sep 12, 2016

California Revised Storie Index (CA)

The Revised Storie Index is a rating system based on soil properties that govern the potential for soil map unit components to be used for irrigated agriculture in California.

The Revised Storie Index assesses the productivity of a soil from the following four characteristics:

- Factor A: degree of soil profile development
- Factor B: texture of the surface layer
- Factor C: steepness of slope
- Factor X: drainage class, landform, erosion class, flooding and ponding frequency and duration, soil pH, soluble salt content as measured by electrical conductivity, and sodium adsorption ratio

Revised Storie Index numerical ratings have been combined into six classes as follows:

- Grade 1: Excellent (81 to 100)
- Grade 2: Good (61 to 80)
- Grade 3: Fair (41 to 60)
- Grade 4: Poor (21 to 40)
- Grade 5: Very poor (11 to 20)
- Grade 6: Nonagricultural (10 or less)

Reference:

O'Geen, A.T., Southard, S.B., Southard, R.J. 2008. A Revised Storie Index for Use with Digital Soils Information. University of California Division of Agriculture and Natural Resources. Publication 8355. <http://anrcatalog.ucanr.edu/pdf/8335.pdf>

Report—California Revised Storie Index (CA)

California Revised Storie Index (CA)—Imperial County, California, Imperial Valley Area			
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)	
		Rating class	Value
121—Meloland fine sand			
Meloland	85	Grade 3 - Fair	55
143—Vint fine sandy loam			
Vint	90	Grade 1 - Excellent	95

Data Source Information

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 8, Sep 12, 2016