APPENDIX D

LAND EVALUATION AND SITE ASSESSMENT MODEL MERCED SOUTH 115 KV TRANSMISSION LINE AND SUBSTATION PROJECT

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LAND EVALUATION AND SITE ASSESSMENT MODEL

FOR THE

MERCED SOUTH 115 kV TRANSMISSION AND SUBSTATION PROJECT

PREPARED FOR:

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LAND EVALUATION AND SITE ASSESSMENT MODEL

Point Impact Analysis conducted an analysis using the California Agricultural Land Evaluation and Site Assessment (LESA) Model to determine the significance of the permanent loss of agricultural land from the approval of the Merced South Transmission Line, Substation, and Interconnection Project.

As described in Table 3.4-1 of Section 2, Project Description, the proposed MID project would require purchasing 11.2 acres for a substation and obtaining temporary and permanent easements on approximately 72.2 acres of for the 115 transmission lines (including laydown, access, and overhang easements). All but 11.4 acres of the 83.4 acres needed for the substation site and transmission easements are currently in agricultural production and would be on land that the Department of Conservation designates as Prime, Farmland, Farmland of Statewide Importance, and Unique Farmland. At the conclusion of construction the proposed utility uses would consist of up to 1.3 acres of agricultural land at the substation site and pole locations.

The following report describes the LESA model, shows the evaluation criteria and results of the analysis, and provides the final scoring for determining significance in accordance with the Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The LESA analysis was performed using a worst-case analysis of 50 ft easements along the route, resulting in a project size of 94.0 acres for the substation site and 115-kV transmission line easements.

LAND EVALUATION AND SITE ASSESSMENT MODEL (LESA) INTRODUCTION

The LESA Model was originally created by the California Department of Conservation (CDC) to rate the relative quality of land resources based upon specific measurable features (CDC, 1997). The LESA model is a result of Senate Bill 850, which charged the Resource Agency, along with the Governor's Office of Planning and Research, with developing an amendment to Appendix G of the CEQA Guidelines concerning agricultural lands. For this EIR, Point Impact Analysis used the LESA model's methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process. The LESA model contains two major categories: Land Evaluation and Site Assessment. The following criteria are the guidelines of the LESA model that Point Impact Analysis used to conduct the study:

- **Land Evaluation Factors**
    - Land Capability Classification (LCC) 25%
    - Storie Index Rating 25%

    Land Evaluation Subtotal **50%**

- **Site Assessment Factors**
    - Project Size 15%
    - Water Resource Availability 15%
    - Surrounding Agricultural Lands 15%
    - Surrounding Protected Resource Lands 5%

    Site Assessment Subtotal **50%**

TOTAL LESA FACTOR WEIGHING **100%**

EVALUATION

Point Impact Analysis used Geographic Information Systems (GIS) software to identify the areas that are being considered to have potentially significant impacts on agricultural resources.

Land Evaluation Factors

To determine the soil types within the project area, Point Impact Analysis used geospatial data from the Merced County Association of Governments (MCAG), Information for Important Farmland in Merced County from the California Department of Conservation (Merced County, 2011), and United States Department of Agriculture (USDA) Web Soil Survey. Twenty soil types were identified within the project area.. The following soils are the designated soil map units in Table 1: Land Evaluation Worksheet:

- BkA—Burchell silt loam, slightly saline-alkali, 0 to 1 percent slopes
- BnA—Burchell silty clay loam, 0 to 1 percent slopes
- BpA—Burchell silty clay loam, slightly saline-alkali, 0 to 1 percent slopes
- BrA—Burchell silty clay loam, moderately saline-alkali, 0 to 1 percent slopes
- GeA—Greenfield sandy loam, deep over hardpan, poorly drained variant, 0 to 1 percent slopes
- HtA—Honcut silt loam, 0 to 1 percent slopes
- LaA—Landlow clay, 0 to 1 percent slopes
- LeA—Landlow silty clay loam, 0 to 1 percent slopes
- LfA—Landlow silty clay loam, slightly saline-alkali, 0 to 1 percent slopes
- LgA—Lewis clay, slightly saline-alkali, 0 to 1 percent slopes
- LoA—Lewis silty clay loam, slightly saline-alkali, 0 to 1 percent slopes
- LpA—Lewis silty clay loam, moderately saline-alkali, 0 to 1 percent slopes
- LrA—Lewis silty clay loam, strongly saline-alkali, 0 to 1 percent slopes
- WnA—Wyman clay loam, deep over hardpan, 0 to 1 percent slopes
- WoA—Wyman clay loam, 0 to 3 percent slopes
- WrA—Wyman loam, 0 to 3 percent slopes
- YbA—Yokohl clay loam, 0 to 3 percent slopes

Additionally, Point Impact Analysis used a Storie Index Soil Rating from the Division of Agricultural Sciences at UC Davis, which rates soil based on the following characteristics:

- Physical character rating (Factor A);
- Surface texture rating (Factor B);
- Slope rating (Factor C);
- And additional conditions such as: salinity, erosion, drainage, nutrient level (Factor X).

The Storie Index Soil Rating criteria and evaluations appear in Table 1: Land Evaluation Worksheet (Storie and Weir, 1940). The United States Department of Agriculture (USDA) uses the National Resource Conservation Service Survey (NRCSS) to describe soils and allows users to interpret specific soil explanations and criteria. Point Impact Analysis obtained Storie Index scores from the UC Davis California Soil Resources Lab SoilWeb.

TABLE 1
LAND EVALUATION WORKSHEET

Soil Map Unit	Project Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
BkA	1.65	0.02	2w	80	1.4	27	0.5
BnA	0.45	0.00	2w	80	0.4	27	0.1
BpA	2.53	0.03	2w	80	2.2	26	0.7
BrA	3.58	0.04	3w	60	2.3	13	0.5
GeA	2.39	0.03	3w	60	1.5	12	0.3
HtA	2.59	0.03	1	100	2.8	98	2.7
LaA	6.27	0.07	2w	80	5.3	34	2.3
LeA	18.96	0.20	2w	80	16.1	61	12.3
LfA	7.51	0.08	2w	80	6.4	50	4.0
LgA	3.75	0.04	3s	60	2.4	18	0.7
LoA	7.16	0.08	3s	60	4.6	16	1.2
LpA	8.91	0.09	4s	40	3.8	16	1.5
LrA	1.30	0.01	6s	20	0.3	16	0.2

Soil Map Unit	Project Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
WnA	11.23	0.12	2s	80	9.6	87	10.4
WoA	6.86	0.07	1	100	7.3	87	6.4
WrA	3.53	0.04	1	100	3.8	97	3.6
YbA	5.32	0.06	4s	40	2.3	23	1.3
Totals	**93.98**	**1.00**			**72.28**		**48.73**

According to the data from the California Department of Conservation, not every soil type within the proposed project area would be considered suitable Prime, Important Statewide, or Unique Farmland.

Site Assessment Factors

The Site Assessment portion of the LESA Model scores the different Land Capability Classifications by size (in acres) in the project area. Point Impact Analysis identified 61.6 acres of Class I-II soils, 16.9 acres of Class III soils, and 15.5 acres of Class IV-VIII soils in the project area. Project size is the basis for the LCC Soils scores. The LCC Class I-II category in the LESA Model has between 60-79 acres, which earns a Project Size Scoring of 90. The LCC class with the highest amount of acres is the value used for the Project Size Score. Table 2 shows the acres and scoring sheet of the LCC soils identified in the project area.

Table 2
SITE ASSESSMENT WORKSHEET 1
PROJECT SIZE SCORE

	LCC Class I-II	LCC Class III	LCC Class IV-VIII
Acres	**61.6**	**16.9**	**15.5**
Project Size Scores	**90**	**10**	**0**

The second part of the Site Assessment portion of the LESA model reports water resources availability. Table 3 shows the water score, proportion of the project area, water availability scoring, and the cumulative score for water availability within the project area. Point Impact Analysis calculated the weighted availability score by multiplying the proportion of the project area by the water availability score.

Table 3
SITE ASSESSMENT WORKSHEET 2
WATER RESORUCES AVAILABILITY

Project Portion	Water Source	Proportion of Project Area	Water Availability Score	Weighted Availability Score (CxD)
1	Irrigation Water	1.0	90	90.0
Total Water Resource Score				**90.0**

The third area within Site Evaluation in the LESA model examines surrounding agricultural lands. Point Impact Analysis used Geographic Information Systems (GIS) software to calculate and identify the surrounding agricultural land rating, which is based on the identification of the project's Zone of Influence (ZOI). The Zone of influence is land that is near a given project, both directly adjoining and within a defined distance way. Calculating the percentage of the project's zone of influence provides the basis for the surrounding agricultural land rating. Point Impact Analysis calculated that 97 percent of the surrounding land is in agriculture. According to the LESA model, the percent of the project's ZOI that is identified between 90-100 percent earns a score of 100 points (See Table 4).

The last section of Site Assessment is based on the surrounding protected resource land rating. This is essentially an extension of the surrounding agricultural land rating with a similar manner of scoring Protected resource lands are those lands with long-term use restrictions that are compatible with or supportive of agricultural uses of land. These include the following:

- Williamson Act contracted lands
- Publicly owned lands maintained as forest, park, or watershed resources
- Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses

The same Zone of Influence used in the surrounding agricultural land rating is used for this section. The LESA model criteria found that 29.0 percent of the surrounding land within a quarter mile of the project area is in within protected resource land. According to the LESA model, anything below 40 percent in the surrounding protected resource land rating score is 0 (See Table 4).

RESULTS

Based on a scale of 100 points, the final scoring of the project was 72.3 points. According to the LESA model in accordance with the CEQA thresholds, this score is considered significant unless either Land Evaluation or Site Assessment subscore is less than 20 points. Table 5 shows the

California LESA modeling score thresholds in determining the significant impacts on agricultural resources.

Using the conclusion of the LESA model, Point Impact Analysis determined that the level of significance of the conversion of agricultural lands (Section 6.4) is considered to be ***Significant***.

Table 4
FINAL LESA SCORING SHEET

Factor Name	Factor Rating (0-100 points)	x	Factor Weighting (Total=1.00)	=	Weighted Factor Rating
			Land Evaluation		
1. Land Capability Classification	72.3	x	0.25	=	**18.1**
2. Storie Index Rating	48.7	x	0.25	=	**12.2**
			Site Assessment		
1. Project Size	90	x	0.15	=	**13.5**
2. Water Resource Availability	90	x	0.15	=	**13.5**
3. Surrounding Agricultural Lands	100	x	0.15	=	**15.0**
4. Protected Resource Lands	0	x	0.05	=	**0.0**
TOTAL LESA SCORE (sum of weighted factor ratings)					**72.3**

Table 5
CALIFORNIA LESA MODEL SCORING THRESHOLDS

Total LESA Score	Scoring Decision
0-39 Points	Not considered significant
40-59 Points	Considered significant only if LE and SA subscores are each greater than or equal to 20 points
60-79 Points	Considered significant unless either LE or SA subscore is less than 20 points
80-100 Points	Considered significant

REFERENCES

California Department of Conservation. California Agricultural Land Evaluation and Site Assessment Model: Instruction manual. 1997.

California Department of Conservation. Farmland Mapping and Monitoring Program. 2010.

Storie, R. Earl and Waller Weir. Manual for Identifying and Classifying California Soil Series. 1948. Accessed online at: http://soils.usda.gov/survey/ on October 10, 2012.

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