Attachment 10
Land Evaluation and Site Assessment

Land Evaluation and Site Assessment for the

River Oaks II Project

Submitted to:
City of Paso Robles
Community Development Department

May 2014

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Attachment K

Agricultural Impact Analysis

- *LESA (Land Evaluation and Site Assessment) Analysis*
- *Memo on Agricultural Buffers and CEQA (May 16, 2014)*
- *Memo on Ag Buffer Standards in California (February 9, 2015)*

Land Evaluation and Site Assessment

for the

River Oaks II Project

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- *Appendix B: California LESA Model Instruction Manual*

River Oaks II Project
Land Evaluation and Site Assessment

1. Introduction

Appendix G of the California Environmental Quality Act (CEQA) Guidelines identifies the California Agricultural Land Evaluation and Site Assessment (LESA) Model as an approved approach for assessing impacts on agriculture and farmland, putting the quality of soils in the context of the size of the site, surrounding land uses, water availability, and other factors. The LESA Model was prepared for the proposed River Oaks II Project (or Project) to assess potential impacts.

The LESA Model describes an approach for rating the relative quality of land resources using specific measurable features. The LESA system is a point-based method composed of six different factors: Land Capability Classification, Storie Index, Project Size, Water Resource Availability, Surrounding Agricultural Land and Surrounding Protected Resource Land.

The two Land Evaluation factors (Land Use Capability Classification and Store Index) are based on measures of soil resource quality. The four Site Assessment factors provide measures of a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands.

For a given project, each of these factors is separately rated on a 100-point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project. The maximum attainable score is 100 points. This project score becomes the basis for making a determination of a project's potential significance, based upon a range of established scoring thresholds (Department of Conservation, 1997).

There are two appendices attached to this analysis to assist the reader. **Appendix A** includes the Natural Resources Conservation Service (NRCS) Soil Survey for the site, which includes detailed descriptions of the site's soil characteristics. This appendix also includes soils information for the site from the State of California Important Farmlands Mapping and Monitoring Program. **Appendix B** is the *California Agricultural Land Evaluotion and Site Assessment Model Instruction Manual*, which forms the basis for the analysis that follows.

2. Project Description

The project is a General Plan Amendment and amendment to the Borkey Area Specific Plan that would facilitate the development of a variety of land uses on a 132-acre site within the City of Paso Robles. The proposed project includes a range of residential housing, related community amenities and open space, which collectively would complete the existing River Oaks master plan community, already developed on land to the south. The proposed project would allow 271 residential units within Subarea A of the Borkey Area Specific Plan area. **Figure 1** shows the study area.

The project site is within the City limits. Agricultural uses are to the north of the project site (mostly within the City), while the Salinas River is to the west. Rural Residential uses and the Cuesta College campus are to the east of the site, east of Buena Vista Drive. Residential suburban, elementary school and recreational uses are developed to the south in the existing River Oaks community, an area that is similar in character to what is planned on the project site. The City's wastewater treatment plant is located southwest of the property, across the Salinas River.

3. LESA Evaluation

The project site was evaluated using the LESA Model to rate the quality and availability of agricultural resources. The Model was also used to identify whether the proposed project would exceed the threshold criteria (see Table 10) established to determine whether a significant impact to Agricultural Resources would occur under CEQA. There are two major components to the LESA Model, Land Evaluation and Site Assessment, which are weighted equally. The factors that comprise these components are evaluated in the following sections.

Land Evaluation

The Land Evaluation portion of the LESA Model focuses on two main components that are separately rated:

- **The Land Capability Classification (LCC) Rating**: The LCC indicates the suitability of soils for most kinds of crops. Soils are rated on a scale from Class 1 to Class 8, with Class 1 being the highest rating. Soils having the fewest limitations receive the highest rating. The concept of "prime" soils is not used in a LESA evaluation, because the quality of the soils must be considered in the context of many other factors before a determination of significance can be made.

- **The Storie Index Rating:** The Storie Index provides a numeric rating (based on a 100 point scale) of the relative degree of suitability or value of a given soil for intensive agriculture use. This rating is based on soil characteristics only. Note that the Storie rating system was recently simplified to numerically rate soils on a scale of 1 to 6, while the LESA model still calls for a numeric rating from 0 to 100. In a LESA analysis, the simplified ratings are now typically translated to the midpoint of the range of each rating from the original scale, as follows:

Revised Storie Index Score	Original Range	Midpoint
1	80-100	90
2	60-79	69.5
3	40-59	49.5
4	20-39	29.5
5	10-19	14.5
6	0-9	4.5

However, to provide a more conservative result, this LESA analysis will use the highest (not midpoint) point value within each category.

Figure 1. Project Study Area *(outlined in red)*

Figure 2. Onsite Soils *(see Table 1 for descriptions)*

The United States Department of Agriculture survey for the site (see **Appendix A**) found six soil types present on the project site (**Figure 2**). Their characteristics are summarized in **Table 1**.

Table 1. Project Site Soil Capabilities

Map Symbol	Soil Map Unit	Project Acres	% of Project Area	Capability Class (if irrigated; unirrigated in parentheses)	Irrigation Limitations	CA Revised Storie Index
100	Arbuckle fine sandy loam, 0 to 2 percent slopes	23.9	18%	1 (4c)	somewhat limited (rapid water movement)	1
104	Arbuckle-positas complex, 30 to 50 percent slopes	9.4	7%	7e (7e)	very limited (slope; water holding capacity)	3
106	Arbuckle-San Ysidro complex, 2 to 9 percent slopes	9.1	7%	3e (4e)	somewhat limited (rapid water movement; slope)	1
173	Mocho clay loam, 0 to 2 percent slopes	7.6	6%	1 (4c)	somewhat limited (rapid water movement)	1
177	Nacimiento-Ayar complex, 9 to 30 percent slopes	75.9	57%	4e (4e)	very limited (slope)	3
212	Xerofluvents-Riverwash association	6.1	5%	6w (7w)	not rated	3
	TOTAL	**132.0**	**100%**			

Source: NRCS Web Soil Survey, 2014.

Note that the highest quality soils are those with the lowest LCC and Storie Index ratings. There are approximately 31.5 acres of Class 1 soils on the site, if they can be irrigated. However, the NRCS identifies limitations to their irrigation potential, including the concept that irrigation water tends to run off these soils when applied. Historically, these soils have not been irrigated. The remaining soils on the site face even greater limitations to their irrigation potential, including steep slopes and limited water holding capacity.

If these soils are not irrigated, none are considered higher than Class 4 soils.

Table 2 translates the soil capabilities shown in **Table 1** into Land Evaluation scores, based on the criteria set forth in the *Califarnia Agricultural Land Evaluation and Site Assessment Model Instruction Manual* (California Department of Conservation, 1997). Note that **Table 2** assumes that all soils can be irrigated, which would present the highest possible scores, even though as noted previously, actual onsite irrigation potential is limited. In this way, this analysis presents a very conservative result and worst-case. If we assume that onsite soils cannot be irrigated, the score would be considerably lower.

Table 2. Land Evaluation Score Summary (assumes irrigated soils)

Map Symbol	Soil Map Unit	Project Acres	% of Project Area	LCC Raw Score	LCC Weighted Score	Storie Index Raw Score	Storie Index Weighted Score
100	Arbuckle fine sandy loam, 0 to 2 percent slopes	23.9	18%	100	18.10	100	18.10
104	Arbuckle-positas complex, 30 to 50 percent slopes	9.4	7%	10	0.71	59	4.20

Table 2. Land Evaluation Score Summary (assumes irrigated soils)

Map Symbol	Soil Map Unit	Project Acres	% of Project Area	LCC Raw Score	LCC Weighted Score	Storie Index Raw Score	Storie Index Weighted Score
106	Arbuckle-San Ysidro complex, 2 to 9 percent slopes	9.1	7%	70	4.82	100	6.89
173	Mocho clay loam, 0 to 2 percent slopes	7.6	6%	100	5.79	100	5.79
177	Nacimiento-Ayar complex, 9 to 30 percent slopes	75.9	57%	50	28.74	59	33.91
212	Xerofluvents-Riverwash association	6.1	5%	20	0.92	59	2.73
	TOTAL	**132.0**	**100%**		**59.09**		**71.62**

Source: NRCS Web Soil Survey, 2014.

Notes:
LCC Raw Score is derived from Table 2 of the LESA Instruction Manual.
LCC Weighted Score is derived by multiplying the raw score by the % of site in that particular soil type.
Storie Index Raw Score is derived by translating the CA Storie Index to the high end of the 0-100 range from the original Index.
Storie Index Weighted Score is derived by multiplying the raw score by the % of site in that particular soil type.

Table 3 shows what the Land Evaluation Scores would be if the site were assumed not to be irrigable. This may in fact be a reasonable assumption given the site factors described above, especially in the context of the current drought and the fact that irrigation water would come from groundwater wells, for which the City discourages such use. However, while reasonable, this table is only presented for comparative purposes to show how the lack of irrigation would downward revise the score. The actual LESA score will be based on the assumption that soils can be irrigated. Note that whether or not the soil is irrigated has no effect on the Storie Index rating of the soil, just the Land Capability Classification.

Table 3. Land Evaluation Score Summary (assuming non-irrigated soils)

Map Symbol	Soil Map Unit	Project Acres	% of Project Area	LCC Raw Score	LCC Weighted Score	Storie Index Raw Score	Storie Index Weighted Score
100	Arbuckle fine sandy loam, 0 to 2 percent slopes	23.9	18%	40	7.24	100	18.10
104	Arbuckle-positas complex, 30 to 50 percent slopes	9.4	7%	10	0.71	59	4.20
106	Arbuckle-San Ysidro complex, 2 to 9 percent slopes	9.1	7%	50	3.45	100	6.89
173	Mocho clay loam, 0 to 2 percent slopes	7.6	6%	40	2.31	100	5.79
177	Nacimiento-Ayar complex, 9 to 30 percent slopes	75.9	57%	50	28.74	59	33.91
212	Xerofluvents-Riverwash association	6.1	5%	10	0.46	59	2.73
	TOTAL	**132.0**	**100%**		**42.92**		**71.62**

Source: NRCS Web Soil Survey, 2014.

Notes:
LCC Raw Score is derived from Table 2 of the LESA Instruction Manual.
LCC Weighted Score is derived by multiplying the raw score by the % of site in that particular soil type.
Storie Index Raw Score is derived by translating the CA Storie Index to the high end of the 0-100 range from the original Index.
Storie Index Weighted Score is derived by multiplying the raw score by the % of site in that particular soil type.

Site Assessment

The Site Assessment portion of the LESA Model focuses on four main components that are separately rated:

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

Project Size Rating

The project size rating recognizes the role of farm size in determining the viability of commercial agricultural operations. Larger farming operations generally can provide greater flexibility in farm management and marketing decisions. In addition, larger operations tend to have greater impacts upon the local economy through direct employment, as well as impacts upon supporting industries and food processing industries (California Department of Conservation, 1997).

With regard to agricultural productivity, the size of the farming operation can be considered not just from its total acreage, but the acreage of different quality lands that comprise the operation. Lands with higher quality soils lend themselves to greater management and cropping flexibility and have the potential to provide greater economic return per acre unit. For a given project, instead of relying on a single acreage figure in the Project Size rating, the project is divided into three acreage groupings based upon the LCC ratings that were previously determined in the Land Evaluation analysis. Under the Project Size rating, relatively fewer acres of high quality soils are required to achieve a maximum Project Size score. Alternatively, a maximum score on lesser quality soils could also achieve a maximum Project Size score.

The analysis is independent of how much land would actually be converted as part of the project, but simply considers the viability of the entire site as a whole. Thus, it implicitly assumes that the entire site might be converted by the project, although in reality, portions of the site will remain undeveloped under the project, and substantial acreage for a new onsite vineyard operation will be included. Thus, this analysis may be considered as a worst-case scenario.

Table 4 summarizes the Project Size score for the proposed project, assuming soils can be irrigated.

Table 4. Project Site Size Score (assumes irrigated soils)

Map Symbol	Soil Map Unit	LCC Class 1-2 Soils	LCC Class 3 Soils	LCC Class 4-8 Soils	TOTAL
100	Arbuckle fine sandy loam, 0 to 2 percent slopes	23.9	-	-	23.9
104	Arbuckle-positas complex, 30 to 50 percent slopes	-	-	9.4	9.4
106	Arbuckle-San Ysidro complex, 2 to 9 percent slopes	-	9.1	-	9.1
173	Mocho clay loam, 0 to 2 percent slopes	7.6	-	-	7.6
177	Nacimiento-Ayar complex, 9 to 30 percent slopes	-	-	75.9	75.9
212	Xerofluvents-Riverwash association	-	-	6.1	6.1

Table 4. Project Site Size Score (assumes irrigated soils)

Map Symbol	Soil Map Unit	LCC Class 1-2 Soils	LCC Class 3 Soils	LCC Class 4-8 Soils	TOTAL
	TOTAL Acreage	*31.5*	*9.1*	*91.4*	*132.0*
	SCORE	**50**	**0**	**20**	
	HIGHEST SCORE				**50**

Source: NRCS Web Soil Survey, 2014.

Notes:

1. *LCC Class is derived from the numeric value not in parentheses in the fifth column of Table 1 in this report.*
2. *Project Site Size Score is derived from Table 3 of the LESA Instruction Manual.*
3. *Only the highest score from the three columns is used.*

Table 5 summarizes the Project Size score for the proposed project, assuming soils cannot be irrigated. It is presented for comparative purposes only, and is not factored into the final LESA score, because it does not present the most conservative (worst-case) result.

Table 5. Project Site Size Score (assumes non-irrigated soils)

Map Symbol	Soil Map Unit	LCC Class 1-2 Soils	LCC Class 3 Soils	LCC Class 4-8 Soils	TOTAL
100	Arbuckle fine sandy loam, 0 to 2 percent slopes	-	-	23.9	23.9
104	Arbuckle-positas complex, 30 to 50 percent slopes	-	-	9.4	9.4
106	Arbuckle-San Ysidro complex, 2 to 9 percent slopes	-	-	9.1	9.1
173	Mocho clay loam, 0 to 2 percent slopes	-	-	7.6	7.6
177	Nacimiento-Ayar complex, 9 to 30 percent slopes	-	-	75.9	75.9
212	Xerofluvents-Riverwash association	-	-	6.1	6.1
	TOTAL Acreage	*0*	*0*	*132.0*	*132.0*
	SCORE	**0**	**0**	**40**	
	HIGHEST SCORE				**40**

Source: NRCS Web Soil Survey, 2014.

Notes:

1. *LCC Class is derived from the numeric value not in parentheses in the fifth column of Table 1 in this report.*
2. *Project Site Size Score is derived from Table 3 of the LESA Instruction Manual.*
3. *Only the highest score from the three columns is used.*

Water Resources Availability Rating

The Water Resource Availability Rating is based on the various water sources that may supply a given property, and then determining whether different restrictions in supply are likely to take place in years

that are characterized as drought and non-drought. The site would be able to use on groundwater from onsite wells if used for irrigated agriculture, although groundwater use is discouraged by the City as a matter of policy. The region is also in extreme drought, and the long-term reliability of the Paso Robles groundwater basin is questionable. For these reasons, long-term groundwater availability for agricultural irrigation is also questionable.

Much of the project site is subject to other physical restrictions with regard to water use for irrigation, including substantial areas with steeper slopes or within the riverbed, and the fact that some of the site has already been developed as part of the River Oaks Hot Springs complex.

However, to provide the most conservative result, this analysis assumes that irrigation water can be made available to the more level portions of the site without physical or economic restrictions.

Table 6 summarizes the Water Resources Availability score for the project.

Table 6. Water Resources Availability Score

Portion of Site	Water Source	Project Acres	% of Project Area	Irrigation Feasible?	Water Restrictions	Raw Score	Weighted Score
Level Rangeland	Onsite wells	15.9	12%	Yes	Drought	100	12.05
Sloped Rangeland	Onsite wells	76.7	58%	No	Drought; physical (steep slopes)	20	11.62
Existing Development	City supplies	25.0	19%	No	Physical (already developed)	0	0
Riverbed	None required	14.4	11%	No	Physical (riverbed)	0	0
	TOTAL	**132.0**	**100%**				**23.67**

Sources: NRCS Web Soil Survey, 2014; SLO County PermitView, 2014.

Notes:

1. *"Water availability" means for ag uses, not urban development.*
2. *Assumes groundwater for ag irrigation. Urban development would use City supplies.*
3. *Project acres derived from SLO County PermitView (http://www.sloplanning.org/PermitView/MapSearch) for existing development and riverbed. NRCS Soil Survey used for areas with ag potential (see appendix).*
4. *"Existing Development" includes River Oaks Hot Springs and surrounding grounds, including ponds, landscaping and pavement. Also includes other onsite roads and disturbed areas within the project site.*
5. *"Level Rangeland" includes all portions of site less than 2% in slope that are not neither developed nor in the riverbed.*
6. *Raw score derived from Table 5 of LESA Instruction Manual.*
7. *Weighted score is raw score multiplied by % of project area.*

Surrounding Agricultural Land Rating

The Surrounding Agricultural Land Rating is designed to provide a measurement of the level of agricultural land use for lands within the Zone of Influence (ZOI) of the project site. The "Zone of Influence" is the amount of surrounding lands up to a minimum of one-quarter mile from the project site boundary. Parcels that are intersected by the quarter-mile buffer are included in their entirety. Based on the percentage of agricultural land in the ZOI, the project site is assigned a "Surrounding Agricultural Land" score.

The LESA Model rates the potential significance of the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production more highly than one that has a relatively small percentage of surrounding land in agricultural production (California Department of Conservation, 1997). **Table 7** summarizes the land uses within one-quarter mile of the project site in each direction, including land use designations and presence of lands under Williamson Act (LCA) contract. **Figures 3 through 6** show the extent of the Zone of Influence in each direction from the project site.

Table 7. Surrounding Land Uses (within one-quarter mile)

Direction	Acres in "Zone of Influence"	% of all Area in ZOI	Land Use	General Plan Designation	Acres in Ag (or Rural Residential)	Acres Under LCA Contract	Acres in Salinas River
North	220	46%	River/AG/RR	POS/AG/RR	194	39	26
South	162	34%	River/Urban	POS; RSF-4; RMF-12; PF	0	0	15
West	50	10%	River/OS	POS	0	0	30
East	48	10%	Res Rural/AG	PF/RR	48	0	0
	480	**100%**			**242**	**39**	**71**

Source: SLO County PermitView, 2014; City of Paso Robles General Plan, 2003.

Notes:

1. *The "Zone of Influence" is a polygon one-quarter mile wide from the project boundary, which created four sectors as indicated in column 1 and shown on Figures 3 through 6.*
2. *Area to the north includes 136 acres in City, with the remainder in the County. Only County area is under LCA.*
3. *Some land to the East is within the County.*
4. *"Acres in Solinas River" includes 35 acres of City-owned land in the Salinas River as well as all private lands in the floodplain of the river.*

The project site is in the City, and is generally bounded by areas within the City limits, with the exception of a small area to the northeast of the site, and directly east. Much of the area to the north (even within the City limits) is in agricultural use, or designated for that purpose. Limited areas of Rural Residential development in the County are to the east (typically on 5-acre parcels), which may contain small areas of cultivation for private use. To provide the most conservative result, this analysis considers these rural residential parcels the same as agriculture. By this measure, 44% of the surrounding area within one-quarter mile is either designated or used for agriculture (including Rural Residential). About 8% of the surrounding area (all to the north within the County) is under LCA contract.

The Surrounding Agricultural Land score for the project site is shown in **Table 8**.

Table 8. Surrounding Land Scores

Total Acres in ZOI	Acres in Ag (or Rural Residential)	% in Ag or RR	Acres in Protected Resource Land	% in Protected Resource Land	Surrounding Ag Land Score	Surrounding Protected Resource Land Score
480	242	44%	115	39%	10	0

Source: SLO County PermitView, 2014; City of Paso Robles General Plan, 2003.

Notes:

1. *"Protected Resource Land" includes lands under LCA Contract and Public lands within the Salinas River from Table 7.*
2. *Scores are derived from Tables 6 and 7 from the LESA Instruction Manual.*

Figure 3. Quarter-Mile Zone of Influence – North (220 acres)

Figure 4. Quarter-Mile Zone of Influence – South (162 acres)

Figure 5. Quarter-Mile Zone of Influence – West (50 acres)

Figure 6. Quarter-Mile Zone of Influence – East (48 acres)

Surrounding Protected Resource Land Rating

The Surrounding Protected Resource Land Rating is essentially an extension of the Surrounding Agricultural Land Rating and is scored in a similar manner. Protected resource lands are those lands with long-term use restrictions that are compatible with or supportive of agricultural uses of land, including:

- *Williamson Act contracted land;*
- *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.*

There are about 74 acres within one quarter mile of the site considered to be Protected Resource Lands, including 39 acres in LCA contract, and about 35 acres of publicly-owned lands within the Salinas River (**Table 7**). However, to provide the most conservative result possible, this analysis expands the river lands to include all 71 acres within the flood plain of the Salinas River within a quarter mile of the project site, even though about half of that area is not within public ownership (or has conservation easements) and thus does not actually qualify as "protected" under the LESA guidelines. Using this more conservative approach, the LESA analysis will assume that 110 acres (39 in LCA; 71 in the Salinas River) are Protected Resource Lands for scoring purposes. This is about 23% of all the land within a quarter mile of the project site. **Figure 7** shows the extent of Protected Resource Lands surrounding the project site.

The Surrounding Protected Resource Land score for the project site is shown in **Table 8**. Note that this score is zero because less than 40% of the surrounding lands are considered "protected resources".

Figure 7. Protected Resource Lands in Zone of Influence

- **Land Conservation Act lands (in green) – 39 acres in ZOI**
- **Salinas River Flood Plain (in blue) – 71 acres; only 35 in public ownership (City WWTP)**

(note that the 71-acre flood plain area shown also includes lands outside the river not in public ownership)

4. Summary and Conclusions

The LESA Model is weighted so that half of the total score is derived from the Land Evaluation and half from the Site Assessment. There are 50 points possible in each category, with a total possible score of 100. As shown in **Table 9**, the Land Evaluation subscore is 32.68 for this project, while the Site Assessment subscore is 12.55. The total LESA score is 45.23.

It should be noted that this result is based on the following very conservative assumptions that tend to skew the score higher than would be the case if more typical assumptions were made:

- ***Storie Index Rating.*** *When converting the Storie index ratings to the revised ratings, a typical LESA approach would be to use the midpoint of the range of the former values (e.g., a Revised Storie Index rating of "1" would typically convert to "90", which is the midpoint in the range of 80 to 100 for that value. However, this study uses the high end of the range when converting values. Thus, a Revised Storie Index of "1" would convert to "100"not "90". This makes the Storie Index rating score higher than in a typical LESA analysis.*
- ***Water Resource Availability.*** The analysis assumes that water is available for irrigating the more level portions of the site, even though there are extreme drought conditions and both physical and regulatory issues that limit the potential use of groundwater. The assumption used in this analysis makes the Water Resource Availability Rating higher than would otherwise be expected.
- ***Surrounding Agricultural Lands.*** The analysis assumes that Residential Rural areas in the County qualify as "Agriculture", even on fully developed 5-acre residential parcels. This makes the "Surrounding Agricultural Land Rating" higher would otherwise be expected.
- ***Surrounding Protected Resource Lands.*** The analysis assumes that all lands within the Salinas River floodplain within a quarter-mile of the site would qualify as "protected resource lands", when a LESA analysis typically assumes only the publicly-owned and protected lands would qualify in this regard.

Table 9. Overall Project LESA Score Summary

Factor	Factor Rating (0-100 points)	Factor Weighting (Total = 100%)	Weighed Score
Land Evaluation (LE)			
1. Land Capability Classification (LCC)	59.09	25%	14.77
2. Storie Index Rating	71.62	25%	17.90
		Land Evaluation Subscore	***32.68***
Site Assessment (SA)			
1.Project Size Rating	50.00	15%	7.50
2.Water Resource Availability Rating	23.67	15%	3.55
3.Surrounding Agricultural Land Rating	10.00	15%	1.50
4.Surrounding Protected Resource Lands Rating	0	5%	0
		Site Assessment Subscore	***12.55***
		TOTAL LESA SCORE	**45.23**

Source: California Department of Conservation, 1997.
Note: Weighted Score is derived by multiplying the Factor rating by the Factor Weighting.

Determination of Significance

As shown in **Table 10**, a final LESA score between 40 and 59 is considered significant unless either the Land Evaluation or the Site Assessment subscore is less than 20. Because the Site Assessment subscore is less than 20, the impact of the conversion of the project site to non-agricultural use is considered **less than significant**.

Table 10. California LESA Model Scoring Thresholds

Total LESA Score	Determination of Significance
0 to 39	Not considered significant
40 to 59	Considered significant only if Land Evaluation **and** Site Assessment subscores are greater than or equal to 20 points
60 to 79	Considered significant unless **either** Land Evaluation or Site Assessment subscore is less than 20 points
80 to 100	Considered significant

Source: California Department of Conservation, 1997.

5. References and Report Preparer

References

City of Paso Robles General Plan, as amended, originally adopted 2003.

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Google Earth.

Report Preparer

This report was prepared by John Rickenbach, AICP, of **John F. Rickenbach Consulting**.

Appendix A

NRCS Soils Report – River Oaks Project

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for San Luis Obispo County, California, Paso Robles Area

River Oaks Project Site

April 17, 2014

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000

Warning: Soil Map may not be valid at this scale

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale

Please rely on the bar scale on each map sheet for map measurements

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey nrcs usda gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below

Soil Survey Area: San Luis Obispo County, California, Paso Robles Area
Survey Area Data: Version 5, Dec 16, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger

Date(s) aerial images were photographed: May 9, 2010—May 21, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident

Map Unit Legend

San Luis Obispo County, California, Paso Robles Area (CA665)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
100	Arbuckle fine sandy loam, 0 to 2 percent slopes	23.9	18.1%
104	Arbuckle-Positas complex, 30 to 50 percent slopes	9.4	7.1%
106	Arbuckle-San Ysidro complex, 2 to 9 percent slopes	9.1	6.9%
173	Mocho clay loam, 0 to 2 percent slopes	7.6	5.8%
177	Nacimiento-Ayar complex, 9 to 30 percent slopes	75.9	57.5%
212	Xerofluvents-Riverwash association	6.1	4.6%
Totals for Area of Interest		**132.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially

where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series.* Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases.* Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas.* Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Luis Obispo County, California, Paso Robles Area

100—Arbuckle fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

Elevation: 600 to 1,500 feet
Mean annual precipitation: 12 to 20 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 200 days

Map Unit Composition

Arbuckle and similar soils: 85 percent
Minor components: 15 percent

Description of Arbuckle

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium from mixed rock sources

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 15.8 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 1
Land capability (nonirrigated): 4c
Hydrologic Soil Group: C
Ecological site: COARSE LOAMY (R014XE003CA)

Typical profile

0 to 29 inches: Fine sandy loam
29 to 53 inches: Loam, sandy clay loam, clay loam
53 to 62 inches: Stratified sandy loam to very gravelly sandy clay loam

Minor Components

Unnamed, similar to arbuckle

Percent of map unit: 5 percent

San ysidro, loam

Percent of map unit: 5 percent

Cropley, clay

Percent of map unit: 3 percent

Hanford, fine sandy loam
Percent of map unit: 2 percent

104—Arbuckle-Positas complex, 30 to 50 percent slopes

Map Unit Setting
Elevation: 600 to 1,500 feet
Mean annual precipitation: 12 to 20 inches
Mean annual air temperature: 60 to 61 degrees F
Frost-free period: 200 days

Map Unit Composition
Arbuckle and similar soils: 40 percent
Positas and similar soils: 30 percent
Minor components: 30 percent

Description of Arbuckle

Setting
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium from mixed rock sources

Properties and qualities
Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.1 inches)

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 7e
Land capability (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: COARSE LOAMY (R014XE003CA)

Typical profile
0 to 29 inches: Fine sandy loam
29 to 53 inches: Sandy clay loam
53 to 62 inches: Stratified sandy loam to very gravelly sandy clay loam

Description of Positas

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium from mixed rock sources

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 9 to 20 inches to abrupt textural change
Drainage class: Well drained
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
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 7e
Land capability (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: COARSE LOAMY CLAYPAN (R014XE005CA)

Typical profile

0 to 10 inches: Coarse sandy loam
10 to 28 inches: Clay
28 to 40 inches: Sandy clay loam
40 to 60 inches: Stratified sandy loam to gravelly clay loam

Minor Components

Shimmon, loam on north slopes

Percent of map unit: 15 percent
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Unnamed, similar to positas

Percent of map unit: 8 percent

Balcom, loam

Percent of map unit: 1 percent

Linne, shaly clay loam

Percent of map unit: 1 percent

Nacimiento, silty clay loam

Percent of map unit: 1 percent

Unnamed, slopes of 50 to 75 percent
Percent of map unit: 1 percent

Badland
Percent of map unit: 1 percent

Greenfield, fine sandy loam
Percent of map unit: 1 percent

Ayar, silty clay
Percent of map unit: 1 percent

106—Arbuckle-San Ysidro complex, 2 to 9 percent slopes

Map Unit Setting

Elevation: 600 to 1,500 feet
Mean annual precipitation: 12 to 20 inches
Mean annual air temperature: 60 to 61 degrees F
Frost-free period: 200 days

Map Unit Composition

Arbuckle and similar soils: 40 percent
San ysidro and similar soils: 20 percent
Minor components: 39 percent

Description of Arbuckle

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium from mixed rock sources

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.8 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability classification (irrigated): 3e
Land capability (nonirrigated): 4e

Hydrologic Soil Group: C
Ecological site: COARSE LOAMY (R014XE003CA)

Typical profile
0 to 29 inches: Fine sandy loam
29 to 38 inches: Sandy clay loam
38 to 62 inches: Stratified sandy loam to very gravelly sandy clay loam

Description of San Ysidro

Setting
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed rocks

Properties and qualities
Slope: 2 to 9 percent
Depth to restrictive feature: 20 to 37 inches to abrupt textural change
Drainage class: Moderately well drained
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
Available water capacity: Low (about 3.4 inches)

Interpretive groups
Farmland classification: Farmland of statewide importance
Land capability classification (irrigated): 3e
Land capability (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: LOAMY CLAYPAN (R014XE029CA)

Typical profile
0 to 23 inches: Loam
23 to 38 inches: Clay loam
38 to 71 inches: Sandy loam

Minor Components

Greenfield, fine sandy loam
Percent of map unit: 14 percent

Unnamed, similar to san ysidro soil
Percent of map unit: 10 percent

Unnamed, simialr to arbuckle
Percent of map unit: 5 percent

Hanford, fine sandy loam
Percent of map unit: 5 percent

Cropley, clay
Percent of map unit: 2 percent

Rincon, clay loam
Percent of map unit: 2 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

173—Mocho clay loam, 0 to 2 percent slopes

Map Unit Setting

Elevation: 600 to 1,500 feet
Mean annual precipitation: 12 to 20 inches
Mean annual air temperature: 60 degrees F
Frost-free period: 200 days

Map Unit Composition

Mocho and similar soils: 75 percent
Minor components: 25 percent

Description of Mocho

Setting

Landform: Alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from calcareous sedimentary rock

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 11.2 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 1
Land capability (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: FINE LOAMY BOTTOM (R014XE025CA)

Typical profile

0 to 19 inches: Clay loam
19 to 64 inches: Clay loam

Minor Components

Still, clay loam
Percent of map unit: 10 percent

Unnamed
Percent of map unit: 10 percent

Sorrento, clay loam
Percent of map unit: 3 percent

Tujunga, fine sand
Percent of map unit: 2 percent

177—Nacimiento-Ayar complex, 9 to 30 percent slopes

Map Unit Setting
Elevation: 600 to 1,500 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 60 to 61 degrees F
Frost-free period: 200 days

Map Unit Composition
Nacimiento and similar soils: 35 percent
Ayar and similar soils: 30 percent
Minor components: 35 percent

Description of Nacimiento

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from calcareous shale and/or sandstone

Properties and qualities
Slope: 9 to 30 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Fine Loamy 9-13 (R015XE020CA)

Typical profile

0 to 18 inches: Silty clay loam
18 to 28 inches: Silty clay loam
28 to 32 inches: Weathered bedrock

Description of Ayar

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from calcareous shale and/or sandstone

Properties and qualities

Slope: 9 to 30 percent
Depth to restrictive feature: 40 to 70 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 9.6 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 4e
Land capability (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: Clayey Hills 10-14" p.z. (R015XE001CA)

Typical profile

0 to 9 inches: Silty clay
9 to 61 inches: Clay
61 to 65 inches: Weathered bedrock

Minor Components

Linne, shaly clay loam

Percent of map unit: 15 percent

Diablo, clay

Percent of map unit: 10 percent

Balcom, loam

Percent of map unit: 4 percent

Calodo, clay loam
Percent of map unit: 1 percent

Rock outcrop
Percent of map unit: 1 percent

Unnamed, areas of deep gullies
Percent of map unit: 1 percent

Dibble, clay loam
Percent of map unit: 1 percent

Shimmon, loam
Percent of map unit: 1 percent

Positas, coarse sandly loam
Percent of map unit: 1 percent

212—Xerofluvents-Riverwash association

Map Unit Setting

Elevation: 600 to 1,500 feet
Mean annual precipitation: 12 to 20 inches
Mean annual air temperature: 60 degrees F
Frost-free period: 200 days

Map Unit Composition

Xerofluvents and similar soils: 50 percent
Riverwash: 30 percent
Minor components: 20 percent

Description of Xerofluvents

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
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: Frequent
Frequency of ponding: None

Interpretive groups

Farmland classification: Not prime farmland

Land capability classification (irrigated): 6w
Land capability (nonirrigated): 6w
Hydrologic Soil Group: A

Typical profile
0 to 10 inches: Sand
10 to 30 inches: Stratified gravel to sand to sandy loam
30 to 60 inches: Stratified gravelly sand to gravelly loam

Description of Riverwash

Setting
Landform: Channels

Properties and qualities
Slope: 0 to 2 percent
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 24 inches
Frequency of flooding: Frequent

Interpretive groups
Farmland classification: Not prime farmland
Land capability classification (irrigated): 8w
Land capability (nonirrigated): 8w

Typical profile
0 to 6 inches: Sand
6 to 60 inches: Error

Minor Components

Metz, loamy sand
Percent of map unit: 7 percent

Elder, loam
Percent of map unit: 7 percent

Tujunga, fine sand
Percent of map unit: 6 percent

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PRIME FARMLAND

PRIME FARMLAND HAS THE BEST COMBINATION OF PHYSICAL AND CHEMICAL FEATURES ABLE TO SUSTAIN LONG-TERM AGRICULTURAL PRODUCTION. THIS LAND 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 DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF STATEWIDE IMPORTANCE

FARMLAND OF STATEWIDE IMPORTANCE IS 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 FOUR YEARS PRIOR TO THE MAPPING DATE.

UNIQUE FARMLAND

UNIQUE FARMLAND CONSISTS OF LESSER QUALITY SOILS USED FOR THE PRODUCTION OF THE STATE'S LEADING AGRICULTURAL CROPS. THIS LAND IS USUALLY IRRIGATED, BUT MAY INCLUDE NONIRRIGATED ORCHARDS OR VINEYARDS AS FOUND IN SOME CLIMATIC ZONES IN CALIFORNIA. LAND MUST HAVE BEEN CROPPED AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF LOCAL IMPORTANCE

AREAS OF SOILS THAT MEET ALL THE CHARACTERISTICS OF PRIME OR STATEWIDE, WITH THE EXCEPTION OF IRRIGATION. ADDITIONAL FARMLANDS INCLUDE DRYLAND FIELD CROPS OF WHEAT, BARLEY, OATS, AND SAFFLOWER.

FARMLAND OF LOCAL POTENTIAL

LANDS HAVING THE POTENTIAL FOR FARMLAND, WHICH HAVE PRIME OR STATEWIDE CHARACTERISTICS AND ARE NOT CULTIVATED.

GRAZING LAND

GRAZING LAND IS LAND ON WHICH THE EXISTING VEGETATION IS SUITED TO THE GRAZING OF LIVESTOCK.

URBAN AND BUILT-UP LAND

URBAN AND BUILT-UP LAND IS OCCUPIED BY STRUCTURES WITH A BUILDING DENSITY OF AT LEAST 1 UNIT TO 1.5 ACRES, OR APPROXIMATELY 6 STRUCTURES TO A 10-ACRE PARCEL. COMMON EXAMPLES INCLUDE RESIDENTIAL, INDUSTRIAL, COMMERCIAL, INSTITUTIONAL FACILITIES, CEMETERIES, AIRPORTS, GOLF COURSES, SANITARY LANDFILLS, SEWAGE TREATMENT, AND WATER CONTROL STRUCTURES.

OTHER LAND

OTHER LAND IS 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 BORROW PITS, AND WATER BODIES SMALLER THAN 40 ACRES. VACANT AND NONAGRICULTURAL LAND SURROUNDED ON ALL SIDES BY URBAN DEVELOPMENT AND GREATER THAN 40 ACRES IS MAPPED AS OTHER LAND.

Important Farmlands Map
Detail of River Oaks Area (in red rectangle)

Appendix B

State of California
Agricultural Land Evaluation and Site Assessment Model
Instruction Manual

CALIFORNIA AGRICULTURAL

LAND EVALUATION AND SITE ASSESSMENT MODEL

Instruction Manual

For further information, please contact:

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CALIFORNIA AGRICULTURAL

LAND EVALUATION AND SITE ASSESSMENT MODEL

Instruction Manual
1997

Department of Conservation
Office of Land Conservation

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EXECUTIVE SUMMARY

Land Evaluation and Site Assessment (LESA) is a term used to define an approach for rating the relative quality of land resources based upon specific measurable features. The formulation of a California Agricultural LESA Model is the result of Senate Bill 850 (Chapter 812 /1993), which charges the Resources Agency, in consultation with the Governor's Office of Planning and Research, with developing an amendment to Appendix G of the California Environmental Quality Act (CEQA) Guidelines concerning agricultural lands. Such an amendment is intended "to provide lead agencies 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" (Public Resources Code Section 21095).

The California Agricultural LESA Model is composed of six different factors. Two Land Evaluation factors are based upon measures of soil resource quality. Four Site Assessment factors provide measures of a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, each of these factors is separately rated on a 100 point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project, with a maximum attainable score of 100 points. It is this project score that becomes the basis for making a determination of a project's potential significance, based upon a range of established scoring thresholds. This Manual provides detailed instructions on how to utilize the California LESA Model, and includes worksheets for applying the Model to specific projects.

INTRODUCTION

Defining the LESA System

The Land Evaluation and Site Assessment (LESA) system is a point-based approach that is generally used for rating the relative value of agricultural land resources. In basic terms, a given LESA model is created by defining and measuring two separate sets of factors. The first set, Land Evaluation, includes factors that measure the inherent soil-based qualities of land as they relate to agricultural suitability. The second set, Site Assessment, includes factors that are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land. While this dual rating approach is common to all LESA models, the individual land evaluation and site assessment factors that are ultimately utilized and measured can vary considerably, and can be selected to meet the local or regional needs and conditions for which a LESA model is being designed to address. In short, the LESA methodology lends itself well to adaptation and customization in individual states and localities. Considerable additional information on LESA may be found in *A Decade with LESA - the Evolution of Land Evaluation and Site Assessment* (8).

Background on LESA Nationwide

In 1981, the federal Natural Resources Conservation Service (NRCS), known then as the Soil Conservation Service, released a new system that was designed to provide objective ratings of the agricultural suitability of land compared to demands for nonagricultural uses of lands. The system became known as Land Evaluation and Site Assessment, or LESA. Soon after it was designed, LESA was adopted as a procedural tool at the federal level for identifying and addressing the potential adverse effects of federal programs (e.g., funding of highway construction) on farmland protection. The Farmland Protection Policy Act of 1981 (5) spells out requirements to ensure that federal programs, to the extent practical, are compatible with state, local, and private programs and policies to protect farmland, and calls for the use of LESA to aid in this analysis. Typically, staff of the NRCS is involved in performing LESA scoring analyses of individual projects that involve other agencies of the federal government.

Since its inception, the LESA approach has received substantial attention from state and local governments as well. Nationwide, over two hundred jurisdictions have developed local LESA methodologies (7). One of the attractive features of the LESA approach is that it is well suited to being modified to reflect regional and local conditions. Typical local applications of LESA include assisting in decision making concerning the sitting of projects, changes in zoning, and spheres of influence determinations. LESA is

also increasingly being utilized for farmland protection programs, such as the identification of priority areas to concentrate conservation easement acquisition efforts.

Because of the inherent flexibility in LESA model design, there is a broad array of factors that a given LESA model can utilize. Some LESA models require the measurement of as many as twenty different factors. Over the past 15 years, the body of knowledge concerning LESA model development and application has begun to indicate that LESA models utilizing only several basic factors can capture much of the variability associated with the determination of the relative value of agricultural lands. In fact, LESA models with many factors are increasingly viewed as having redundancies, with different factors essentially measuring the same features, or being highly correlated with one another. Additional information on the evolution and development of the LESA approach is provided in, A *Decade with LESA -The Evolution of Land Evaluation and Site Assessment* (8).

Development of the California Agricultural LESA Model

In 1990 the Department of Conservation commissioned a study to investigate land use decisions that affect the conversion of agricultural lands in California. The study, conducted by Jones and Stokes Associates, Inc., was prepared in response to concerns about agricultural land conversion identified in the *California Soil Conservation Plan* (1) (developed by the ad hoc Soil Conservation Advisory Committee serving the Department of Conservation in 1987). Among these concerns was the belief that there was inadequate information available concerning the socioeconomic and environmental implications of farmland conversions, and that the adequacy of current farmland conversion impact analysis under the California Environmental Quality Act (CEQA) was not fully known. The findings of this study are included in the publication, *The Impacts of Farmland Conversion in California* (2).

Currently, neither CEQA nor the State CEQA Guidelines contains procedures or specific guidance concerning how agencies should address farmland conversion impacts of projects. The only specific mention of agricultural issues is contained in Appendix G of the State CEQA Guidelines, which states that a project will normally have a significant effect on the environment if it will "convert prime agricultural land to non-agricultural use or impair the agricultural productivity of prime agricultural land".

Among the conclusions contained in *The Impacts of Farmland Conversion in California* study was that the lack of guidance in how lead agencies should address the significance of farmland conversion impacts resulted in many instances of no impact analysis at all. A survey of environmental documents sent to the Governor's Office of Planning and Research (OPR) between 1986 and 1988 was performed. The survey

showed that among projects that affected at least 100 acres of land and for which agriculture was a project issue, nearly 30 percent received Negative Declarations, and therefore did not did not receive the environmental impact analysis that would be provided by an Environmental Impact Report (EIR).

Of those projects involving the conversion of agricultural lands and being the subject of an EIR, the study found a broad range of approaches and levels of detail in describing the environmental setting, performing an impact analysis, and providing alternative mitigation measures. The only agricultural impacts found to be significant in the EIRs were those involving the direct removal of prime agricultural lands from production by the project itself. The focus on prime farmland conversion in the projects surveyed was deemed to be related to the narrow direction provided in Appendix G of the State CEQA Guidelines.

The formulation of a California LESA Model is the result of Senate Bill 850 (Chapter 812 /1993), which charges the Resources Agency, in consultation with the Governor's Office of Planning and Research, to develop an amendment to Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Such an amendment is intended "to provide lead agencies 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" (Public Resources Code Section 21095). This legislation authorizes the Department of Conservation to develop a California LESA Model, which can in turn be adopted as the required amendment to Appendix G of the CEQA Guidelines.

Presentation of the California LESA Model

The California LESA Model is presented in this Manual in the following sections:

Section I. provides a listing of the information and tools that will typically be needed to develop LESA scores for individual projects.

Section II. provides step-by-step instructions for scoring each of the six Land Evaluation and Site Assessment factors that are utilized in the Model, with an explanation of the rationale for the use of each factor.

Section III. defines the assignment of weights to each of the factors relative to one another, and the creation of a final LESA score for a given project.

Section IV. assigns scoring thresholds to final LESA scores for the purpose of determining the significance of a given project under CEQA where the conversion of agricultural lands is a project issue.

Additionally:

Appendix A. provides an abridged set of step-by-step LESA scoring instructions that can be used and reproduced for scoring individual projects.

Appendix B. demonstrates the application of the California LESA Model to the scoring of a hypothetical project.

The California Agricultural LESA Model

Section I. Required Resources and Information

The California Land Evaluation and Site Assessment (LESA) Model requires the use and interpretation of basic land resource information concerning a given project. A series of measurements and calculations is also necessary to obtain a LESA score. Listed below are the materials and tools that will generally be needed to make these determinations.

Land Evaluation and Site Assessment calculations will require:

1. A calculator or other means of tabulating numbers

2. An accurately scaled map of the project area, such as a parcel map

3. A means for making acreage determinations of irregularly shaped map units. Options include, from least to most technical:

    - A transparent grid-square or dot-planimeter method of aerial measurement

    - A hand operated electronic planimeter

    - The automatic planimetry capabilities of a Geographic Information System (GIS)

4. A modern soil survey, generally produced by the USDA Natural Resources Conservation Service, which delineates the soil-mapping units for a given project. [Note: If modern soil survey information is not available for a given area of study, it may be necessary to draw upon the services of a professional soil scientist to perform a specific project survey].

5. Maps that depict land uses for parcels including and surrounding the project site, such as the Department of Conservation's Important Farmland Map series, the Department of Water Resources Land Use map series, or other appropriate information.

6. Maps or information that indicate the location of parcels including and surrounding the project site that are within agricultural preserves, are under public ownership, have conservation easements, or have other forms of long term commitments that are considered compatible with the agricultural use of a given project site.

Section II. Defining and Scoring the California Land Evaluation and Site Assessment Model Factors

This section provides detailed step-by-step instructions for the measurement and scoring of each of the Land Evaluation and Site Assessment factors that are utilized in the California Agricultural LESA Model, and is intended to serve as an introduction to the process of utilizing the Model. Once users are familiar with the Model, a more streamlined set of instructions and scoring sheets is available in Appendix A. In addition, the scoring of a hypothetical project is presented using these scoring sheets in Appendix B.

Scoring of Land Evaluation Factors

The California LESA Model includes two Land Evaluation factors that are separately rated:

1. The Land Capability Classification Rating
2. The Storie Index Rating

The information needed to make these ratings is typically available from soil surveys that have been conducted by the federal Natural Resources Conservation Service (formerly known as the Soil Conservation Service). Consultation should be made with NRCS staff (field offices exist in most counties) to assure that valid and current soil resource information is available for the project site. Copies of soil surveys are available at local field offices of the NRCS, and may also be available through libraries, city and county planning departments, the Cooperative Extension, and other sources. In addition, a Certified Professional Soil Scientist (CPSS) may also be consulted to obtain appropriate soil resource information for the project site. A directory of CPSS registered soil consultants is available through the Professional Soil Scientists Association of California, P.O. Box 3213, Yuba City, CA 95992-3213; phone: (916) 671-4276.

1) The USDA Land Capability Classification (LCC) - The LCC indicates the suitability of soils for most kinds of crops. Groupings are made according to the limitations of the soils when used to grow crops, and the risk of damage to soils when they are used in agriculture. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receive the highest rating (Class I). Specific subclasses are also utilized to further characterize soils. An expanded explanation of the LCC is included in most soil surveys.

2) The Storie Index - The Storie Index provides a numeric rating (based upon a 100 point scale) of the relative degree of suitability or value of a given soil for intensive agriculture. The rating is based upon soil characteristics only. Four factors that represent the inherent characteristics and qualities of the soil are

considered in the index rating. The factors are: profile characteristics, texture of the surface layer, slope, and other factors (e.g., drainage, salinity).

In some situations, only the USDA Land Capability Classification information may be currently available from a given published soil survey. However, Storie Index ratings can readily be calculated from information contained in soil surveys by qualified soil scientists. Users are encouraged to seek assistance from NRCS staff or Certified Professional Soil Scientists to derive Storie Index information for the soils as well. If, however, limitations of time or resources restrict the derivation of Storie Index ratings for the soils within a region, it may be possible to adapt the Land Evaluation by relying solely upon the LCC rating. Under this scenario the LCC rating would account for 50 percent of the overall LESA factor weighting.

Identifying a Project's Soils

In order to rate the Land Capability Classification and Storie Index factors, the evaluator must identify the soils that exist on a given project site and determine their relative proportions. A **Land Evaluation Worksheet** (Table 1A.) is used to tabulate these figures, based upon the following:

Step 1.
Locate the project on the appropriate map sheet in the Soil Survey.

Step 2.
Photocopy the map sheet and clearly delineate the project boundaries on the map, paying close attention to the map scale.

Step 3.
Identify all of the soil mapping units existing in the project site (each mapping unit will have a different map unit symbol) and enter the each mapping unit symbol in **Column A** of the **Land Evaluation Worksheet** (Table 1A).

Step 4.
Calculate the acreage of each soil mapping unit present within the project site using any of the means identified in **Section 1**, **Required Resources and Information**, and enter this information in **Column B**.

Step 5.

Divide the acres of each soil mapping unit by the total project acreage to determine the proportion of each unit that comprises the project, and enter this information in Column C.

1. Land Evaluation - The Land Capability Classification Rating

Step 1.
In the Guide to Mapping Units typically found within soil surveys, identify the Land Capability Classification (LCC) designation (e.g., IV-e) for each mapping unit that has been identified in the project and enter these designations in **Column D** of the **Land Evaluation Worksheet** (Table 1A.).

Step 2.
From Table 2., **The Numeric Conversion of Land Capability Classification Units**, obtain a numeric score for each mapping unit, and enter these scores in **Column E**.

Step 3.
Multiply the proportion of each soil mapping unit (**Column C**) by the LCC points for each mapping unit (**Column E**) and enter the resulting scores in **Column F**.

Step 4.
Sum the LCC scores in **Column F** to obtain a single LCC Score for the project. Enter this LCC Score in **Line 1** of the **Final LESA Worksheet** (Table 8)

Table 2. Numeric Conversion of Land Capability Classification Units

Land Capability Classification	LCC Point 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

Table 1A.
Land Evaluation Worksheet

Land Capability Classification (LCC) and Storie Index Scores

A	B	C	D	E	F	G	H
Soil Map Unit	Project Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
Totals		(Must Sum to 1.0)		*LCC Total*		*Storie Index Total*	

Table 1B.
Site Assessment Worksheet 1.

Project Size Score

	I	J	K
	LCC Class I - II	LCC Class III	LCC Class IV - VIII
Total Acres			
Project Size Scores			

Highest Project Size Score [ ]

2. Land Evaluation - The Storie Index Rating Score

Step 1.
From the appropriate soil survey or other sources of information identified in Appendix C, determine the Storie Index Rating (the Storie Index Rating is already based upon a 100 point scale) for each mapping unit and enter these values in **Column G** of the **Land Evaluation Worksheet** (Table 1A.).

Step 2.
Multiply the proportion of each soil mapping unit found within the project (**Column C**) by the Storie Index Rating (**Column G**), and enter these scores in **Column H**.

Step 3.
Sum the Storie Index Rating scores in **Column H** to obtain a single Storie Index Rating score for the project. Enter this Storie Index Rating Score in **Line 2** of the **Final LESA Worksheet** (Table 8)

Scoring of Site Assessment Factors

The California LESA Model includes four Site Assessment factors that are separately rated:

1. **The Project Size Rating**
2. **The Water Resources Availability Rating**
3. **The Surrounding Agricultural Land Rating**
4. **The Surrounding Protected Resource Land Rating**

1. Site Assessment - The Project Size Rating

The Project Size Rating relies upon acreage figures that were tabulated under the Land Capability Classification Rating in Table 1A. The Project Size rating is based upon identifying acreage figures for three separate groupings of soil classes within the project site, and then determining which grouping generates the highest Project Size Score.

Step 1.
Using information tabulated in **Columns B** and **D** of the **Land Evaluation Worksheet** (Table 1A), enter acreage figures in **Site Assessment Worksheet 1. - Project Size** (Table 1B) using either **Column I, J,** or **K** for each of the soil mapping units in a given project.

Step 2.
Sum the entries in **Column I** to determine the total acreage of Class I and II soils on the project site.

Sum the entries in **Column J** to determine the total acreage of Class III soils on the project site.

Sum the entries in **Column K** to determine the total acreage of Class IV and lower rated soils on the project site.

Step 3.
For each of the three columns, apply the appropriate scoring plan provided in Table 3, **Project Size Scoring**, and enter the **Project Size Score** for each grouping in the **Site Assessment Worksheet 1. - Project Size** (Table 1B). Determine which column generates the highest score. The highest score becomes the overall **Project Size Score**. Enter this number in **Line 3** of the **Final LESA Scoresheet** (Table 8).

Table 3. 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
60-79	90	120-159	90	240-319	80
40-59	80	80-119	80	160-239	60
20-39	50	60-79	70	100-159	40
10-19	30	40-59	60	40-99	20
fewer than 10	0	20-39	30	fewer than 40	0
		10-19	10		
		fewer than 10	0		

Explanation of the Project Size Factor

The Project Size factor in the California Agricultural LESA Model was developed in cooperation with Nichols-Berman, a consulting firm under contract with the Department of Conservation. A thorough discussion of the development of this rating is presented by Nichols-Berman in a report to the Department entitled, *Statewide LESA Methodologies Report - Project Size and Water Resource Availability Factors* (3).

The inclusion of the measure of a project's size in the California Agricultural LESA Models is a recognition of the role that farm 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 be more favorable for larger operations. In addition, larger operations tend to have greater impacts upon the local economy through direct employment, as well as impacts upon support industries (e.g., fertilizers, farm equipment, and shipping) and food processing industries.

While the size of a given farming operation may in many cases serve as *a* direct indicator of the overall economic viability of the operation, The California Agricultural LESA Model does not specifically consider the issue of economic viability. The variables of economic viability for a specific farm include such factors as the financial management and farming skills of the operator, as well as the debt load and interest rates being paid by an individual operator, which are issues that cannot readily be included in a statewide LESA model.

In terms of agricultural productivity, the size of a farming operation can be considered not just from its total acreage, but the acreage of different quality lands that comprise the operation. Lands with higher quality soils lend themselves to greater management and cropping flexibility and have the potential to provide a greater economic return per unit acre. For a given project, instead of relying upon a single acreage figure in the Project Size rating, the project is divided into three acreage groupings based upon the Land Capability Classification ratings that were previously determined in the Land Evaluation analysis. Under the Project Size rating, relatively fewer acres of high quality soils are required to achieve a maximum Project Size score. Alternatively, a maximum score on lesser quality soils could also be derived, provided there is a sufficiently large acreage present. Acreage figures utilized in scoring are the synthesis of interviews that were conducted statewide for growers of a broad range of crops. In the interviews growers were queried as to what acreage they felt would be necessary in order for a given parcel to be considered attractive for them to farm.

The USDA LCC continues to be the most widely available source of information on land quality. Project Size under this definition is readily measurable, and utilizes much of the same information needed to score a given project under the Land Evaluation component of the methodology. This approach also complements the LE determination, which, while addressing soil quality, does not account for the total acreage of soils of given qualities within a project.

This approach allows for an accounting of the significance of high quality agricultural land as well as lesser quality agricultural lands, which by virtue of their large area can be considered significant agricultural resources. In this way, no single acreage figure for a specific class of soils (e.g., soils defined as “prime”) is necessary.

2. Site Assessment - The Water Resources Availability Rating

The Water Resources Availability Rating is based upon identifying the various water sources that may supply a given property, and then determining whether different restrictions in supply are likely to take place in years that are characterized as being periods of drought and non-drought. **Site Assessment Worksheet 2. - Water Resources Availability Worksheet** (Table 4) is used to tabulate the score.

Step 1.
Identify the different water resource types that are used to supply the proposed project site (for example, irrigation district water, ground water, and riparian water are considered to be three different types of water resources). Where there is only one water source identified for the proposed project, skip to Step 4.

Step 2.
Divide the proposed project site into portions, with the boundaries of each portion being defined by the irrigation water source(s) supplying it. A site that is fully served by a single source of water will have a single portion, encompassing the entire site. A site that is fully served by two or more sources that are consistently merged together to serve a crop's needs would also have a single portion. (e.g., a portion of the proposed project may receive both irrigation district and groundwater). If the project site includes land that has no irrigation supply, consider this acreage as a separate portion as well. Enter the water resource portions of the project in **Column B** of Table 4, **Site Assessment Worksheet 2. - Water Resources Availability**.

[As an example, a hypothetical project site is determined to have four separate water supply portions:

Portion 1 is served by irrigation district water only;
Portion 2 is served by ground water only;
Portion 3 is served by *both* irrigation district water and ground water;
Portion 4 is not irrigated at all.**]**

Step 3.
Calculate the proportion of the total project area that is represented by each water resource portion, and enter these figures in **Column C** of **Site Assessment Worksheet 2. - Water Resources Availability**, verifying that the sum of the proportions equals 1.0.

Table 4. 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				
2				
3				
4				
5				
6				
		(Must Sum to 1.0)	***Total Water Resource Score***	

Step 4.

For each water resource supply portion of the project site, determine whether irrigated and dryland agriculture is *feasible*, and if any *physical* or *economic restrictions* exist, during both *drought* and *non-drought* years. These italicized terms are defined below:

- A *physical restriction* is an occasional or regular interruption or reduction in a water supply, or a shortened irrigation season, that forces a change in agricultural practices -- such as planting a crop that uses less water, or leaving land fallow. (This could be from cutbacks in supply by irrigation and water districts, or by ground or surface water becoming depleted or unusable. Poor water quality can also result in a physical restriction -- for example by requiring the planting of salt-tolerant plants, or by effectively reducing the amount of available water.)

- An *economic restriction* is a rise in the cost of water to a level that forces a reduction in consumption. (This could be from surcharge increases from water suppliers as they pass along the cost of finding new water supplies, the extra cost of pumping more ground water to make up for losses in surface water supplies, or the extra energy costs of pumping the same amount of ground water from deeper within an aquifer.)

- Irrigated agricultural production is *feasible* when:

  1) There is an existing irrigation system on the project site that can serve the portion of the project identified in Step 2;

  2) *Physical* and/or *economic restrictions* are not severe enough to halt production; and

  3) It is possible to achieve a viable economic return on crops though irrigated production.

(A major question that should be considered is, if there is an irrigated crop that can be grown within the region, can it actually be grown on the project site? Depending upon the jurisdiction, some typical crops that have a large water demand may not be feasible to grow on the project site, while others that require less water are feasible. Information to aid in making this determination can be obtained from county agricultural commissioners, the UC Cooperative Extension, irrigation districts, and other sources.)

- *Dryland production* is *feasible* when rainfall is adequate to allow an economically viable return on a nonirrigated crop.

- A *drought year* is a year that lies within a defined drought period, as defined by the Department of Water Resources or by a local water agency. Many regions of the state are by their arid nature dependent upon imports of water to support irrigated agriculture. These regions shall not be considered under periods of drought unless a condition of drought is declared for the regions that typically would be providing water exports.

Step 5.
Each of the project's water resource supply portions identified in **Step 2** is scored separately. Water Resources Availability scoring is performed by identifying the appropriate condition that applies to each portion of the project, as identified in Table 5., **Water Resource Availability Scoring**. Using Table 5, identify the option that best describes the water resource availability for that portion and its corresponding water resource score. Option 1 defines the condition of no restrictions on water resource availability and is followed progressively with increasing restrictions to Option 14, the most severe condition, where neither irrigated nor dryland production is considered feasible. Enter each score into **Column D** of Table 4.

Step 6.
For each portion of the project site, determine the section's weighted score by multiplying the portion's score (**Column D**), by its proportion of the project area (**Column C**), and enter these scores in **Column E**, the weighted Water Availability Score. Sum the **Column E** scores to obtain the total Water Resource Availability Score, and enter this figure in **Line 4** of the **Final LESA Score Sheet** (Table 8).

Table 5. Water Resource Availability Scoring

Option	Non-Drought Years			Drought Years			WATER RESOURCE SCORE
	RESTRICTIONS			RESTRICTIONS			
	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	Irrigated Production Feasible?	Physical Restrictions ?	Economic Restrictions ?	
1	YES	NO	NO	YES	NO	NO	100
2	YES	NO	NO	YES	NO	YES	95
3	YES	NO	YES	YES	NO	YES	90
4	YES	NO	NO	YES	YES	NO	85
5	YES	NO	NO	YES	YES	YES	80
6	YES	YES	NO	YES	YES	NO	75
7	YES	YES	YES	YES	YES	YES	65
8	YES	NO	NO	NO	– –	– –	50
9	YES	NO	YES	NO	– –	– –	45
10	YES	YES	NO	NO	– –	– –	35
11	YES	YES	YES	NO	– –	– –	30
12	Irrigated production not feasible, but rainfall adequate for dryland production in both drought and non-drought years						25
13	Irrigated production not feasible, but rainfall adequate for dryland production in non-drought years (but not in drought years)						20
14	Neither irrigated nor dryland production feasible						0

Explanation of the Water Resource Availability Rating

The Water Resource Availability factor in the California Agricultural LESA Model was developed in cooperation with Nichols-Berman, a consulting firm under contract with the Department of Conservation. A thorough discussion of the development of this rating is presented by Nichols-Berman in a report to the Department entitled, *Statewide LESA Methodologies Report - Project Size and Water Resource Availability Factors* (3). During the development of this factor it became apparent that certain conditions unique to California would need to be represented in this system.

First, it was decided to classify water reliability based upon the *effects* on agricultural production (such as being forced to change to lower-value crops, putting in groundwater pumps, or cutting back on the acreage farmed) rather than the actual *type* of limitation (such as a limitation on the quantity, frequency, or duration of water delivery). LESA systems have traditionally focused on the latter. However, it was found that the many types of limitations are too varied in California to adequately represent in the LESA system. In the Statewide LESA system, these effects are referred to as *restrictions*.

Second, the factor had to include an interrelation with cost. The historical shortages and unreliability of California water use has led to the establishment of various interconnected and dual systems. Probably more than any other state, reliability is related with cost -- a more reliable water supply can sometimes be obtained, but at a greater cost. Therefore, *restrictions* were classified into two major categories -- *physical* and *economic*. These are separated because, generally, a physical restriction is more severe than an economic restriction and this should be reflected in the LESA system.

Third, the factor had to include the effects of the drought cycle in California. During the drought of 1987 to 1992, many agricultural areas of the state experienced water shortages. The impact of these shortages resulted in a number of different actions. Some areas were able to avoid the worst effects of the drought simply by implementing water conservation measures. Other areas were able to obtain additional water supplies, such as by securing water transfers or simply pumping more groundwater, but at an increase in the overall price of water. Other options included shifting crops, replanting to higher value crops to offset the increase in water prices, or leaving land fallow. A project site that experiences restrictions during a drought year should not be scored as high as a similar project site that does not.

The easiest way to make determinations of irrigation feasibility and the potential restrictions of water sources is to investigate the cropping history of the project site. For instance, was the water supply to the project site reduced by the local irrigation district during the last drought? If the site has a ground water supply, do area ground water levels sometimes drop to levels that force markedly higher energy costs to pump the water?

If the history of the project site is unavailable (including when the site has recently installed an irrigation system), look at the history of the general area. However, remember that the project site may have different conditions than the rest of the region. For instance, the project site could have an older water right than others in the region. Although certain areas of the state had severe restrictions on water deliveries during the last drought, some parcels within these areas had very secure deliveries due to more senior water rights. If this was the case in the region of the project site, check the date of water right and compare it with parcels that received their total allotment during the last drought. The local irrigation district should have information on water deliveries.

The scoring of water resource availability for a project site should not just reflect the adequacies of water supply in the past -- it should be a *prediction* of how the water system will perform in the future. For instance, a local jurisdiction might find that the allocation of flows to stream and river systems has been recently increased for environmental reasons, which will decrease the future available surface water supply. In this case, the past history of the site is not an adequate representation of future water supply and water system performance.

3. Site Assessment - The Surrounding Agricultural Land Rating

Determination of the surrounding agricultural land use rating is based upon the identification of a project's "Zone of Influence" (ZOI), which is defined as that 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. The determination of the ZOI is described below, and is illustrated with an example in Figure 1.

Defining a Project's "Zone of Influence"

Step 1.
Locate the proposed project on an appropriate map and outline the area and dimensions of the proposed project site.

Step 2.
Determine the smallest rectangle that will completely contain the project site (Rectangle **A**).

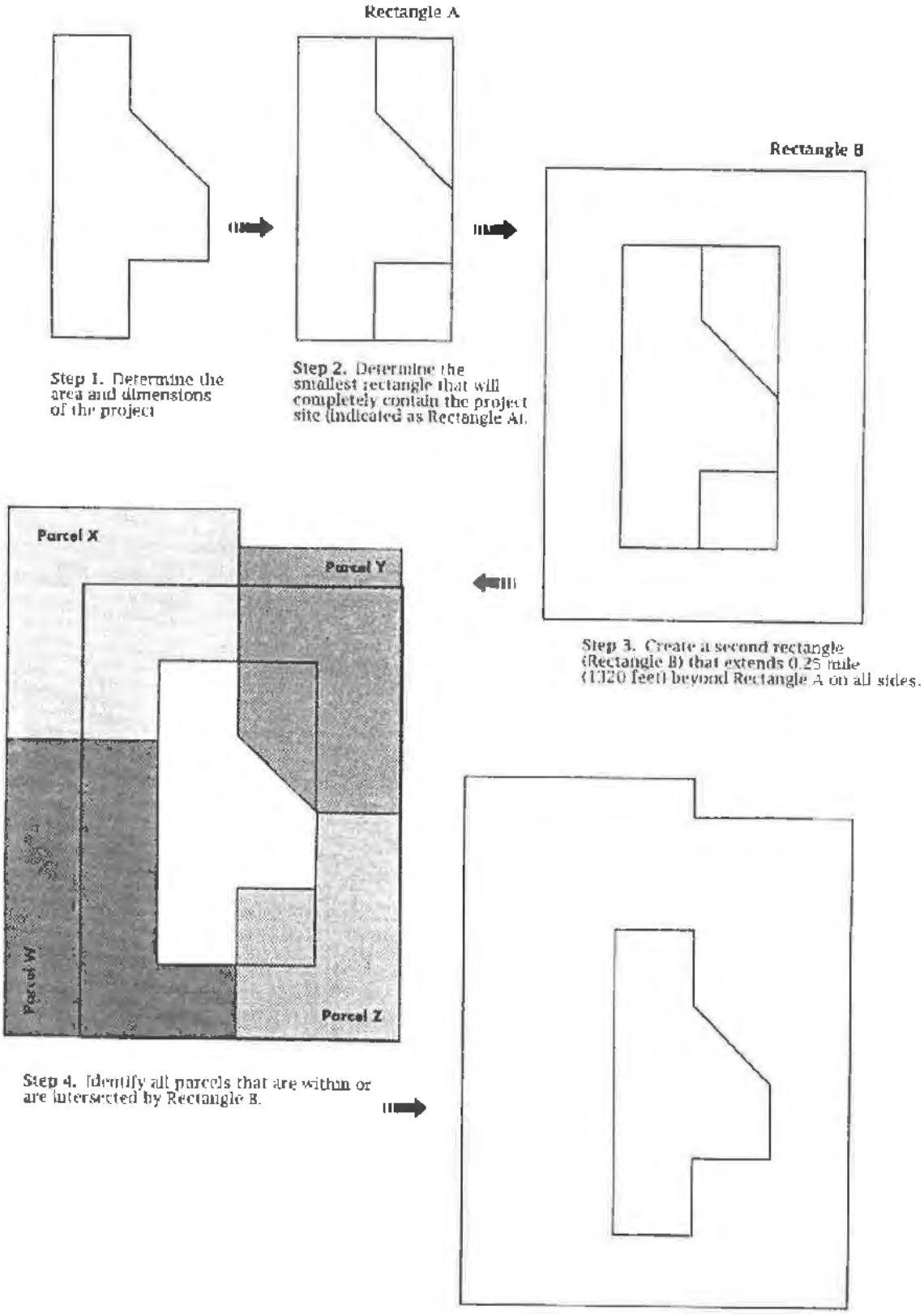
Step 3.
Create a second rectangle (Rectangle B) that extends 0.25 mile (1320 feet) beyond Rectangle A on all sides.

Step 4.
Identify all parcels that are within or are intersected by Rectangle B.

Step 5.
Define the project site's "zone of influence" as the entire area of all parcels identified in Step 4, less the area of the proposed project from Step 1.

[In the illustration provided in Figure 1, Parcels W, X, and Y extend beyond Rectangle B and are therefore included in their entirety in defining the project site's Zone of Influence.]

Figure 1: Defining a Project's Zone of Influence



Step 1. Determine the area and dimensions of the project

Step 2. Determine the smallest rectangle that will completely contain the project site (indicated as Rectangle A).

Step 3. Create a second rectangle (Rectangle B) that extends 0.25 mile (1320 feet) beyond Rectangle A on all sides.

Step 4. Identify all parcels that are within or are intersected by Rectangle B.

Step 5. Define the project's "zone of influence" as the entire area of all parcels identified in Step 4, less the area of the proposed project from Step 1.

In this example, parcels W, X, and Y extend beyond Rectangle B and are therefore included in the their entirety in defining the project's zone of influence.

Measuring Surrounding Agricultural Land

Step 1.
Calculate the percentage of the project's Zone of Influence that is currently producing agricultural crops. [This figure can be determined using information from the Department of Conservation's Important Farmland Map Series, the Department of Water Resources' Land Use Map Series, locally derived maps, or direct site inspection. For agricultural land that is currently fallowed, a determination must be made concerning whether the land has been fallowed as part of a rotational sequence during normal agricultural operations, or because the land has become formally "committed" to a nonagricultural use. Land that has become formally committed, whether fallow or not, should not generally be included in determining the proportion of the Zone of Influence that is agricultural land. For further information on the definition of Committed Land, refer to the following Explanation of the Surrounding Agricultural Land Rating.]

Step 2.
Based on the percentage of agricultural land in the ZOI determined in Step 1, assign a Surrounding Agricultural Land score to the project according to Table 6, and enter this score in **Line 5** of the **Final LESA Scoresheet** (Table 8) .

Table 6. Surrounding Agricultural Land Rating

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

Explanation of the Surrounding Agricultural Land Rating

The Surrounding Agricultural Land Rating is designed to provide a measurement of the level of agricultural land use for lands in close proximity to a subject project. The California Agricultural LESA Model rates the potential significance of the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production more highly than one that has a relatively small percentage of surrounding land in agricultural production. The definition of a "Zone of Influence" that accounts for surrounding lands up to a minimum of one quarter mile from the project boundary is the result of several iterations during model development for assessing an area that will generally be a representative sample of surrounding land use. In a simple example, a single one quarter mile square project (160 acres) would have a Zone of Influence that is a minimum of eight times greater (1280 acres) that the parcel itself.

Land within a Zone of Influence that is observed to be fallow will require a case by case determination of whether this land should be considered agricultural land. The Department of Conservation's Important Farmland Maps may be of assistance in making this determination. In addition, land currently in agricultural production may be designated as being "committed" to future nonagricultural development. The Department of Conservation's Farmland Mapping and Monitoring Program has a land use designation of Land Committed to Nonagricultural Use, and is defined as "land that is permanently committed by local elected officials to nonagricultural development by virtue of decisions which cannot be reversed simply by a majority vote of a city council or county board of supervisors. The "committed" land must be so designated in an adopted local general plan, and must also meet the requirements of either (a) or (b) below:

(a). It must have received one of the following final discretionary approvals:

1. Tentative subdivision map (approved per the Subdivision Map Act);
2. Tentative or final parcel map (approved per the Subdivision Map Act);
3. Recorded development agreement (per Government Code §65864);
4. Other decisions by a local government which are analogous to items #1-3 above and which exhibit an element of permanence. Zoning by itself does <u>not</u> qualify as a permanent commitment.

<u>Or</u>

(b) It must be the subject of one of the final fiscal commitments to finance the capital improvements specifically required for future development of the land in question as shown below:

1. Recorded Resolution of Intent to form a district and levy an assessment;
2. Payment of assessment;
3. Sale of bonds;
4. Binding contract, secured by bonds, guaranteeing installation of infrastructure;
5. Other fiscal commitments which are analogous to items #1-4 above and exhibit an element of permanence."

Lead agencies are encouraged to identify Land Committed to Nonagricultural Use within a project's ZOI and make the determination whether this land, while still in agricultural production, be considered nonagricultural land for the purposes of the calculation performed here.

4. Site Assessment - The Surrounding Protected Resource Land Rating

The Surrounding Protected Resource Land Rating is essentially an extension of the Surrounding Agricultural Land Rating, and is scored in a similar manner. Protected resource lands are 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
- Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses.

Instructions for the Surrounding Protected Resource Land Rating

Step 1.
Utilizing the same "Zone of Influence" (ZOI) area calculated for a project under the Surrounding Agricultural Land Rating, calculate the percentage of the ZOI that is Protected Resource Land, as defined above.

Step 2.
Assign a Surrounding Protected Resource Land score to the project according to Table 7, and enter this score on **Line 6** of the **Final LESA Scoresheet** (Table 8).

Table 7. Surrounding Protected Resource Land Rating

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

Section III. Weighting of Factors and Final LESA Scoring

The California LESA Model is weighted so that 50 percent of the total LESA score of a given project is derived from the Land Evaluation factors, and 50 percent from the Site Assessment factors. Individual factor weights are listed below, with the sum of the factor weights required to equal 100 percent.

Land Evaluation Factors

Land Capability Classification	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 Weighting	**100%**

Each factor is measured separately (each on 100 point scale) and entered in the appropriate line in **Column B** of the **Final LESA Scoresheet** (Table 8). Each factor's score is then multiplied by its respective factor weight, resulting in a weighted factor score in **Column D** as indicated in Table 8. The weighted factor scores are summed, yielding a Total LESA Score (100 points maximum) for a given project, which is entered in **Line 7** of **Column D**.

Table 8. Final LESA Scoresheet

A	B		C		D
Factor Name	Factor Rating (0-100 points)	X	Factor Weighting (Total = 1.00)	=	Weighted Factor Rating
Land Evaluation					
1. Land Capability Classification	<Line 1>_____	X	0.25	=	_____
2. Storie Index Rating	<Line 2>_____	X	0.25	=	_____
Site Assessment					
1. Project Size	<Line 3>_____	X	0.15	=	_____
2. Water Resource Availability	<Line 4>_____	X	0.15	=	_____
3. Surrounding Agricultural Lands	<Line 5>_____	X	0.15	=	_____
4. Protected Resource Lands	<Line 6>_____	X	0.05	=	_____
			Total LESA Score (sum of weighted factor ratings)		<Line 7>_____

Section IV. California Agricultural LESA Scoring Thresholds - Making Determinations of Significance Under CEQA

A single LESA score is generated for a given project after all of the individual Land Evaluation and Site Assessment factors have been scored and weighted as detailed in Sections 2 and 3. Just as with the scoring of individual factors that comprise the California Agricultural LESA Model, final project scoring is based on a scale of 100 points, with a given project being capable of deriving a maximum of 50 points from the Land Evaluation factors and 50 points from the Site Assessment factors.

The California Agricultural LESA Model is designed to make determinations of the potential significance of a project's conversion of agricultural lands during the Initial Study phase of the CEQA review process. Scoring thresholds are based upon both the total LESA score as well as the component LE and SA subscores. In this manner the scoring thresholds are dependent upon the attainment of a minimum score for the LE and SA subscores so that a single threshold is not the result of heavily skewed subscores (i.e., a site with a very high LE score, but a very low SA score, or vice versa). Table 9 presents the California Agricultural LESA scoring thresholds.

Table 9. 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 LE and 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

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Memorandum

Date: **May 16, 2014**

To: **Ed Gallagher, Community Development Director**

From: **John Rickenbach, AICP, Principal Planner**

Subject: **River Oaks II Project, Agricultural Issues and the CEQA Process**

The following memorandum discusses the River Oaks II project in the context of the City's recent legal opinion with regard to the CEQA process and the analysis of agricultural issues. Recent information (including a LESA analysis to address farmland conversion impacts) and a close examination of the CEQA record for the Borkey Area Specific Plan suggest that such impacts would be less than significant for the River Oaks II project.

A. City Legal Opinion

As stated in a memorandum dated May 14, 2014, the City's legal opinion (paraphrased) is that an EIR will be required for the River Oaks II project for the following reasons:

1. **Impacts to agricultural resources (prime soils) will be significant.** This assertion is based on the fact that the 1989 Borkey Area Specific Plan (BASP) EIR concluded that there would be a significant unavoidable impact to agriculture because of the loss of 126 acres of prime soils, and that the proposed project would be responsible for a portion of this loss of acreage.

2. **Not appropriate to tier from 1989 EIR.** Because of the age of the EIR and recent changes to the Public Resources Code, a CEQA document cannot tier from an EIR more than 3 years old, so the original Statement of Overriding Considerations cannot be applied to a new project for agricultural impacts that were found to be significant and unavoidable.

3. **Modifying the 300-Foot Buffer could result in new impacts.** If development on the River Oaks site requires modification of the existing 300-foot buffer, new impacts would be introduced not previously disclosed.

B. CEQA Process

It is never advisable—and indeed, now no longer allowed under PRC 21094(a)(2)(d)—to tier from an older EIR for a Specific Plan, because the conditions that existed at the time it was prepared have likely changed too much to make the original analysis meaningful as the basis for the new CEQA document. This correctly recognizes that physical factors, project circumstances or regulatory requirements may have changed since the preparation of the original EIR.

For that reason, a new project in such an area must be analyzed based on a stand-alone CEQA document. This is precisely what was done in 2002 for the proposed GPA and SPA associated with the Paso Robles Hot Springs project. That project was processed through a Mitigated Negative Declaration, which did not tier from the 1989 BASP EIR, but instead functioned as a stand-alone document. Specifically, key relevant findings from that document include:

1. The project was to amend the BASP to expand Subarea A by 117 acres to the north to include recently annexed land; to rezone 23 acres from AG to PF; and to establish a PD overlay on 231 acres of the BASP to allow the proposed Paso Robles Hot Springs project;
2. An Initial Study and MND was prepared to address this action that referenced, but did not tier from, the 1989 BASP EIR.
3. The potential conversion of a limited amount of prime soil was determined to be less than significant.
4. Mitigation measures related to agriculture were required to address the following subissues:
    a. Erosion and soil disturbance;
    b. Williamson Act compliance (the site was then under LCA contract);
    c. The 300-foot agricultural buffer. The existing ag buffer was moved to the north along the recently-moved City limit boundary to address potential conflicts between development in the City and agriculture in the County.
5. Findings were made that through a mitigation agreement, required mitigation measures would reduce all impacts to a less than significant level.
6. No Statement of Overriding Considerations was made, because all impacts were found to be less than significant with required mitigation.

The fact that this project was processed through a stand-alone MND, and all impacts were found to be mitigable, established the precedent that the City has done this and can do it again as appropriate. As noted above, that MND did not rely on the 1989 EIR, but instead was an independent analysis for a different project under different circumstances. This same approach can be applied to the River Oaks II Project, if through the Initial Study the City can determine that all impacts are either less than significant, or can be mitigated to a less than significant level.

C. Agricultural Impacts of the River Oaks II Project

The City's May 2014 legal opinion presumes that the River Oaks II project's impacts to agricultural resources would be significant and unavoidable. Such a determination can only be made through a formal CEQA process. As demonstrated through the 2002 Paso Robles Hot Springs Project MND, it is possible to make the determination that impacts are potentially less than significant, under the appropriate circumstances.

The City, as Lead Agency, must make this determination through a review of current information, as analyzed in a new CEQA Initial Study. The following information is included to assist the City as it makes this determination:

1. **Conversion of Farmland.** City staff has previously indicated that the California Land Evaluation and Site Assessment (LESA) model would be an appropriate tool to determine whether there would be significant impacts to agriculture on the River Oaks site, since this tool is explicitly included in the CEQA Guidelines for this purpose. This tool was not available at the time the 1989 BASP EIR was prepared, and thus represents an opportunity to revisit previous conclusions regarding farmland conversion in an updated regulatory context. To assist the City, we have prepared a LESA analysis for your consideration and review. When the conversion of a limited amount of potentially high quality soils is considered in the context of existing and surrounding land uses, parcel size, and water availability, our analysis found that impacts to agricultural land would be less than significant.

2. **Agricultural Buffer.** The City's legal opinion is that a 300-foot buffer was required as mitigation in the 1989 BASP EIR, and thus must be maintained as part of the current project. In fact, the 300-foot buffer was identified as a **project feature of the original BASP, and not prescribed as an additional mitigation measure**. Please refer to Figure 2-4 of the 1989 EIR (Proposed Land Use and Circulation Plan, Chapter 2, page 12), which shows a 300-foot ag buffer as part of the proposed project.

   The intent of this feature was to reduce potential conflicts between development in the City and neighboring agricultural uses in the County. (This is the reason why this feature was moved northward as a mitigation measure in the 2002 MND, since the City-County boundary had moved northward.) The 1989 EIR stated that the buffer acted as a mitigative project feature that would ensure impacts related to land use conflicts would be less than significant (Chapter 3, page 24). As stated on Page 24 of the BASP EIR:

   > *"Several elements of the Borkey Area Specific Plan have been devised explicitly to mitigate the potential effects of plan area development on remaining adjacent agricultural uses... The plan prescribes an agricultural protection strip, or "buffer", of 300 feet along the northeasterly edge of Subarea A..."*

   The 1989 EIR analysis concluded that the plan's project features, including the buffer, were sufficient to ensure that impacts related to agricultural land use conflicts would be reduced to a less than significant level. No additional mitigation was determined necessary. No analysis was included in the EIR to determine whether a smaller buffer might have resulted in a similarly less than significant impact, but it is reasonable to assume that subsequent analysis could possibly draw such a conclusion under the appropriate conditions.

   As noted above, the 300-foot buffer is no longer on the River Oaks project site, but was moved northward to the neighboring property, along the southern edge of the County-City boundary, the new northern boundary of BASP Subarea A (pursuant to GPA 1-02; SPA 02-001; Exhibit B, page 36 of the revised Specific Plan). This was consistent with the

intent of the original project feature and EIR analysis, which was to minimize land use conflicts between development in the City and agricultural uses in the County.

Note that there are many examples of areas within the City limits where urban development and agriculture abut, because the long-term presumption is that areas in the City will eventually develop to non-agricultural uses, so land use conflicts are temporary. Such interfaces can be potentially complementary, when agricultural uses are intentionally designed within residential communities, either for the reasons of community character or as community gardens.

In summary, the key points of our analysis include:

- The 300-foot buffer was a mitigative project feature of the 1989 BASP, the intent of which was to minimize land use conflicts between urban land in the City and agriculture in the County.
- The fact that the 2002 MND for the expanded BASP moved the buffer to the new City-County boundary confirms that intent.
- The buffer is no longer on the River Oaks project site.
- Finally, there are many examples in the City of urban and agricultural uses directly abutting.

These facts suggest that impacts from the project on neighboring uses to the north would be less than significant. The proposed project would not affect the location or function of the existing 300-foot buffer within the BASP, which will still serve its original purpose at the northern boundary of the Borkey Area at the edge of the City.

D. Conclusion

In previous correspondence to the applicant, the City indicated the impetus for requiring an EIR for the project was to address various agricultural issues that may not be fully mitigable. As demonstrated above, we believe that based on an analysis of facts not available when the 1989 BASP EIR was prepared, such impacts are actually less than significant and do not require mitigation.

For that reason, we request that the City use the information provided in our November 2013 application as amended through our new analysis of agricultural issues, and prepare an Initial Study that leads to a Mitigated Negative Declaration, an approach similar to what was successfully used for the 2002 GPA and Specific Plan Amendment.

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Memorandum

Date: **February 9, 2015**

To: **Dick Willhoit**

From: **John Rickenbach, AICP, Principal Planner**

Subject: **River Oaks II Project, Agricultural Buffers in California**

In its ongoing correspondence related to the River Oaks II project, City of Paso Robles staff has often stated the need for including an appropriate buffer between existing agricultural uses and proposed development. To address this concern, the following memorandum discusses the project in the context of issues related to agricultural buffers, specifically focusing on the requirements of other communities in California, and the rationale for these requirements. The memo also explores the scientific basis for these buffer policies, and the degree of flexibility built into such policies to address uncertainties inherent in such policies.

Summary of Findings

1. The City of Paso Robles does not have an adopted citywide agricultural buffer policy, but recently-approved projects in the City have included vineyards adjacent to urban development without any buffer between them, consistent with principles included in the City's *2006 Economic Strategy*.

2. There is a 300-foot buffer requirement at the northern edge of the Borkey Area Specific Plan area (along the City boundary), but there is no buffer requirement associated with the River Oaks property, which is entirely within and adjacent to parcels within the City along its northern boundary.

3. The buffer policies of other agencies in California vary widely, but in general exhibit a high degree of flexibility, in recognition of the following circumstances:
    a. The type and density of non-agricultural development
    b. The type of crops on grown on the adjacent parcel
    c. Agricultural practices on the adjacent parcel (the use of sprayed pesticides or herbicides, for example)
    d. Wind direction
    e. Topography
    f. Physical barriers within the buffer area

4. Other wine-oriented communities similar to Paso Robles (notably the City of Napa and Napa County) have flexible buffer policies that range from 80-120 feet, which may be waived entirely under certain circumstances.

5. There are few scientific studies that have addressed buffer issues, and those that there are conclude that fences, berms, trees, and other barriers with the buffer zone can greatly reduce the need for a wide buffer. This finding is consistent with the opinion of a local vineyard management expert, who also notes that onsite agricultural row crop management practices could reduce or eliminate the need for a buffer.

6. None of the cited buffer policies described in this paper appear to be based on (or cite) specific scientific studies in developing their criteria, but appear to be based on past practices, informal input from the agricultural and development communities, or in some cases, reflect the currently-adopted policies of neighboring or similar jurisdictions.

7. There are important issues associated with buffer areas that impact their degree of effectiveness, as well as their potential to create nuisances for adjacent property owners.

A. City of Paso Robles Requirements

The City of Paso Robles does not have a standard buffer requirement between agricultural and non-agricultural uses. However, as noted in our memo to the City dated May 16, 2014, there had historically been a 300-foot buffer associated with the Borkey Area Specific Plan, specifically to separate agricultural uses in the unincorporated portions of the County from urban uses in the City. The May 2014 memo analyzed this requirement with respect to the current project, concluding that the 300-foot buffer no long exists at the northern edge of the current River Oaks property, since the area directly to the north is now in the City as well (see GPA 1-02; SPA 02-001; Exhibit B, page 36 of the revised Specific Plan). The City now appears to concur with that conclusion, as stated in a letter to you dated December 2014.

In that letter, the City endeavored to work with you to determine an appropriate project design that addresses the fact that there would likely be ongoing agricultural uses on the property to the north until such time that the neighboring property owner wishes to develop under the Borkey Area Specific Plan.

The City's adopted *2006 Economic Strategy* indirectly addresses the City's approach with regard to the appropriate use of agricultural buffers that could form the basis for future General Plan policy. That document provides direction for the economic health of the City. These principles suggest the integration of ongoing agricultural uses with future urban development, including:

- *Support agriculture as a viable industry and visitor attraction by featuring it as the distinguishing community environment.*

- *Promote the City as a center of high value agriculture and industry.*

- *Encouroge synergy omongst and between, and reinvest in, attractions that showcase Paso Robles' unique identity and heritage including...agriculture.*

In recognition of these concepts, recent city developments on the urban fringe have encouraged the integration of urban uses and agriculture, promoting this synergy as an important local and regional attraction. An example of this is the recently approved Ayers Hotel, which features a vineyard planted adjacent to the hotel and other adjacent residential property. There is effectively no buffer between vineyard uses and urban development. Its approval stemmed in part because the project was considered consistent with the principles included in the City's *2006 Economic Strategy*. This project established the precedent that the City could approve projects without agricultural buffers if considered consistent with its long-term economic health.

B. Requirements of Other California Cities and Counties

There are no adopted statewide standards related to agricultural buffers, so the issue is left to local jurisdictions to address. Relatively few communities within California include adopted standards, which are typically either included in the General Plan as a range depending on specific circumstance, or within the zoning code. The ones that do are those with a rural-urban interface, and face issues similar to those found in San Luis Obispo County. Rarely is there a fixed buffer requirement. This relates to four factors: 1) the type of crops (and practices associated with those crops); 2) the type of development (including residential densities); 3) physical site conditions (prevailing winds, topography, and other site considerations); and 4) the factor that there is little supporting literature indicating the effectiveness of any specific standard.

The last point is particularly important, and underscores the reasons why buffer ranges vary so widely. The few studies that have explored this issue directly have addressed this question not only as function of buffer width, but a variety of approaches to screening within the buffer area.

Vegetative screening (sufficiently well-canopied trees, for example), has been found to be a relatively effective approach for minimizing spray drift and dust that can substantially reduce the need for a wide buffer area (DNRLGP, 1997). These screenings can also be effective for reducing odors from livestock, fertilizer and pest control applications. Depending on the design of the screening features, and other physical factors, effective buffer widths could be as little as 10 to 50 feet (*A Landscape Buffering Strategy for the Agricultural-Urban Interface*, City of Abbotsford, BC, 2008; Pennebaker, 2009). Effective screening features with a buffer could include:

- Tree rows of sufficient height and depth;
- Ditches, swales and other topographic relief (whether natural or manmade);
- Berms or fences;
- Landscaped areas that could include walkways and trails; and
- Water features, such as ponds

Nevertheless, because relatively little study has been conducted to assess the effectiveness of these measures, many jurisdictions in California tend to be much more conservative in their approach to agricultural buffers. (It should be noted that many cities and counties do not have any buffer requirements at all.) In Table 1 summarizes a broad cross-section of standards applied throughout the state, for jurisdictions that have such standards:

Table 1. Representative Agricultural Buffer Requirements in California

Agency	Minimum Requirement	Source
Santa Cruz County	200 feet	http://www.sccoplanning.com/PlanningHome/Environmental/AgriculturalResources/AgriculturalBufferSetbacks.aspx
City of Napa	80-120 feet (depends on residential density)	http://qcode.us/codes/napa/view.php?topic=17-17_52-17_52_040&frames=on
Napa County	80-120 feet (depends on residential density)	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
Santa Barbara County	100-300 feet (for residential or commercial)	http://longrange.sbcountyplanning.org/programs/ag_buffer/AgBufferOrdCLUDC%20Board%20Reso4851.pdf
Solano County	300 feet	http://www.co.solano.ca.us/civicax/filebank/blobdload.aspx?blobid=6493
City of Davis	150 feet	http://qcode.us/codes/davis/view.php?topic=40a-40a_01-40a_01_050
SLO County	200-600 feet (to vineyards)	http://www.slocounty.ca.gov/Assets/AG/assets/Buffer+Policy_2005.pdf
City of Watsonville	200 feet	http://www.coastal.ca.gov/sc/lcpawat1-99-rf.pdf
City of Arroyo Grande	100 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
City of Brentwood	100-300 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
City of Ontario	100 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
City of Fairfield	300 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
Sonoma County	100-200 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
Sutter County	100-300 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
Yolo County	150-300 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
Ventura County	150-300 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
Monterey County	200 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
Mendocino County	200 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
El Dorado County	200 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
Tuolumne County	200 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses
Stanislaus County	150-300 feet	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1087&context=theses

Many of these requirements acknowledge, however, that requirements could be reduced if it can be shown through additional study that a reduced buffer would be equally effective to minimize potential conflicts. In addition, several agencies will reduce their buffer requirement if a project incorporates vegetative screening features, notably Ventura County, Monterey County, and Yuba County.

In general, counties have established larger buffer areas than cities, likely because of the inherently rural nature of counties. Some cities that do have substantial urban-agricultural interfaces, such as Ventura and Santa Maria, do not have any buffer requirements at all. Similarly, the City of San Luis Obispo does not specify a buffer requirement, although future development on that city's rural fringe (notably within the Airport, Margarita, Orcutt, and proposed San Luis Ranch Specific Plans) will be required to address potential urban-rural conflicts through project design, consistent with general guidance set forth in those specific plans.

Notably, none of the above-referenced buffer policies cite any specific scientific studies that support the buffer requirements, but instead appear to rely on past practices, informal input from the agricultural and development communities, or in some cases, reflect the currently-adopted policies of neighboring or similar jurisdictions.

C. Case Study: City of Napa

As a vineyard and tourist-oriented semi-rural community similar to Paso Robles, the City of Napa's buffer policies are particularly instructive. As described in that city's municipal code, they are as follows:

> ***Purpose and Required Provisions of Agricultural Buffers***
> *The purpose of these regulations is to minimize potential conflicts between agriculture and urban residential uses by providing an appropriate agricultural buffer. The following provisions shall be required for all residentially zoned lots adjacent to the Rural Urban Limit (RUL) when development is proposed:*
>
> - *Setback – a special agricultural setback of between 80 and 120 feet between any dwellings or other buildings designed for human habitation and the nearest residential property line*
>
> *adjoining the URL. The exact distance shall be based upon the overall density of the residential project as follows:*
> - *0 – 6 units per acre = 80 foot setback*
> - *6 – 10 units per acres = 100 foot setback*
> - *Greater than 10 units per acre = 120 foot setback*
> - *Permanent landscape buffer area at least 20 feet wide.*
>
> ***Buffer Composition***
> *Within the special agricultural setback a permanent landscape buffer area at least 20 feet wide measured from the residential property line(s) adjoining the RUL and nearest agricultural property line(s) shall provide a clear boundary between urban and agricultural uses. The landscape buffer shall consist of:*
>
> - *A mix of trees, shrubs, berms, fences, walls, etc. sufficient to reduce noise, dust, diffuse light and act as a physical separation between the housing and agricultural activities in a design acceptable to the Planning Commission (or Community Development Department Director in the case of single-family dwellings exempt from Planning Commission review).*
>
> ***Other Requirements***
> - *No accessory structures are permitted within the landscape buffer area (except buffer fences and walls as well as pump stations or other similar improvements)*

- *Permanence of the landscaped buffer shall be assured through appropriate easements or equally effective restrictions and ongoing maintenance and funding mechanisms.*
- *Final landscape plans shall specify that all plant materials be certified by the Napa County Agricultural Commissioner inspection program for freedom from pests.*
- *All approved agricultural buffer measures to mitigate agricultural – urban residential land use conflicts shall become project conditions of approval.*
- *Site design shall include a project layout with streets that DO NOT end at the RUL to preclude a future extension into unincorporated areas outside the RUL.*

Waivers and Modifications

- *The Planning Commission or Community Development Director may, after consultation with the Agricultural Commissioner, waive the requirement for an agricultural buffer plan for projects where it can be clearly demonstrated that no agricultural – urban land use conflicts will result from development of the property.*
- *The Planning Commission or Community Development Director may, after consultation with the Agricultural Commissioner, modify or substitute different requirements than those identified above for developments on a project specific basis if the different requirements will achieve the intended purpose of this section.*

The City of Napa's standards exhibit a high degree of flexibility and provide a wide level of discretion for the Planning Commission and Community development direction, recognizing the fact that projects need to be examined on a case-by-case basis because differing physical circumstances require different solutions to be equally effective.

D. Case Study: San Luis Obispo County

It is useful to closely examine the requirements of San Luis Obispo County, not only because they are the most restrictive on the list, but because the City of Paso Robles is located in the County.

The County does not have set minimum buffer requirements, but recommends a range of buffer distances depending on the crop grown on the adjacent agricultural parcel. The buffer range associated with adjacent vineyards is 200 to 600 feet. However, as noted in the County's 2010 Agricultural Element (Appendix C, Table 1):

> *"Site-specific non-crop factors (such as topography, prevailing wind direction, and elevation differences) and proposal specifications often affect the final buffer distance recommendation within ranges listed. Significant overriding factors or land unsuitable for agricultural use could justify recorded buffers less than the indicated range."*

The County's buffer policies also recognize special circumstances in developing an appropriate buffer, particularly when the adjacent agricultural parcel has the potential for future development:

> *"When buffers are recommended for proposed land use projects adjacent to production agriculture on non-agriculturally zoned property, the report will normally state: 'The buffer shall become null and void if future development on adjacent parcel(s) precludes production agriculture.' Such a determination shall be made in consultation with the Department of Agriculture."*

Thus, while the County's buffer policies are extremely conservative compared to other jurisdictions, they are geared toward the rural projects, and recognize a high degree of flexibility for areas that

have the potential to be developed with non-agricultural uses. Ultimately, the County's policies suggest that projects need to be evaluated on a case-by-case basis.

E. Other Issues Related to Agricultural Buffers

Other factors appear to be more important than buffer distance in developing an appropriate interface between agricultural and non-agricultural uses. According to local vineyard management consultant George Donati, the most commonly-cited ag nuisance complaint is related to headlights from tractors shining into homes during nighttime ag operations. The most effective way to address this is to ensure that row crops are aligned parallel with the homes facing the ag field, so that field vehicles will move parallel to the adjacent roadway (between crop rows), and not perpendicular, where headlights can shine into the first row of homes unobstructed. Other effective solutions include planting a visual barrier of trees or bushes between the fields and homes that block ground level views of the fields.

Because of regulatory limitations on dust drift and chemical overspray (both must remain onsite), Donati says, buffer distances are less important than controlling nuisances that are not buffer dependent. Commonly-cited nuisances of this type relate to parking and driving practices of field workers, who often use the roadways adjacent to homes. While an important compatibility concern, this does not relate to buffer distance, but to parking and field access management.

Studies have also shown that maintenance of buffer areas can be problematic. Apart from administrative issues (who maintains them), these areas can present nuisances, including blocking views, and weed/pest proliferation if not regularly maintained. However, if designed and maintained properly, studies have also concluded these can be neighborhood assets, both visually and functionally.

F. Conclusions

The following conclusions may be drawn from this analysis:

1. The City of Paso Robles does not have an adopted citywide agricultural buffer policy, but recently-approved projects in the City have included vineyards adjacent to urban development without any buffer between them, consistent with principles included in the City's *2006 Economic Strategy*.

2. There is a 300-foot buffer requirement at the northern edge of the Borkey Area Specific Plan area (along the City boundary), but there is no buffer requirement associated with the River Oaks property, which is entirely within and adjacent to parcels within the City along its northern boundary.

3. The buffer policies of other agencies in California vary widely (and many rural cities and counties do not have them at all), but in general exhibit a high degree of flexibility, in recognition of the following circumstances:

a. The type and density of non-agricultural development
b. The type of crops on grown on the adjacent parcel
c. Agricultural practices on the adjacent parcel (the use of sprayed pesticides or herbicides, for example)
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G. Key References

City of Paso Robles *General Plan* (2003).

City of Paso Robles *Economic Strategy* (2006).

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Pennebaker, Laura. (2009). *Agricultural Buffer Criteria for the City of Arroyo Grande.* A Professional Project Presented to the Faculty of California Polytechnic State University San Luis Obispo, In Partial Fulfillment of the Requirements for the Degree of Master of City and Regional Planning.

City and County websites (various, as noted in Table 1)

Interview with George Donati of Pacific Vineyard Company, February 9, 2015.