

AGRICULTURAL RESOURCES

Supporting Documentation for the LESA Model Calculations

For the purposes of the calculations contained in this document, agricultural resources identified within the PVL project area are based on the designations provided by the Riverside County Land Information System (RCLIS) (2009) and the California Department of Conservation’s Farmland Mapping and Monitoring Program (FMMP) (2006). Table 1 summarizes these designations for all 2012 Opening Year project components.

**Table 1
Farmland Designations of the PVL Project Components**

Project Location	Farmland Designation	Acres
BNSF ROW (between Riverside Downtown Metrolink Station and the western extent of the Citrus Connection)	Urban and built up	48.48
SJBL ROW (between the eastern extent of the Citrus Connection and the Layover Facility)	Urban and built up	350.10
Citrus Connection	Farmland of Local Importance	17.23
Hunter Park Station – Palmyrita Avenue Option	Prime Farmland	24.80
Hunter Park Station – Columbia Avenue Option	Prime Farmland	9.26
Hunter Park Station – Marlborough Avenue Option	Prime Farmland and Farmland of Local Importance	9.38
Moreno Valley / March Field Station	Farmland of Local Importance	14.50
Downtown Perris Station	Urban and built up	12.44
South Perris Station and Layover Facility	Farmland of Local Importance	64.37

Implementation of the proposed PVL project would include four proposed stations for the 2012 Opening Year. Three of the proposed Opening Year stations have been finalized, and include Moreno Valley/March Field, Downtown Perris, and South Perris. The fourth proposed Hunter Park Station would be located at one of three locations: Palmyrita Avenue, Columbia Avenue, or Marlborough Avenue. Each of the Hunter Park Station options forms the basis of three corridor “alternatives” evaluated herein. Each alternative includes the same general components: the existing BNSF ROW, the existing SJBL ROW, the proposed Citrus Connection, the three proposed Opening Year stations, and the Layover Facility, and is varied solely by the selected Hunter Park option. The Corridor A alternative includes Palmyrita Avenue, Corridor B comprises Columbia Avenue, and Corridor C contains the Marlborough Avenue option.

To evaluate the conversion of farmland resulting from the project, the California Agricultural Land Evaluation and Site Assessment (LESA) Model was used to analyze the significance of the impacts. The LESA Model is based on land evaluation and site assessment factors, as described below.

Land Evaluation

The land evaluation component of the LESA Model includes two factors to assess soil suitability: the Land Capability Classification (LCC) and the Storie Index. The LCC rates the suitability of soils for most kinds of crops, while the Storie Index rates the relative degree of suitability for intensive agriculture (LESA, 1997). Typically, Certified Professional Soil Scientists are used to derive Storie Index information. Due to resource limitations, however, the calculations contained herein rely solely upon the LCC rating system, which is allowed under the LESA Model (LESA, 1997). To rate soil suitability without the Storie Index, the LCC rating is weighted more heavily and accounts for 50 percent of the total LESA calculation.

To derive the LCC for the PVL project, the soil mapping units of each parcel containing Prime Farmland or Farmland of Local Importance were identified using the USDA's Natural Resources Conservation Service (NRCS) Web Soil Survey. Tables 2A – 2C present the acreages of each soil unit, each unit's land capability classification, and the proportion of each unit that comprises each of the three corridor alternatives.

**Table 2A
Soil Mapping Units – Corridor A Alternative**

Location	Unit	LCC Class	LESA Points	Acreage	Project Proportion*	LCC Score
Citrus Connection	HcC - Hanford coarse sandy loam	2e	90	17.23	0.032	2.88
Palmyrita Avenue Option	HcC – Hanford coarse sandy loam	2e	90	5.28	0.009	0.81
	GyC2 – Greenfield sandy loam	2e	90	19.52	0.036	3.24
Moreno Valley / March Field Station	MmB – Monserate sandy loam, 0-5% slope	3e	70	10.59	0.019	1.33
	MmC2 – Monserate sandy loam, 5-8% slope	3e	70	2.79	0.005	0.35
	MmD2 – Monserate sandy loam, 8-15% slope	4e	50	1.12	0.002	0.10
South Perris Station / Layover Facility	MaA – Madera fine sandy loam	3s	60	10.79	0.02	1.20
	Wn – Willows silty clay, strongly saline-alkali	4w	40	20.69	0.038	1.52
	Wg – Willows silty clay, saline-alkali	3w	60	23.56	0.044	2.64
	Dw – Domino silt loam	4w	40	9.33	0.017	0.68
Total LCC score = 14.75						

* Acreage of soil mapping unit divided by the acreage of Corridor A (approximately 531.92 acres, which encompasses the BNSF ROW, the SJBL ROW, the Citrus Connection, the Palmyrita Station, Moreno Valley/March Field Station, Downtown Perris Station, and the South Perris Station and Layover Facility).

**Table 2B
Soil Mapping Units – Corridor B Alternative**

Location	Unit	LCC Class	LESA Points	Acreage	Project Proportion*	LCC Score
Citrus Connection	HcC - Hanford coarse sandy loam	2e	90	17.23	0.033	2.97
Columbia Avenue Option	GyC2 – Greenfield sandy loam	2e	90	4.16	0.008	0.72
	AoC – Arlington fine sandy loam	2e	90	4.96	0.009	0.81
	BuC2 – Buren fine sandy loam	3e	70	0.14	0.0002	0.01
Moreno Valley / March Field Station	MmB – Monserate sandy loam, 0-5% slope	3e	70	10.59	0.02	1.40
	MmC2 – Monserate sandy loam, 5-8% slope	3e	70	2.79	0.005	0.35
	MmD2 – Monserate sandy loam, 8-15% slope	4e	50	1.12	0.002	0.10
South Perris Station / Layover Facility	MaA – Madera fine sandy loam	3s	60	10.79	0.02	1.20
	Wn – Willows silty clay, strongly saline-alkali	4w	40	20.69	0.04	1.60
	Wg – Willows silty clay, saline-alkali	3w	60	23.56	0.04	2.40
	Dw – Domino silt loam	4w	40	9.33	0.01	0.40
Total LCC score = 11.96						

* Acreage of soil mapping unit divided by the acreage of Corridor B (approximately 516.38 acres, which encompasses the BNSF ROW, the SJBL ROW, the Citrus Connection, the Columbia Station, Moreno Valley/March Field Station, Downtown Perris Station, and the South Perris Station and Layover Facility).

**Table 2C
Soil Mapping Units – Corridor C Alternative**

Location	Unit	LCC Class	LESA Points	Acreage	Project Proportion*	LCC Score
Citrus Connection	HcC - Hanford coarse sandy loam	2e	90	17.23	0.033	2.97
Marlborough Avenue Option	AoC – Arlington fine sandy loam	2e	90	9.25	0.017	1.53
	CkF2 – Cieneba rocky sandy loam	7e	10	0.13	0.0002	0.002
Moreno Valley / March Field Station	MmB – Monserate sandy loam, 0-5% slope	3e	70	10.59	0.02	1.40
	MmC2 – Monserate sandy loam, 5-8% slope	3e	70	2.79	0.005	0.35
	MmD2 – Monserate sandy loam, 8-15% slope	4e	50	1.12	0.002	0.10
South Perris Station / Layover Facility	MaA – Madera fine sandy loam	3s	60	10.79	0.02	1.20
	Wn – Willows silty clay, strongly saline-alkali	4w	40	20.69	0.04	1.60
	Wg – Willows silty clay, saline-alkali	3w	60	23.56	0.04	2.40
	Dw – Domino silt loam	4w	40	9.33	0.01	0.40
Total LCC score = 11.95						

* Acreage of soil mapping unit divided by the acreage of Corridor C (approximately 516.50 acres, which encompasses the BNSF ROW, the SJBL ROW, the Citrus Connection, the Marlborough Station, Moreno Valley/March Field Station, Downtown Perris Station, and the South Perris Station and Layover Facility).

Each LCC is assigned a LESEA point rating, which is multiplied by the proportion of each soil mapping unit to obtain the LCC score for each unit. The total LCC score for each corridor alternative is summarized in Table 3.

**Table 3
Summary of LCC Scores**

Corridor Alternative	LCC Score
Corridor A (Palmyrita Avenue Option)	14.75
Corridor B (Columbia Avenue Option)	11.96
Corridor C (Marlborough Avenue Option)	11.95

Site Assessment

The second part of the LESA Model involves site assessment, which is evaluated using four separate factors. These include: (1) Project Size; (2) Water Resources Availability; (3) Surrounding Agricultural Land; and (4) Surrounding Protected Resource Land. Each factor is described briefly and analyzed below.

Project Size

According to the LESA Model, the size of a project is included to account for the role of high quality soils in crop flexibility and economic return per unit acre. The project size rating is derived from the soil information presented in Tables 2A – 2C. The acreage of each soil mapping unit and the corresponding LCC rating are divided by class and summed to derive an overall acreage for each class. These acreages are then assigned a project size score established by the LESA Model. The highest score derived for the LCC classes becomes the project size score. Tables 4A – 4C summarize the calculations.

**Table 4A
Project Size Rating – Corridor A**

	LCC Class 1 – 2	LCC Class 3	LCC Class 4 – 8
	17.23	10.59	1.12
	5.28	2.79	20.69
	19.52	10.79	9.33
	---	23.56	---
	42.03 (Total Acres)	47.73 (Total Acres)	31.14 (Total Acres)
Project Size Scores	80	60	0

**Table 4B
Project Size Rating – Corridor B**

	LCC Class 1 – 2	LCC Class 3	LCC Class 4 – 8
	17.23	0.14	1.12
	4.16	10.59	20.69
	4.96	2.79	9.33
	---	10.79	---
	---	23.56	---
	26.35 (Total Acres)	47.87 (Total Acres)	31.14 (Total Acres)
Project Size Scores	50	60	0

**Table 4C
Project Size Rating – Corridor C**

	LCC Class 1 – 2	LCC Class 3	LCC Class 4 – 8
	17.23	10.59	0.13
	9.25	2.79	1.12
	---	10.79	20.69
	---	23.56	9.33
	26.48 (Total Acres)	47.73 (Total Acres)	31.27 (Total Acres)
Project Size Scores	50	60	0

**Table 5
Summary of Project Size Scores**

Corridor Alternative	Project Size Score
Corridor A (Palmyrita Avenue Option)	80
Corridor B (Columbia Avenue Option)	60
Corridor C (Marlborough Avenue Option)	60

Water Resources Availability

The Water Resources Availability rating considers a number of factors, including water reliability, physical and economic restrictions related to cost, and the drought cycle in California. Without readily available water resources information, a conservative approach was taken for evaluating the various sources of water that may supply each of the parcels. It was assumed that some water would be available through irrigation facilities while other sources of water could include riparian areas such as Springbrook Wash or the San Jacinto River. Both sources were assumed to be feasible and without economic or physical restrictions. These assumptions yield a factor rating of 50 (out of a possible 100 points) for each corridor alternative.

Surrounding Agricultural Land

The Surrounding Agricultural Land rating is based on a “Zone of Influence” (ZOI) developed for each project component containing farmland. The LESA Model defines the ZOI as “land near a given project, both directly adjoining and within a defined distance away, that is likely to influence, and be influenced by, the agricultural land use of the subject project site.” Depending on the shape of a given parcel, the ZOI represents approximately a one-quarter-mile to one-half-mile buffer around each parcel. GoogleEarth (2009) aerials were used to estimate whether surrounding areas appear to be in use as agricultural lands. Table 6 presents the results of the calculations.

**Table 6
Surrounding Agricultural Land**

Location	Acres of Agricultural Land in ZOI	Acres in ZOI	% in ZOI	LESA Score
Citrus Connection	72.39	424.06	17.07	0
Palmyrita Avenue Option	18.60	347.01	5.36	0
Columbia Avenue Option	34.14	329.97	10.34	0
Marlborough Avenue Option	34.06	375.25	9.07	0
Moreno Valley / March Field Station	0	505.72	0	0
South Perris Station / Layover Facility	622.02	1101.03	56.49	40

Because all of the corridor alternatives include the South Perris Station and Layover Facility, and this is the only project component that adjoins enough agricultural land to generate an individual LESA score, each corridor alternative is assigned a score of 40 for the Surrounding Agricultural Land site assessment factor.

Surrounding Protected Resource Land

Surrounding Protected Resource Land includes land with long-term use restrictions that are compatible with agricultural uses. These include: (1) Williamson Act; (2) publicly owned lands maintained as park, forest, or watershed; or (3) 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 Surrounding Protected Resource Land rating is derived using the same ZOI strategy as the Surrounding Agricultural Land rating and is scored in the same way. Table 7 presents the results.

**Table 7
Surrounding Protected Resource Land**

Location	Acres of Protected Resource Land in ZOI	Acres in ZOI	% in ZOI	LESA Score
Citrus Connection	22.96	424.06	5.41	0
Palmyrita Avenue Option	0	347.01	0	0
Columbia Avenue Option	33.98	329.97	10.29	0
Marlborough Avenue Option	99.14	375.25	26.41	0
Moreno Valley / March Field Station	128.97	505.72	25.50	0
South Perris Station / Layover Facility	135.39	1101.03	12.29	0

Because all of the project components are assigned an individual LESA score of "0," each corridor alternative is also given a score of "0" for the Surrounding Protected Resource Land site assessment factor.

Table 8 presents the land evaluation and site assessment factors, individual factor weights, and the final LESA scoring for each of the corridor alternatives.

**Table 8
Final LESA Scoresheet**

Factor Name	Factor Rating (0 – 100 Points)	X	Factor Weighting (Total = 1.00 per corridor)	=	Weighted Factor Rating
LAND EVALUATION					
Corridor A (Palmyrita)	14.75	X	0.50	=	7.37
Corridor B (Columbia)	11.96	X	0.50	=	5.98
Corridor C (Marlborough)	11.95	X	0.50	=	5.97
SITE ASSESSMENT					
Project Size					
Corridor A (Palmyrita)	80	X	0.15	=	12
Corridor B (Columbia)	60	X	0.15	=	9
Corridor C (Marlborough)	60	X	0.15	=	9
Water Resource Availability					
Corridor A (Palmyrita)	50	X	0.15	=	7.5
Corridor B (Columbia)	50	X	0.15	=	7.5
Corridor C (Marlborough)	50	X	0.15	=	7.5
Surrounding Agricultural Land					
Corridor A (Palmyrita)	40	X	0.15	=	6
Corridor B (Columbia)	40	X	0.15	=	6
Corridor C (Marlborough)	40	X	0.15	=	6
Protected Resource Land					
Corridor A (Palmyrita)	0	X	0.05	=	0
Corridor B (Columbia)	0	X	0.05	=	0
Corridor C (Marlborough)	0	X	0.05	=	0
Total LESA Score (sum of weighted factor ratings) =			32.87	Corridor A (Palmyrita)	
			28.48	Corridor B (Columbia)	
			28.47	Corridor C (Marlborough)	

Determinations of significance under CEQA are based on scoring thresholds, which consider the total LESA score and the compiled land evaluation and site assessment subscores. Table 9 presents the overall LESA Model Scoring Thresholds (LESA 1997:31).

**Table 9
LESA Model Scoring Thresholds**

Total LESA Score	Scoring Decision
0 to 39 Points	Not Considered Significant
40 to 59 Points	Considered Significant <u>only</u> if land evaluation <u>and</u> site assessment subscores are each <u>greater</u> than or equal to 20 points
60 to 79 Points	Considered Significant <u>unless</u> either land evaluation <u>or</u> site assessment subscore is <u>less</u> than 20 points
80 to 100 Points	Considered Significant

As shown in Table 8, the total LESA score for all three corridor alternatives is less than 39 points. In addition, the land evaluation and site assessment subscores for each corridor alternative are less than 20 points, respectively. Accordingly, the proposed PVL project, regardless of which Hunter Park Station option is selected, will not have a significant effect on agricultural resources.

References

California Agricultural Land Evaluation and Site Assessment (LESA) Model, 1997. California Department of Conservation, Sacramento.

Farmland Mapping and Monitoring Program, 2006. State of California Department of Conservation. <http://www.conservation.ca.gov/dlrp/FMMP/Pages/Index.aspx>

Riverside County Land Information System (RCLIS), 2009. County of Riverside Transportation and Land Management Agency Geographic Information Services. <http://www3.tlma.co.riverside.ca.us/pa/rclis/index.html>