Stantec

AGRICULTURAL LAND CONVERSION STUDY

Zeta Solar and Battery Energy Storage System Project

July 2024

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Executive Summary

The Zeta Solar and Battery Energy Storage System Project (project) would consist of the development of a photovoltaic solar facility in western Merced County, California, approximately 9 miles southwest of the City of Los Banos. The project site consists of approximately 650 acres plus an additional 1,700-foot-long generation tie-in line and lies almost entirely on fallow agricultural land that is designated primarily as Prime Farmland or Farmland of Local Importance by the California Department of Conservation's Farmland Mapping and Monitoring Program.

The Land Evaluation Site Assessment (LESA) is a recognized methodology for determining potential impacts on agricultural resources due to projects, typically related to Prime Farmland conversion. The project's LESA score of 39.86 indicates that the project impacts on agricultural resources would not be significant.

Merced County Policy AG-3.11: Solar and Wind Energy Production Facilities, encourages installation of solar production facilities in agricultural areas so long as they do not result in a tax burden to the County, do not result in permanent water transfers off of agricultural land, or do not require cancellation of Williamson Act contracts. The project would only result in temporary (approximately 40 years) conversion of farmland (compared to more permanent urban development) and based on the project's LESA score of 39.86, the proposed project impacts on agricultural resources would not be significant.

Abbreviations

BESS	Battery Energy Storage System
CEQA	California Environmental Quality Act
County	Merced County
FMMP	Farmland Mapping and Monitoring Program
Gen-tie	Generation-tie
I-5	U.S. Interstate 5
LCC	Land Capability Classification
LE	Land Evaluation
LESA	Land Evaluation Site Assessment
NRCS	Natural Resources Conservation Service
project	Zeta Solar and Battery Energy Storage System
PV	photovoltaic
SA	Site Assessment
SLWD	San Luis Water District
Stantec	Stantec Consulting Services Inc.
USDA	U.S. Department of Agriculture
Williamson Act	California Land Conservation Act of 1965
WSS	Web Soil Survey
ZOI	Zone of Influence

1 Introduction

The purpose of this Agricultural Conversion Study is to quantifiably evaluate the potential impacts of the Zeta Solar and Battery Energy Storage System (BESS) Project (project) on agricultural resources located on and adjacent to the project site.

Several factors are evaluated when determining whether implementation of a particular project would have a significant impact on agricultural resources. One factor is the existing land uses on the project site. Another consideration is the project site's designation under the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP), which produces maps and statistical data used for analyzing impacts on California's agricultural resources. Another factor is whether the project site is under a Williamson Act (California Land Conservation Act of 1965) Contract, which enables local governments to enter into contracts with private landowners to restrict specific parcels to agricultural, open space, or other compatible uses.

An Agricultural Conversion Study is a resource that may be used to determine whether a project would result in a significant impact on agricultural resources under the California Environmental Quality Act (CEQA). The Agricultural Conversion Study incorporates the points-based Land Evaluation Site Assessment (LESA) method for rating the relative importance of agricultural lands based upon specific quantifiable elements. LESA is a recognized methodology by the State of California for determining potential impacts on agricultural resources as a result of the project by evaluating measures of soil resource quality, project size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. According to the LESA Instruction Manual (DOC 1997), the focus of the LESA is typically related to Prime Farmland conversion as provided in Appendix G of the CEQA Guidelines.

2 Project Description

The project would involve the construction and operation of a photovoltaic (PV) solar and BESS facility in western Merced County (County), California, approximately 9 miles southwest of the City of Los Banos. The project site is approximately 650 acres plus an additional 1,700-foot-long generation tie-in (gen-tie) line that would extend from the project substation to the Mercy Springs Substation, located north of the project site. Disturbance in the gen-tie corridor would be limited to pole placement (with an approximate pole diameter of 18 to 24 inches) and a 20-foot by 20-foot temporary work area buffer around each pole. Placement of gen-tie poles would result in negligible permanent disturbance. The project site consists of fallow agricultural lands. Land uses surrounding the project site mostly consist of undeveloped agricultural lands to the north, south, and east, and a small developed (0.15 acre) site. Poleline Road abuts the southwestern project site boundary, and U.S. Interstate 5 (I-5) runs parallel approximately 0.2 mile to the west of the project site. First Lift Canal Road lies along the western boundary of the project site, and the eastern boundary abuts an unnamed dirt/gravel road. The proposed gen-tie line terminates to the north at the existing Mercy Springs substation. An existing solar PV facility (the Vega Solar Project) is located to the east and northeast of the Mercy substation, and about 975 feet north of the project site. Surrounding areas east of I-5 are primarily active agricultural lands; and surrounding areas west of I-5 are primarily undeveloped, hilly grasslands used for cattle grazing. The project site is in unincorporated Merced County and is within the County's General Plan Planning Area.

The project generation facility would occupy all or portions of three parcels identified by Merced County as Assessor Parcel Numbers (APNs) 090-130-018, and 090-130-044, and 090-130-060. The gen-tie line would extend north through APN 088-180-063 to the point of interconnection in APN 090-103-059. The three parcels are designated Agricultural by the County General Plan and zoned Exclusive Agricultural (A-2) (Merced County 2022a).

2.1 Existing Agricultural Production

There has been no agricultural production on the site for over 10 years. The landowner bought the land in 2010, and the land was not productive at the time of purchase. The following year, the landowner entered into a Restrictive Covenant Prohibiting Irrigation with the San Luis Water District (SLWD), and the land has not been irrigated since that time. From 2012 to 2018, dryland plants were planted on the project site as a weed-control measure, but these plants were not irrigated. The land laid fallow for 3 years between 2018 and 2020 until project site neighbors alerted the landowner of weeds blowing over to the neighboring properties. To mitigate the concern, the landowner brought in grazing sheep and goats in 2021 as a weed-control measure.

3 Agricultural Productivity in Merced County

3.1 Crop Production

Agriculture is the prominent economic segment in the County and accounts for more than 90 percent of all land area within the County. Merced County is ranked fifth among counties in California and sixth in the nation in the annual market value of farm products (Merced County 2012a).

In 2020, Merced County agricultural commodities grossed over $3.4 billion. The top 10 commodities for 2020, listed in descending order of gross value, were as follows (Merced County 2020):

- Milk: $1,050,940,000
- Almonds: $470,603,000
- Chickens: $318,522,000
- Sweet Potatoes: $269,895,000
- Cattle and Calves: $262,187,000
- Tomatoes: $145,056,000
- Silage (corn): $104,347,000
- Miscellaneous Vegetables: $95,011,000
- All Nursery Products: $75,109,000
- Eggs (chicken): $72,120,000

The County's agricultural commodities grossed $3.4 billion in 2020, which represented an increase of seven percent from the 2019 total value. Milk has dominated the top spot in commodities for over 10 years, generally accounting for a third of the County's total agricultural value; and it continues to remain the County's leading commodity. Almonds have held steady as the second leading commodity, with the gross production value increasing 12 percent from 2019.

3.2 Farmland Mapping and Monitoring Program

The California Department of Conservation established the FMMP in 1982. The FMMP is a non-regulatory program and provides a consistent and impartial evaluation of agricultural land use and land use changes throughout California (DOC 2023a). The FMMP produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural lands are rated according to soil quality and irrigation status. The FMMP's Important Farmland map categories include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, and Other Land. FMMP maps are updated every 2 years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance.

The FMMP Important Farmland categories are defined as:

- **Prime Farmland** is defined by the FMMP as farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time in the 4 years prior to the mapping date to qualify as Prime Farmland.

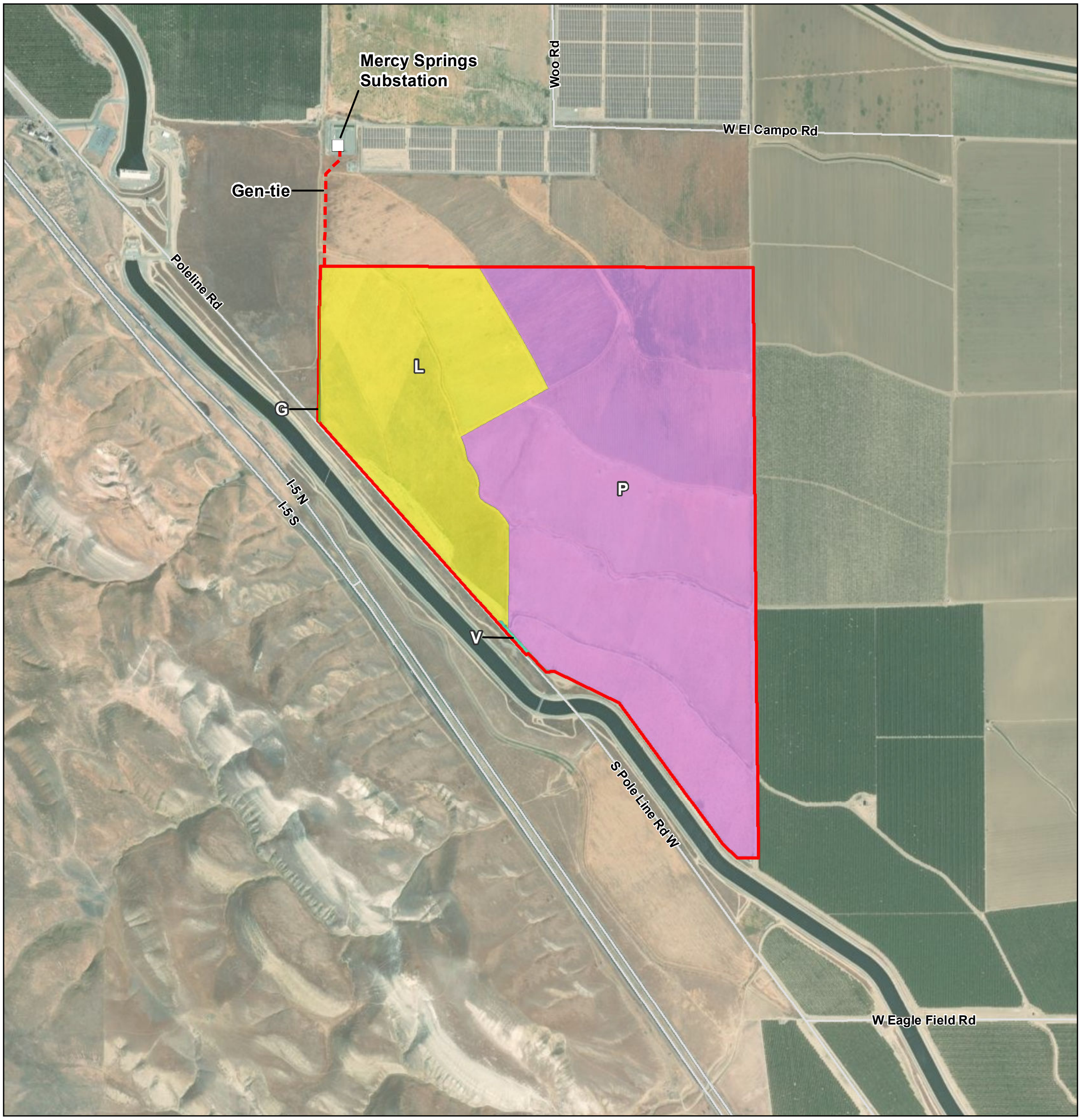
- **Farmland of Statewide Importance** is defined by the FMMP as farmland similar to Prime Farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date to qualify as Farmland of Statewide Importance.
- **Unique Farmland** is defined by the FMMP as farmland of lesser quality soils but which is still used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date to qualify as Unique Farmland.
- **Farmland of Local Importance** is defined by the FMMP as land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land** is defined by the FMMP as land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.
- **Other Land** is defined by the FMMP as land not included in any other mapping category. Common examples include low-density rural developments, brush, timber, wetland, and riparian areas not Suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant land and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is also mapped as Other Land.

According to the FMMP, approximately 33,487 acres of agricultural land uses in the County were converted to urbanized uses between 1992 and 2018 (DOC 2018). During this period, the County lost 9,400 acres of land designated as Important Farmland by the FMMP. Total agricultural land in the County decreased by 2.8 percent and Important Farmland decreased by 1.6 percent during this time.

3.2.1 PROJECT SITE FMMP CLASSIFICATION

According to the latest Important Farmland (IFL) data from 2018, the project site consists of 462.01 acres of Prime Farmland, 185.47 acres of Farmland of Local Importance, 0.65 acre of Grazing Land, and 1.77 acres of Vacant or Disturbed Land. Figure 1 depicts FMMP farmland types in the project site.

Although the project site is partially designated as Prime Farmland under the 2018 maps, based on more recent information from the DOC and its review of site conditions, described herein, the project site's agricultural designation is expected change over the next several years.



Project Area (649.92 acres)
Gen-tie
Mercy Springs Substation

Farmland Type

P: Prime Farmland (462.01 ac.)
L: Farmland of Local Importance (185.47 ac.)
G: Grazing Land (0.65 ac.)
V: Vacant or Disturbed Land (1.77 ac.)

Source: Farmland Mapping and Monitoring Program, California Department of Conservation, Division of Land Resource Protection, June 2023

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Project Location
Merced County, CA

Prepared by PG on 2024-07-08
TR by JW on 2024-07-09

Client/Project
Longroad Energy Management, LLC
Zeta Solar and Battery Energy Storage System Project

Figure 1

Title
Important Farmland

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As provided above, for land to qualify as Prime Farmland, the land must have been used for irrigated agricultural production at some time in the 4 years prior to the mapping date. Accordingly, the currently designated Prime Farmland on the project site may be reclassified if it has been fallow for 4 years from the last map update.

As identified through coordination with the DOC, in 2016 the southern portion of the area classified Prime Farmland showed a lack of irrigation. In addition, in 2018 both the southern and northern portions of the area classified as Prime Farmland showed a lack of irrigation. All currently designated Prime Farmland on the site has remained unirrigated and fallow for over 4 years since the last map update (which occurred in 2018). Therefore, the DOC has indicated it will be removing the Prime Farmland designation from project site, if the site remains unirrigated and fallow. DOC expects to re-designate the southern portion of the classified land in its ongoing update based on 2020 data, and the northern portion in the following update based on 2022 data (Michael Kisko, personal communication, February 24, 2023) in the 2020 and 2022 maps. Because the DOC's official reclassification process lags behind the calendar year by a year or more, the subsequent LESA analysis conservatively relies upon the current classification of Prime Farmland. However, by the time the project is approved for construction, it is anticipated that no Prime Farmland will remain on the project site or be affected by construction.

3.3 Williamson Act Contract Land

The Land Conversion Act of 1965 (also known as the Williamson Act) is a statewide program that allows property owners to enter into a contract with the County to maintain their land in agricultural production. The purpose of the Williamson Act is to preserve agricultural and open space lands by discouraging premature and unnecessary conversion to urban uses. In return, the landowners receive property tax assessments based on farming and open space uses, as opposed to full market value, thus resulting in a lower tax burden. All contracts are for a term of 10 years and automatically renew unless a Notice of Non-Renewal is filed by the owner. (DOC 2023b)

The County Assessor's office is responsible for the assessment and administration of the Williamson Act. The Assessor's office annually updates the taxable values and responds to the ever-increasing information inquiries by property owners, prospective property owners, real estate agents, etc. In 2008, the state's subvention (i.e., tax reimbursement) monies were reduced by 10 percent due to the state budget; and from 2009 forward, the subvention funds were essentially eliminated.

In July 2000, pursuant to the state Williamson Act, the Merced County Board of Supervisors adopted Local Rules of Procedures, a Fee Schedule Policy, a Contract Template and established an Agricultural Preserve boundary, thereby creating a local voluntary, differential tax assessment program to preserve agricultural lands. In August 2009, the Board of Supervisors determined that it would not accept any new land under Williamson Act Contract as a result of state action to halve subvention payments to the County. According to the County's General Plan Environmental Impact Report, as of 2009, Merced County had approximately 467,679 acres enrolled in the Williamson Act Contract (Merced County 2012b).

According to the County's records, no parcels under Williamson Act contracts are currently located on the project site (Merced County 2022a). However, there are parcels under Williamson Act contracts located to the south, north, and east of the project site. Parcels under Williamson Act contracts to the south of the project site are located within the project's zone of influence (ZOI) (Figure 2).

3.4 LESA Model

The LESA model was developed to provide a lead agency with an analysis methodology so that potentially significant environmental effects of agricultural land conversions are quantitatively and consistently considered in the environmental review process (Public Resources Code Section 21095), including during CEQA reviews. As a lead agency, the County may depend on the LESA model to evaluate the significance of agricultural land conversions.

The LESA model evaluates and measures a project site's size, soil resource quality, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. These factors are then rated, weighted, and combined, resulting in a single numeric score. This score becomes the basis for determining the significance of a project's potential impacts on agricultural resources.

Using the LESA model, a project would result in a significant impact on agricultural resources if the project meets the threshold criteria provided in Table 1. The criteria include a Land Evaluation (LE) scoring threshold and a Site Assessment (SA) scoring threshold.

Table 1. California LESA Model Scoring Thresholds

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

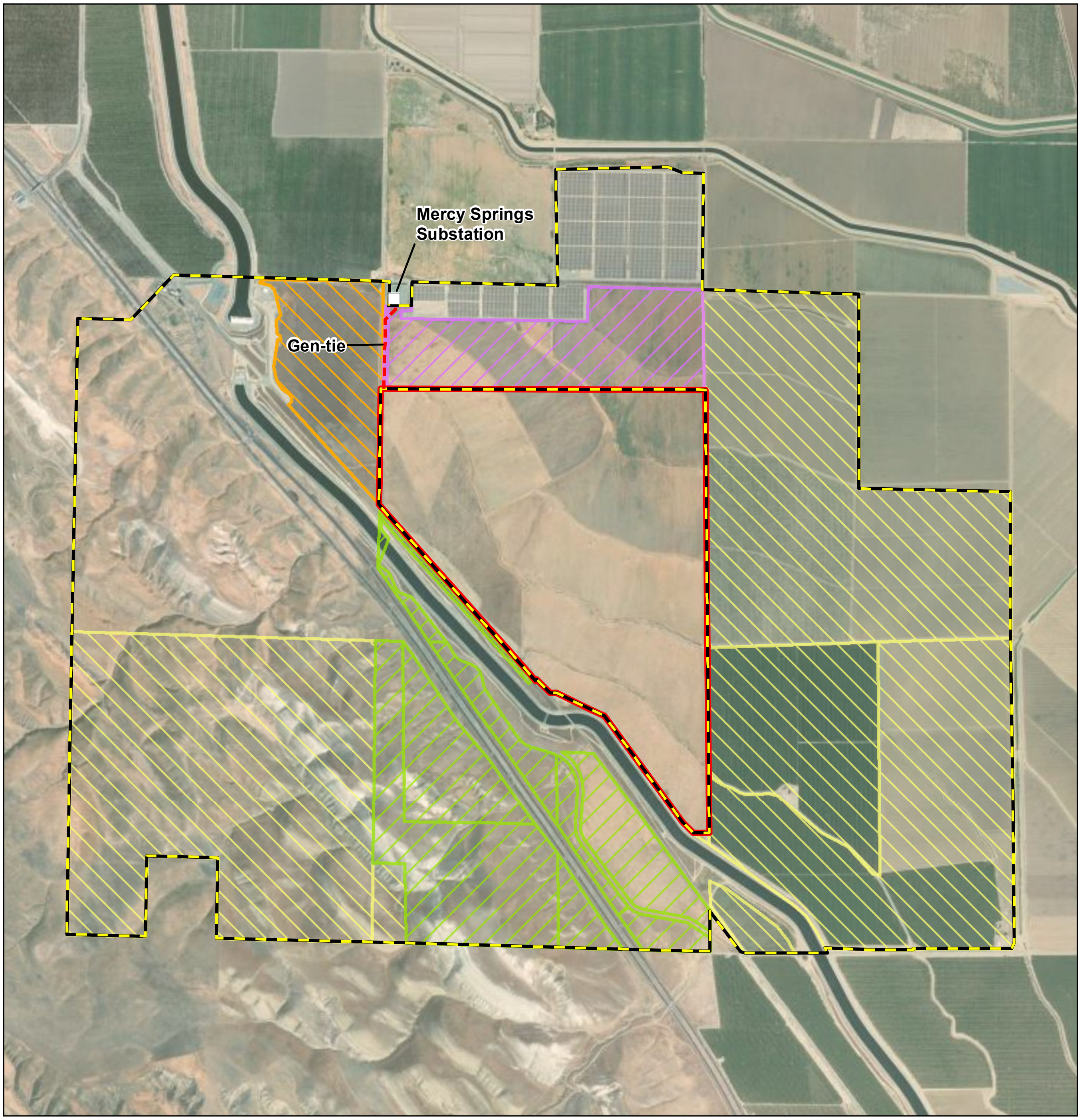
Source: California Agricultural Land Evaluation and Site Assessment Model (DOC1997)

The LESA worksheets prepared for the project to evaluate the project's potential impacts are provided in Appendix A.

3.5 Land Evaluation

There are two LE factors used in the LESA to determine whether a project would have a significant impact on agricultural resources:

- Land Capability Classification rating
- Storie Index rating



Project Area (649.92 acres)

Gen-tie

Mercy Springs Substation

Zone of Influence (3,493.83 acres)

CDFW Wildlife Area (122.78 acres)

Conservation Easement** (180.59 acres)

Agricultural Preserves

Williamson Act Land (418.65 acres)

Other Agricultural Preserve Land (1,768.49 acres)

* Source: California Natural Resources Agency, California Conservation Easement Database, December 2022
** Source: County of Merced Assessors Department, August 2022.

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Project Location
Merced County, CA

Prepared by PG on 2024-07-08
TR by JW on 2024-07-09

Client/Project
Longroad Energy Management, LLC
Zeta Solar and Battery Energy
Storage System Project

Figure 2

Title
Protected Resource Lands

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3.5.1 LAND CAPABILITY CLASSIFICATION

The Land Capability Classification (LCC) rating is based on the suitability of on-site soils for growing crops. The LCC rating includes eight classes of soil designations (identified as Class I through Class VIII), with soils identified as "Class I" having the fewest limitations, and soils designated as "Class VIII" being the least suitable for cropland. The types of on-site soils serve as an indicator of how valuable the project site is as an agricultural resource and, thus, serve as a measure of the capacity of a parcel to produce agricultural products. As such, a parcel with highly valued agricultural soils would rate higher in terms of land capability than a parcel with poorly valued soils. Class I through Class IV are generally considered arable land suitable for cropland (although Class IV contains severe limitations on the types of plants that can be grown), and Class V through Class VIII are generally considered to be unsuitable for cropland, but may have uses for pasture, range, woodland, or grazing. The criteria used to determine a particular soil class is based on landscape location, slope of field, depth, texture, and reaction of the soil.

Subclasses, designated with a lower-case letter (identified as e, w, s, or c), are typically used in conjunction with the roman numerals to further describe soil limitations. The letter "e" shows that the main limitation of the soil is erosion; "w" shows that the presence of water either within or on the soil causes limitation in plant growth; "s" shows that the soil is shallow, droughty, or stony; and "c" shows that the limitation is a climate that is generally too cold or hot for many plants. The c subclass is only used in some parts of the United States where the chief limitation is a climate that is too cold or too dry. There are no subclasses for Class I because these soils are considered to have few limitations.

The LESA model takes the LCC classifications and assigns a numeric value between 0 and 100 to indicate higher favorability for agricultural production. The numeric value assigned is referred to as the LCC rating. Table 2 provides various combinations of LCC classes and subclasses, and their associated LCC ratings.

Table 2. Land Capability Classifications and Ratings

Land Capability Classification	LCC Rating
I	100
IIe	90
IIs, w	80
IIIe	70
IIIs, w	60
IVe	50
IVs, w	40
V	30
VI	20
VII	10
VIII	0

Key: LCC = Land Capability Classification

To determine the LCC classifications associated with the on-site soils, the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service's (NRCS) Web Soil Survey (WSS) was used (USDA 2021). The WSS provides soil data and information produced by the National Cooperative Soil Survey. It is maintained by the NRCS and provides access to one of the largest natural resource information systems worldwide. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent soon. The WSS is updated and maintained online as the single authoritative source of soil survey information. According to the WSS, soils found on the project site consist of LCC Class IVe, IVs, and IVw soils (Figure 3). Table 3 provides the soil types found on the project site and their respective LCC class, rating, and score.

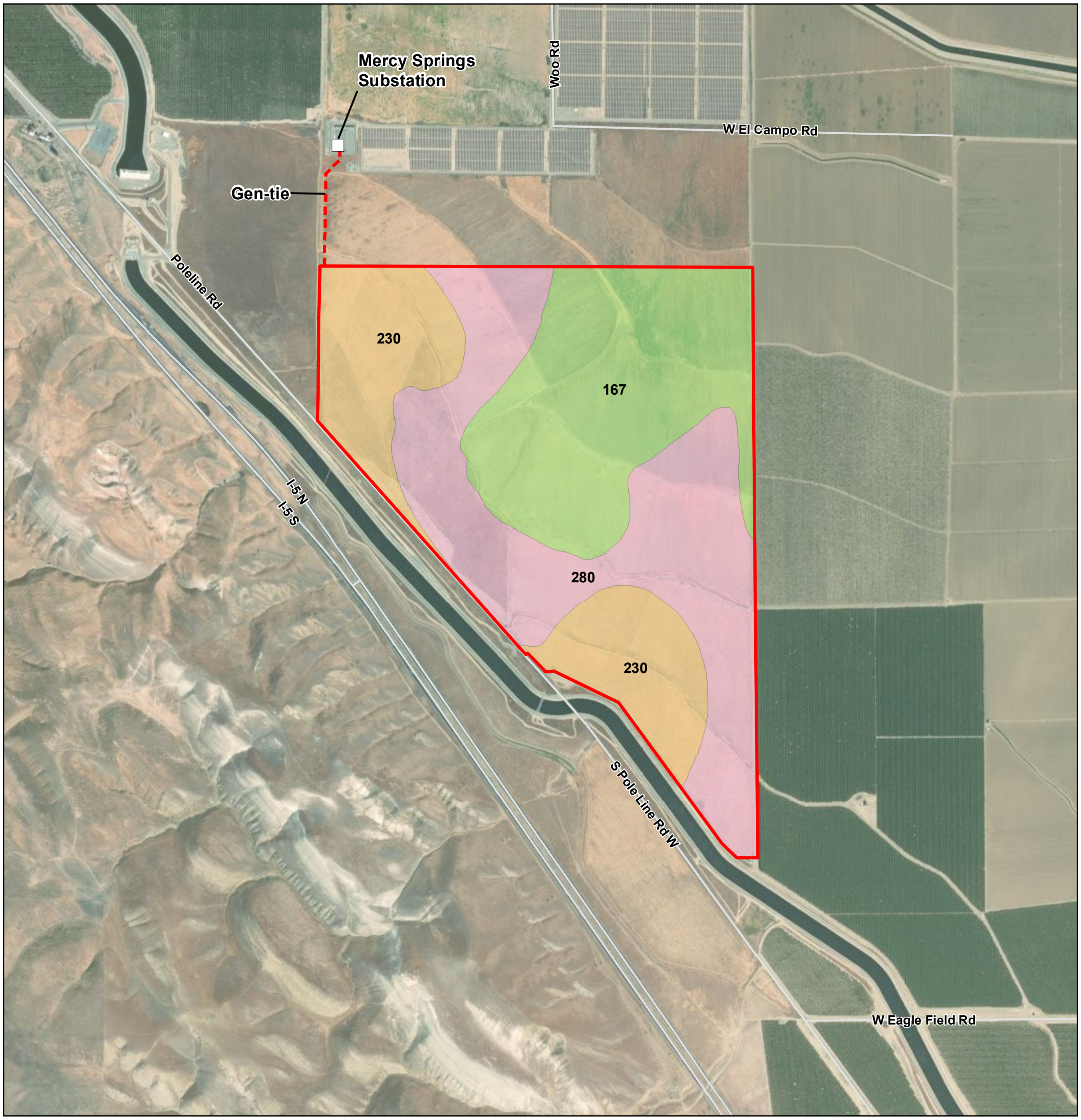
The rating information provided in Table 2 was used to derive an LCC score based on the LCC rating and the proportion of the project site covered by each soil (calculated by multiplying the LCC rating by the proportion of the site covered by a particular soil). The results of these calculations are provided in Appendix A.

As presented in Table 3, the project site's 223.54 acres of Deldota clay received an LCC Rating of 40; the site's 161.99 acres of Paver clay received a rating of 50; and the site's 264.37 acres of Woo clay received a rating of 40. As shown in Table 3, the overall weighted LCC score for the project site was 42.49.

Note that much of the project site is on the Deldota soil type, a partially drained soil which is considered drainage impaired. In addition, all soils on the project site are formed in clays deposited in marine environments, which are high in salinity. As identified in the USDA's Soil Survey of Merced County, most of the alluvial soils in the area are to some degree saline, sodic, or saline-sodic and many saline, sodic, and saline-sodic soils in the area are very poorly drained, poorly drained, or somewhat poorly drained (USDA 1990). Agricultural benefit from these soils is largely dependent on the development of drainage and flushing native salts. The massive salt discharges associated with these soils have led to the need for covenants to restrict irrigation in the area to reduce salinity impacts on the water system.

Table 3. Project Soils

Soil Map Unit	Acreage	LCC	LCC Rating	LCC Score
167 – Deldota clay, partially drained	223.54	IVw	40	13.76
230 – Paver clay loam, 2–5% slopes	161.99	IVe	50	12.46
280 – Woo clay, 0–2% slopes	264.37	IVs	40	16.27
Weighted LCC Score	—	—	—	**42.49**



Project Area (649.92 acres)
Gen-tie
Mercy Springs Substation

Soil Type

167 - Deldota clay, partially drained (223.54 ac.)
230 - Paver clay loam, 2 to 5 percent slopes (161.99 ac.)
280 - Woo clay, 0 to 2 percent slopes (264.37 ac.)

Source: U.S. Dept. of Agriculture, Natural Resources Conservation Service, SSURGO Soils Database, Aug. 2022

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Project Location
Merced County, CA

Prepared by PG on 2024-07-08
TR by JW on 2024-07-09

Client/Project
Longroad Energy Management, LLC
Zeta Solar and Battery Energy Storage System Project

Figure 3

Title
USDA Soils

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3.5.2 STORIE INDEX

The Storie Index is a soil rating based on a soil's physical and chemical characteristics that numerically represents its relative degree of suitability for cultivated agricultural production. The 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, slope; and factor X, manageable features, including drainage, microrelief, fertility, acidity, erosion, and salt content. A score ranging from 0 to 100 percent is determined for each factor, and the scores are then multiplied together to derive an index rating.

For simplification, Storie Index ratings have been combined into six grade classes as follows: Grade 1 (excellent), 100 to 80; grade 2 (good), 79 to 60; grade 3 (fair), 59 to 40; grade 4 (poor), 39 to 20; grade 5 (very poor), 19 to 10; and grade 6 (non-agricultural), less than 10.

Like the LCC classifications, Storie Index ratings associated with on-site soils were determined using the NRCS's WSS. As shown in Table 4, the project site received a total Storie Index of 42.95.

Table 4. Storie Index

Soil Map Unit	Project Acres	Proportion of Project Area	Storie Index	Storie Index Score
167 – Deldota clay, partially drained	223.54	0.34	15	5.16
230 – Paver clay loam, 2–5 percent slopes	161.99	0.25	70[1]	17.45
280 – Woo clay, 0–2 percent slopes	264.37	0.41	50	20.34
Totals	**649.9**	**1**	**Storie Index Score**	**42.95**

Notes:
[1] The Storie Index of 83 used for Map Unit 230—Paver clay loam, 2 to 5 percent slopes—reflects best case conditions; however, the soil on the project site is slightly salines, and its productivity requires additional management and irrigation above typical crop requirements (USDA 1990). Adjusting the X factor in the Storie Index to the middle value associated with "slightly alkali affected" results in a Storie Index of 70.

4 Site Assessment

There are four SA factors in the LESA that are used to determine whether a project would have a significant impact on agricultural resources:

- Project Size rating
- Water Resources Availability rating
- Surrounding Agricultural Land rating
- Surrounding Protected Resource Land rating

4.1 Project Size Rating

The project size rating is determined by first looking at the LCC acreage Figures tabulated under the LE portion of the LESA and then using these acreages to determine which grouping generates the highest project size score. This score is a function of the agricultural production potential of soil on the project site. The project size rating depends on the acreage Figures that were tabulated under the LCC rating. This rating is based on identifying acreage Figures for three separate groupings of soil classes within the site and then determining which grouping generates the highest project size score. Table 5 provides the project size score associated with the amount and quality of soils found on a particular site.

Table 5. Project Size Scoring

LCC Class I or II Soils		LCC Class III Soils		LCC Class IV or Lower	
Acres	**Score**	**Acres**	**Score**	**Acres**	**Score**
80 or above	100	160 or above	100	320 or above	100
60 to 79	90	120 to 159	90	240 to 219	80
40 to 59	80	80 to 119	80	160 to 239	60
20 to 39	50	60 to 79	70	100 to 159	40
10 to 19	30	40 to 59	60	100 to 159	20
Fewer than 10	0	20 to 30	30	Fewer than 40	0
		10 to 19	10		
		Fewer than 10	0		

Key: LCC = Land Capability Classification

The inclusion of the measure of a project site's size in the LESA acknowledges the role that size plays in the viability of commercial agricultural operations. In general, larger farming operations can provide greater flexibility in farm management and marketing decisions. Certain economies of scale for equipment and infrastructure can also prove more favorable for larger operations. Additionally, larger operations typically have greater impacts upon the local economy through direct employment and impacts upon support industries (e.g., fertilizers, farm equipment, shipping) and food processing industries. As shown in Table 6, the project site received a project size score of 100 because the project is above 320 acres, despite the fact that the project site contains low quality soils with severe limitations on the types of plants that can be grown.

Table 6. Project-Specific Size Score

Soil Map Unit	LCC Class I – II	LCC Class III	LCC Class IV – VIII
167 – Deldota clay, partially drained	0	0	223.54
230 – Paver clay, 2–5 percent slopes	0	0	161.99
280 – Woo clay, 0–2 percent slopes	0	0	264.37
Total Acres	0	0	649.9
Project Size Score	0	0	100
Highest Project Size Score	**100**		

Key: LCC = Land Capability Classification

4.2 Water Resources Availability Rating

The Water Resources Availability rating is based on identifying the possible water sources that may be available during years characterized as periods of drought or non-drought.

There is currently no access to water on the project site. There are 40 unmaintained ditch segments and culverts on-site and a non-producing and unmaintained well. In 2011, the landowner entered into a non-irrigation covenant with the water district, and the site has not been irrigated since that time. This agreement prohibits agricultural irrigation into perpetuity. The site's rights to water allocations from the SLWD have been indefinitely transferred to the SLWD to distribute to other water users. The restrictive covenant can be terminated by written notice, but any water allocation to the site would be limited based on the water district's resources available at that time.

As presented in Table 7, the project site received a Water Resources Availability rating of zero. Using the California Department of Conservation's LESA Model Instruction Manual Table 5 to determine agricultural feasibility, neither irrigated nor dryland production is currently considered feasible on the site.

Table 7. Water Resources Availability Rating

Project Portion	Water Source	Proportion of Project Area	Water Source Availability	Weighted Availability Score
1	Not irrigated	1	0	0
Weighted Water Resources Availability Score				**0**

4.3 Surrounding Agricultural Land Rating

The surrounding agricultural land rating is based on identifying the project's ZOI, which consists of the land near a given project site that is likely to influence, and to be influenced by, the agricultural use of the subject site. The ZOI is determined by creating the smallest rectangle that would completely contain the project site, then creating a second rectangle that extends 0.25 mile beyond the first rectangle, including each parcel that is completely or partially within the 0.25-mile buffer (Figure 4). The percentage of total land within the ZOI (minus the subject property) that is under agricultural production is then determined.

Table 8 shows how the ZOI score is calculated for a project's surrounding agricultural land rating.

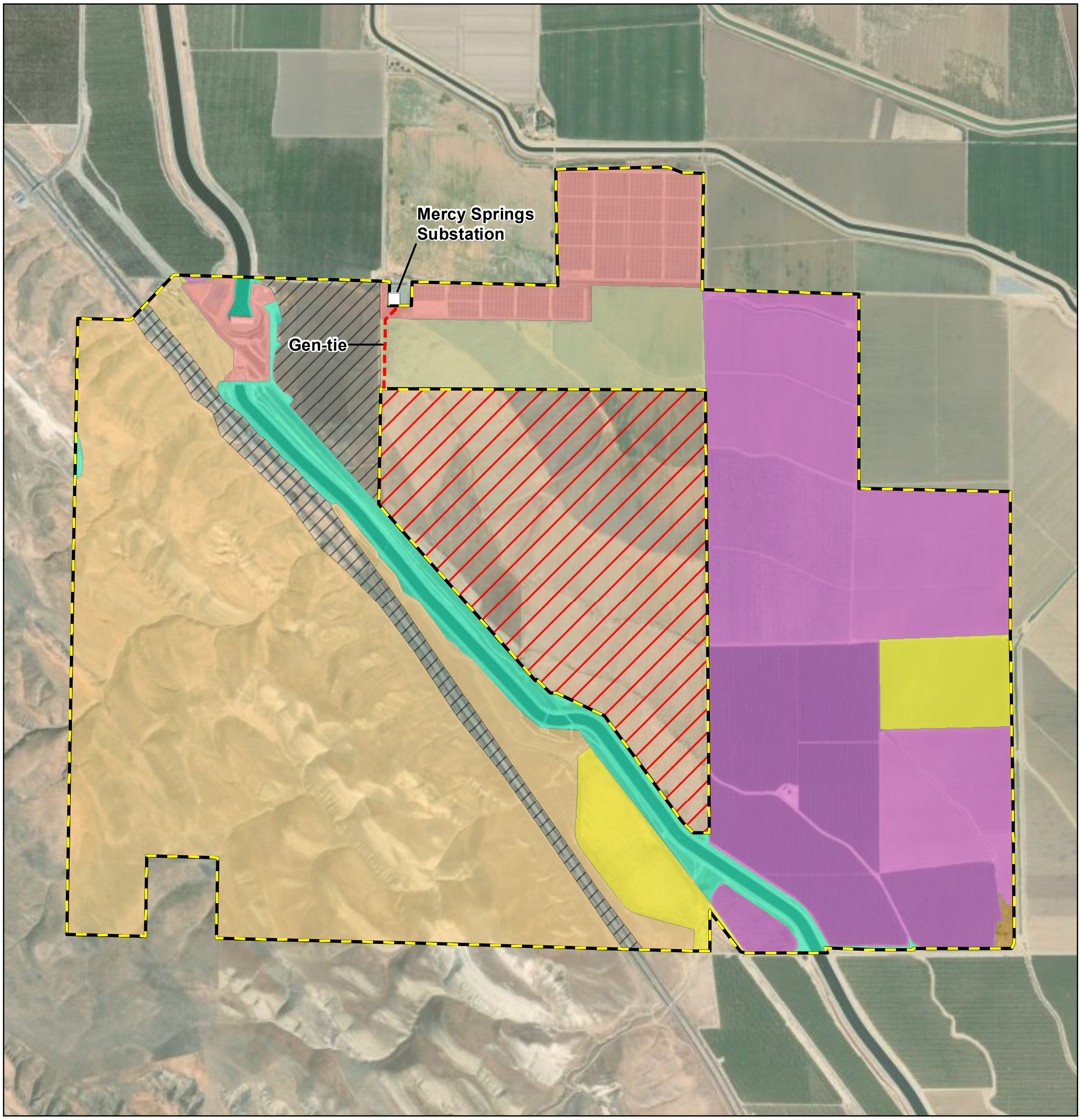
Table 8. Surrounding Agricultural Land Rating

Percent of Project's Zone of Influence in Agricultural Use	Surrounding Agricultural Land Score
90 to 100	100
80 to 89	90
75 to 79	80
70 to 74	70
65 to 69	60
60 to 64	50
55 to 59	40
50 to 54	30
45 to 49	20
40 to 44	10
Less than 40	0

As Table 9 shows, the project's ZOI (excluding the project site) encompasses 3,493.83 acres. Of this, 1,227.5 acres of land is currently producing agricultural crops. Because grazing land is not considered cropland, it was omitted from this calculation (Kerri Kisko, personal communication, October 11, 2022). This total also does not include areas within the ZOI that consist of Prime Farmland or Farmland of Local Importance but have not produced irrigated crops for over 10 years and have been fallow since 2018. In addition, this total does not include 106.96 acres associated with the I-5 corridor or 122.78 acres area managed by CDFW as a wildlife area for dove hunting. This results in a Surrounding Agriculture Land score of 0, because less than 40 percent of the surrounding parcels are under agricultural production.

Table 9. Zone of Influence Surrounding Agricultural Land

Total Acres	Acres in Agriculture	Percent in Agriculture	Surrounding Agricultural Land Score
3,493.83	1,227.5	35.13%	0



Source: Farmland Mapping and Monitoring Program,
California Department of Conservation,
Division of Land Resource Protection, October 2021

- Project Area (649.92 acres)
- Gen-tie
- Mercy Springs Substation
- Zone of Influence (3,493.83 acres)

Farmland Type

- Prime Farmland (1,058.36 ac.)
- Farmland of Local Importance (169.07 ac.)
- Unique Farmland (0.07 ac.)
- Grazing Land (1,439.01 ac.)
- Semi-Agricultural and Rural Commercial Land (5.28 ac.)
- Fallow Agricultural Land (184.25 ac.)
- Vacant or Disturbed Land (203.03 ac.)
- Urban and Built-up Land (203.45 ac.)
- Other Land (231.30 ac.)

0 0.25 0.5
Miles
1:32,000
(At original document size of 8.5x11)

N

Stantec

Project Location
Merced County, CA

Prepared by PG on 2024-07-08
TR by JW on 2024-07-09

Client/Project
Longroad Energy Management, LLC
Zeta Solar and Battery Energy
Storage System Project

Figure 4

Title
Zone of Influence

V:\1857\Active\185705411\03_data\gis_cad\gis\mxd\AgConversion\AgReport\Fig_4_ZoneOfInfluence.mxd Revised: 2024-07-08 By: pglendening

4.4 Surrounding Protected Resource Land Rating

The surrounding Protected Resources Land rating is scored in a similar manner as the surrounding agricultural land rating. “Protected Resource Lands” are those with long-term restrictions that are compatible with or supportive of agricultural uses of land and include the following:

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

Table 10 shows the scoring for a project’s surrounding protected resource land rating.

Table 10. Surrounding Protected Resource Land Rating

Percent of Project’s Zone of Influence Defined as Protected	Surrounding Protected Resource Land Score
90 to 100	100
80 to 89	90
75 to 79	80
70 to 74	70
65 to 69	60
60 to 64	50
55 to 59	40
50 to 54	30
45 to 49	20
40 to 44	10
Less than 40	0

As presented in Table 11 and shown in Figure 2, the project’s ZOI (excluding the project site) encompasses 3,493.83 acres of land, with 2,490.51 acres of land under Williamson Act contracts, within the County’s Agricultural Preserve, in the CDFW wildlife area that is managed for dove hunting, and/or known lands under conservation easement. The existing Vega Solar site located to the north of the project site is listed as being within the County’s Agricultural Preserve. However, the Vega Solar site was omitted from being identified as Protected Resource Land as the site is developed as a solar PV facility and does not meet the criteria of Protected Resource Land identified above. This results in a surrounding protected resource land score of 70, since between 70 and 74 percent of the surrounding parcels are considered Protected Resource Land.

Table 11. Zone of Influence Protected Resource Land

Total Acres	Acres of Protected Resource	Percent Protected Resource Land	Surrounding Protected Resource Land Score
3,493.83	2,490.51	71.28%	70

5 Final Score

A single LESA score is generated for a project after all the individual LE and SA factors have been scored and weighted. Scores are based on a scale with a maximum of 100 points. As presented in Section 3.5, Table 1 provides the ratings that determine whether a project would result in a significant impact on agricultural resources.

As shown in Table 12, the final **LESA score is 39.86**. The project has a total project score below 40 points, with a LE subscore slightly above 20 points and a SA subscore slightly under 20 points. Because the overall score is under 40 points based on the LESA significance thresholds provided in Table 1, project implementation would not be considered a significant impact on agricultural resources.

Table 12. Final LESA Score Sheet

Factors		Factor Scores	Factor Weight	Weighted Factor Scores
LE Factors	Land Capability Classification	42.49	0.25	10.62
	Storie Index	42.95	0.25	10.74
	LE Subscore	**—**	**0.50**	**21.36**
SA Factors	Project Size	100	0.15	15
	Water Resource Availability	0	0.15	0
	Surrounding Agricultural Land	0	0.15	0
	Protected Resource Land	70	0.05	3.5
	SA Subscore	**—**	**0.50**	**18.5**
Final LESA Score		**—**	**—**	**39.86**

6 Conclusion

The California LESA Model is designed to assess the significance of a proposed project's conversion of agricultural land. Loss of agricultural land has typically involved conversion to permanent urban uses, and the LESA model has generally been used to evaluate that type of potential impact. By contrast, the proposed project would affect the agricultural land on the project site for the duration of the life of the project, which is expected to be approximately 40 years, and would then restore the land to its current state as part of project decommissioning. Due to the project's temporary conversion of farmland and based on the project's LESA score of 39.86, the proposed project impacts on agricultural resources would not be significant.

According to the Merced County General Plan Policy AG-3.11: Solar and Wind Energy Production Facilities, the County encourages the installation of solar and wind energy production facilities in agricultural areas so long as they do not result in a tax burden to the County, do not result in permanent water transfers off of productive agricultural land, or do not require cancellation of Williamson Act contracts. As described above, the project is subject to a restrictive irrigation covenant and would not result in permanent water transfers off of productive agricultural land. The site is not subject to any Williamson Act contracts and, further, the project would result in less-than-significant impacts on agricultural resources. Accordingly, the project would be consistent with this policy.

The LESA was prepared to provide a conservative analysis for the project's proposed conversion of land currently classified as Prime Farmland. Because the LESA methodology takes into account soil conditions, project site size, available water resources, surrounding agricultural lands, and surrounding protected resources lands to determine an agricultural conversion score, DOC's anticipated reclassification of the project site would not necessarily change the results of the LESA score, as the model inputs would remain the same. Therefore, with the redesignation of the project site to Farmland of Local Importance, the LESA score for the project would continue to be 39.86 and would not result in a significant impact. DOC's proposed downgrading of the project site from Prime Farmland to Farmland of Local Importance further supports the LESA's conclusions that the project would not result in significant impacts on agricultural resources, as the project would not result in the conversion of Prime Farmland to non-agricultural uses.

6.1 Additional Considerations

- The landowner entered into a non-irrigation covenant with SLWD in 2011, and the land has not been irrigated since that time. Therefore, no surface water rights are currently available to the landowner for agricultural purposes.
- Note that much of the project site is on the Deldota soil type, a partially drained soil which is considered drainage impaired. In addition, all soils on the project site are formed in clays deposited in marine environments, which are high in salinity.

- Groundwater use for agricultural purposes is strictly regulated by Merced County under the Sustainable Groundwater Management Act. According to the Merced County Groundwater Sustainability Plan (2022c), the Merced County groundwater basin has been significantly overdrafted. To achieve a net-zero change in groundwater storage, current agricultural and urban groundwater demand in Merced Subbasin would need to be reduced by approximately 10 percent (Merced County 2022b). Therefore, any future approval for groundwater pumping for crop cultivation would likely be restricted by Merced County and/or require planning in combination with other projects requiring groundwater extraction. Additional analysis of groundwater availability would be necessary.

- No agricultural production has occurred on the project site for over 10 years. Therefore, the project site is not currently contributing to the County's agricultural commodities. In addition, the project site soils have LCC classifications of IVe, IVs, and IVw, which are identified as having very severe limitations that restrict the choice of plants, require very careful management, or both. The combination of the project site soils and non-irrigation of the land would not allow for production of high-value agricultural crops at the site.

- Given the State's efforts to support implementation of renewable energy with the Clean Energy and Pollution Reduction Act (Senate Bill 350) and the 100 Percent Clean Energy Act of 2018 (Senate Bill 100), solar development at the project site would help contribute to meeting a state-wide target of 100 percent clean energy by 2045 and reducing greenhouse gas emissions that lead to climate change effects. According to the Merced County General Plan, climate change effects have been found to exacerbate the drought conditions and diminish water supply that impact agricultural land. Therefore, the project would help mitigate future climate change impacts by facilitating the transition to renewable energy.

- The project would not result in conversion of farmland outside the project site boundary to non-agricultural use. Farmland conversion is caused primarily by urbanization; other chief causes for the loss of farmland include development of low-density rural residences and ecological restoration projects, such as wetlands and wildlife habitat. The project does not fall into any of these categories and would not result in any new infrastructure that could promote growth or remove development barriers. The California aqueduct and I-5, located west of the project site, also serve as existing infrastructure barriers between the project site and land located further west. Long-term operational impacts would be minimal. The small number of employees required for operations would not require increased urban development.

7 References

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Appendix A LESA Model Worksheets

Land Evaluation Worksheet
Land Capability Classification (LCC) and Storie Index Scores

Site Assessment Worksheet 1
Project Size Score

Soil Map Unit	Project Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score		LCC Class I-II	LCC Class III	LCC Class IV-VIII
167 - Deldota clay, partially drained	223.54	0.34	4w	40	13.76	15	5.16				223.54
230 - Paver clay loam, 2-5%	161.99	0.25	4e	50	12.46	70	17.45				161.99
280 -Woo clay, 0 to 2% slopes	264.37	0.41	4s	40	16.27	50	20.34				264.37
Totals	**649.9**	**1.00**		**LCC Total Score**	**42.49**	**Storie Index Score**	**42.95**	**Total Acres**	**0**	**0**	**649.9**
								Project Size Scores	**0**	**0**	**100**

Highest Project **100**

Site Assessment Worksheet 2 – Water Resources Availability

Project Portion	Water Source	Proportion of Project Area	Water Availability Score	Weighted Availability Score
1	Not irrigated	1	0	0
2				0
3				0
4				0
5				0
6				0
		1	**Total Resource Water Score**	0

Site Assessment Worksheet 3
Surrounding Agricultural Land and Surrounding Protected Resources Land

Zone of Influence					Surrounding Agricultural Land Score	Surrounding Protected Resource Land Score
Total Acres	**Acres in Agriculture**	**Area of Protected Resource Land**	**Percent in Agriculture**	**Percent protected Resource Land**		
3,493.83	1,227.50	2,490.51	35.13%	71.28%	0	70

Final LESA Score Sheet

Calculation of the Final LESA Score:
NOTES
1) Multiply each factor score by the factor weight to determine the weighted score and enter in Weighted Factor Scores column.
2) Sum the weighted factor scores for the LE factors to determine the total LE score for the project.
3) Sum the weighted factor scores for the SA factors to determine the Total SA score for the project.
4) Sum the total LE and SA scores to determine the Final LESA score for the project.

Factors		Factor Scores	Factor Weight	Weighted Factor Scores
LE Factors	Land Capability Classification	42.49	0.25	10.62
	Storie Index	42.95	0.25	10.74
	LE Subscore	**—**	**0.50**	**21.36**
SA Factors	Project Size	100	0.15	15
	Water Resource Availability	0	0.15	0
	Surrounding Agricultural Land	0	0.15	0
	Protected Resource Land	70	0.05	3.5
	SA Subscore	**—**	**0.50**	**18.5**
Final LESA Score		**—**	**—**	**39.86**