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August 16, 2010 6327-05

Mr. Jason Moquin
City of Corona
400 South Vicentia Avenue
Corona, California 92882

Subject: Rancho de Paseo Valencia Land Evaluation and Site Assessment (LESA) Model

Dear Mr. Moquin:

The following document contains the results of the LESA Model completed for the proposed Rancho de Paseo Valencia project. The 64.3-acre project site consists of 39.9 acres which are located in the City of Corona (City), and 24.4 acres located in the unincorporated area of Riverside County (County). The project site is currently developed as fruit orchards, and implementation of the proposed project would result in the conversion of the agricultural land to a non-agricultural use. The LESA Model was completed in order to determine the significance of this conversion to non-agricultural use on the agricultural resources of the City.

INTRODUCTION

The LESA Model is a point-based approach for rating the relative importance of agricultural land resources based upon specific measurable features. The LESA Model evaluates measures of soil resource quality, a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, the factors are rated, weighted, and combined, resulting in a single numeric score. The project score becomes the basis for making a determination of a project's potential significance (LESA Model 1997).

Factors Considered

Land Capability Classification (LCC): The LCC shows the suitability of soils for most kinds of field crops. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. Soils are generally grouped at three levels: capability class, subclass, and unit. The capability classes are the broadest groups and are designated by numbers 1 through 8 with the numbers indicating progressively greater limitations and narrower choices for practical use. Capability subclasses are soil groups within one class and are designated by adding a small letter, e (erosion), w (water), s

(soil), or c (climate). Each letter indicates the feature which is the main hazard or risk within that class (Web Soil Survey 2010).

Storie Index Rating: The Storie Index Rating indicates a soil's potential for cultivated agriculture. The Storie Index is based on four factors: Factor A, degree of soil profile development; factor B, texture of the surface layer; factor C, slope; and factor X, manageable features, including drainage, microrelief, fertility, acidity, erosion, and salt content. A score ranging from 0 to 100 percent is determined for each factor, and the scores are multiplied together to derive an index rating. Storie Index Ratings are grouped into six classes: Grade 1 (excellent), 100 to 80; Grade 2 (good), 79 to 60; grade 3 (fair), 59 to 40; grade 4 (poor), 39 to 20; grade 5 (very poor), 19 to 10; and grade 6 (nonagricultural), less than 10 (Web Soil Survey 2010).

Project Size: The Project Size rating is based upon identifying acreage figures for three separate groupings of soil classes (based on the LCC) within the project site, and then determining which grouping generates the highest Project Size score. The Project Size is factored into the LESA Model because of the recognition that the size of a farm plays a role in the viability of commercial agricultural operations (LESA Model 1997).

Water Resource Availability: The Water Resource Availability Rating is based upon identifying the various water sources that may supply a given property, and then determining whether different restrictions are likely to take place in years that are characterized as being periods of drought and non-drought. This determination is made based on whether irrigated and dryland agriculture is feasible, and if any physical or economic restrictions exist, during both drought and non-drought years. Fourteen options are given to distinguish water resource availability for a project site, with Option 1 defining a condition of no restriction and Option 14 defining a condition where neither irrigated or dryland production is considered feasible (LESA Model 1997).

Surrounding Agricultural Land: 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 LESA Model considers the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production to be more significant than one that has a relatively small percentage of surrounding land in agricultural production. The amount of land in agricultural production is calculated for the Zone of Influence (ZOI) around a project site. The ZOI includes all land within one quarter mile from the project boundary, including the entirety of the parcel intersected by this distance (LESA Model 1997).

Surrounding Protected Resource Land: Protected resource lands are those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land and

include Williamson Act contracted lands; publicly owned lands maintained as park, forest, or watershed resources; and lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses (LESA Model 1997).

METHODOLOGY

The values and ratings used in the LESA Model for soil mapping units, LCCs, and Storie Index Rating Scores were derived from the Web Soil Survey, U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) (formerly the Soil Conservation Service). Determinations on agricultural and protected land coverage were made using Department of Conservation Farmland Mapping and Monitoring Program (FMMP) maps and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) maps, respectively, in addition to consultation with the City. All area and acreage calculations were made using Geographic Information System (GIS) software to ensure accuracy. The worksheets and maps used to complete the LESA Model are contained as attachments to this document.

RESULTS

The project site includes three soil map units: Cieneba Sandy Loam (142), Garretson gravelly very fine sandy loam (GdC) and Perkins gravelly loam (PgD2). The soil unit 142 covers 97% of the project site and has a LCC of Class 7, which indicates that the soils have very severe limitations that make them unsuitable for cultivation and restrict their use mainly to grazing , forestland, or wildlife habitat, and a subclass of "e," which indicates that the main hazard is the risk of erosion. The soil map units GdC and PgD2 cover .9 acres of the project site each and have a LCC of Class 3 with a subclass "e." The 62.4 acres with soil map unit 142 have a Storie Index Rating of 11, which falls in the class Grade Five–Very Poor. The soil map units GdC and PgD2 have a Storie Index Rating of 55 and 50, respectively, which both fall in the class Grade Three–Fair.

The portion of the project site within the City boundary currently has access to the City's water supply for irrigation purposes and was determined, in consultation with the City, to be a site where irrigated production is feasible with economic restrictions (Option 3). The County portion of the project site, on the other hand, does not have access to a water supply and was determined to not have potential for either irrigated or dryland production (Option 14).

The ZOI was calculated for the project site using GIS software. A buffer of one quarter mile was drawn surrounding the project site and then was intersected with surrounding parcels. This resulted in the creation of a ZOI which covered 1,586.04 acres. The determination of surrounding agricultural land was made using FMMP maps. Each parcel that was designated by

the FMMP was carefully analyzed for "commitment" to agriculture. A total of 72.5 acres (4.6% of the ZOI) were found to be in agricultural production and/or not "committed" to future nonagricultural development. A total of 1,242.54 acres, or 78% of the ZOI, was found to be classified as protected resource lands. A total of 1,195 acres are described for conservation in the Western Riverside MSHCP and/or components of the Cleveland National Forest, and the remaining 47.54 acres are local detention basins and conservation easement lands.

The calculated final LESA score for the proposed project was 21.83. The LESA Model scoring is based on a scale of 100 points, with all projects scoring less than 39 points "Not Considered Significant."

Sincerely,

Megan L. Stone

Megan Stone
Environmental Planner

Att: A, California Agricultural LESA Worksheets
B, Figures 1–4b
C, Web Soil Survey Maps and Scores

ATTACHMENT A

California Agricultural LESA Worksheets

NOTES

See Web Soil Survey maps for determination of scores.

Calculation of the Land Evaluation (LE) Score

Part 1. Land Capability Classification (LCC) Score:

(1) Determine the total acreage of the project.
(2) Determine the soil types within the project area and enter them in **Column A** of the **Land Evaluation Worksheet** provided on page 2-A.
(3) Calculate the total acres of each soil type and enter the amounts in **Column B**.
(4) Divide the acres of each soil type (**Column B**) by the total acreage to determine the proportion of each soil type present. Enter the proportion of each soil type in **Column C**.
(5) Determine the LCC for each soil type from the applicable Soil Survey and enter it in **Column D**.
(6) From the LCC Scoring Table below, determine the point rating corresponding to the LCC for each soil type and enter it in **Column E**.

LCC Scoring Table

LCC Class	I	IIe	IIs,w	IIIe	IIIs,w	IVe	IVs,w	V	VIe,s,w	VIIe,s,w	VIII
Points	100	90	80	70	60	50	40	30	20	10	0

(7) Multiply the proportion of each soil type (**Column C**) by the point score (**Column E**) and enter the resulting scores in **Column F**.
(8) Sum the LCC scores in **Column F**.
(9) Enter the LCC score in box <1> of the **Final LESA Score Sheet** on page 10-A.

Part 2. Storie Index Score:

(1) Determine the Storie Index rating for each soil type and enter it in **Column G**.
(2) Multiply the proportion of each soil type (**Column C**) by the Storie Index rating (**Column G**) and enter the scores in **Column H**.
(3) Sum the Storie Index scores in **Column H** to gain the Storie Index Score.
(4) Enter the Storie Index Score in box <2> of the **Final LESA Score Sheet** on page 10-A.

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
142	62.4	.972	7e	10	9.72	11	10.69
GdC	.9	.014	3e	70	.98	55	.77
PgD2	.9	.014	3e	70	.98	50	.70
Totals	64.2	(Must Sum to 1.0)		***LCC Total Score***	11.68	***Storie Index Total Score***	12.16

Site Assessment Worksheet 1.

Project Size Score

	I	J	K
	LCC Class I - II	LCC Class III	LCC Class IV - VIII
			62.4
		.9	
		.9	
Total Acres		1.8	62.4
Project Size Scores		0	20

Highest Project Size Score 20

NOTES

Project size = 64.2 acres
* does not include 1.1 acre Not-a-part parcel.

Calculation of the Site Assessment (SA) Score

Part 1. Project Size Score:.

(1) Using **Site Assessment Worksheet 1** provided on page 2-A, enter the acreage of each soil type from **Column B** in the **Column - I, J or K** - that corresponds to the LCC for that soil. (Note: While the Project Size Score is a component of the Site Assessment calculations, the score sheet is an extension of data collected in the Land Evaluation Worksheet, and is therefore displayed beside it).
(2) Sum **Column I** to determine the total amount of class I and II soils on the project site.
(3) Sum **Column J** to determine the total amount of class III soils on the project site.
(4) Sum **Column K** to determine the total amount of class IV and lower soils on the project site.
(5) Compare the total score for each LCC group in the Project Size Scoring Table below and determine which group receives the highest score.

Project Size Scoring Table

Class I or II		**Class III**		**Class IV or Lower**	
Acreage	Points	Acreage	Points	Acreage	Points
>80	100	>160	100	>320	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
10<	0	20-39	30	40<	0
		10-19	10		
		10<	0		

(6) Enter the **Project Size Score** (the highest score from the three LCC categories) in box <3> of the **Final LESA Score Sheet** on page 10-A.

NOTES

The portion of the project site within the city of Corona has access to the City potable water source and has an established irrigation system - however, it is currently turned off because of a broken meter. Option B

The county portion is not supplied any water. Option 14

Option 3 - city - 39.77 acres
Option 14 - County - 24.4 acres

Part 2. Water Resource Availability Score:

(1) Determine the type(s) of irrigation present on the project site, including a determination of whether there is dryland agricultural activity as well.

(2) Divide the site into portions according to the type or types of irrigation or dryland cropping that is available in each portion. Enter this information in **Column B** of **Site Assessment Worksheet 2. - Water Resources Availability**.

(3) Determine the proportion of the total site represented for each portion identified, and enter this information in **Column C**.

(4) Using the Water Resources Availability Scoring Table, identify the option that is most applicable for each portion, based upon the feasibility of irrigation in drought and non-drought years, and whether physical or economic restrictions are likely to exist. Enter the applicable Water Resource Availability Score into **Column D**.

(5) Multiply the Water Resource Availability Score for each portion by the proportion of the project area it represents to determine the weighted score for each portion in **Column E**.

(6) Sum the scores for all portions to determine the project's total Water Resources Availability Score

(7) Enter the Water Resource Availability Score in box <4> of the **Final LESA Score Sheet** on page 10-A.

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	city irrigated	.62	90	55.8
2	no irrigation	.38	0	0
3				
4				
5				
6				
		(Must Sum to 1.0)	***Total Water Resource Score***	55.8

Water Resource Availability Scoring Table

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

NOTES

ZOI : 1586.04 acres

Parcels :

275090008 - 5.923 acres

114040023
114040019 } 45.82 acres
114040020

114060004 - 20.758 acres

72.5 acres =

4.6%

Part 3. Surrounding Agricultural Land Use Score:

(1) Calculate the project's Zone of Influence (ZOI) as follows:
  (a) a rectangle is drawn around the project such that the rectangle is the smallest that can completely encompass the project area.
  (b) a second rectangle is then drawn which extends one quarter mile on all sides beyond the first rectangle.
  (c) The ZOI includes all parcels that are contained within or are intersected by the second rectangle, less the area of the project itself.
(2) Sum the area of all parcels to determine the total acreage of the ZOI.
(3) Determine which parcels are in agricultural use and sum the areas of these parcels
(4) Divide the area in agriculture found in step (3) by the total area of the ZOI found in step (2) to determine the percent of the ZOI that is in agricultural use.
(5) Determine the Surrounding Agricultural Land Score utilizing the Surrounding Agricultural Land Scoring Table below.

Surrounding Agricultural Land Scoring Table

Percent of ZOI in Agriculture	Surrounding Agricultural Land Score
90-100	100
80-89	95
70-79	90
65-69	85
60-64	80
55-59	70
50-54	60
45-49	50
40-44	40
35-39	30
30-34	20
20-29	10
<19	0

(5) Enter the Surrounding Agricultural Land Score in box <5> of the **Final LESA Score Sheet** on page 10-A.

Site Assessment Worksheet 3.

Surrounding Agricultural Land and Surrounding Protected Resource Land

A	B	C	D	E	F	G
Zone of Influence						
Total Acres	Acres in Agriculture	Acres of Protected Resource Land	Percent in Agriculture (A/B)	Percent Protected Resource Land (A/C)	Surrounding Agricultural Land Score (From Table)	Surrounding Protected Resource Land Score (From Table)
1586.04	72.5	1242.5	.046	.78	0	90

NOTES

201 = 1586.04

MSCP - 1195 acres

retention basins/
conservation easements - 47.54

1242.54 acres

= 78 %

Part 4. Protected Resource Lands Score:

The Protected Resource Lands scoring relies upon the same Zone of Influence information gathered in Part 3, and figures are entered in Site Assessment Worksheet 3, which combines the surrounding agricultural and protected lands calculations.

(1) Use the total area of the ZOI calculated in Part 3. for the Surrounding Agricultural Land Use score.
(2) Sum the area of those parcels within the ZOI that are protected resource lands, as defined in the California Agricultural LESA Guidelines.
(3) Divide the area that is determined to be protected in Step (2) by the total acreage of the ZOI to determine the percentage of the surrounding area that is under resource protection.
(4) Determine the Surrounding Protected Resource Land Score utilizing the Surrounding Protected Resource Land Scoring Table below.

Surrounding Protected Resource Land Scoring Table

Percent of ZOI Protected	Protected Resource Land Score
90-100	100
80-89	95
70-79	90
65-69	85
60-64	80
55-59	70
50-54	60
45-49	50
40-44	40
35-39	30
30-34	20
20-29	10
<20	0

(5) Enter the Protected Resource Land score in box <6> of the **Final LESA Score Sheet** on page 10-A.

LESA Worksheet (cont.)

NOTES

Final LESA Score Sheet

Calculation of the Final LESA Score:

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

	Factor Scores	Factor Weight	Weighted Factor Scores
LE Factors			
Land Capability Classification	<1> 11.68	0.25	2.92
Storie Index	<2> 12.16	0.25	3.04
LE Subtotal		***0.50***	5.96
SA Factors			
Project Size	<3> 20	0.15	3
Water Resource Availability	<4> 55.8	0.15	8.37
Surrounding Agricultural Land	<5> 0	0.15	0
Protected Resource Land	<6> 90	0.05	4.5
SA Subtotal		***0.50***	15.87
		Final LESA Score	21.83

For further information on the scoring thresholds under the California Agricultural LESA Model, consult Section 4 of the Instruction Manual.

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.

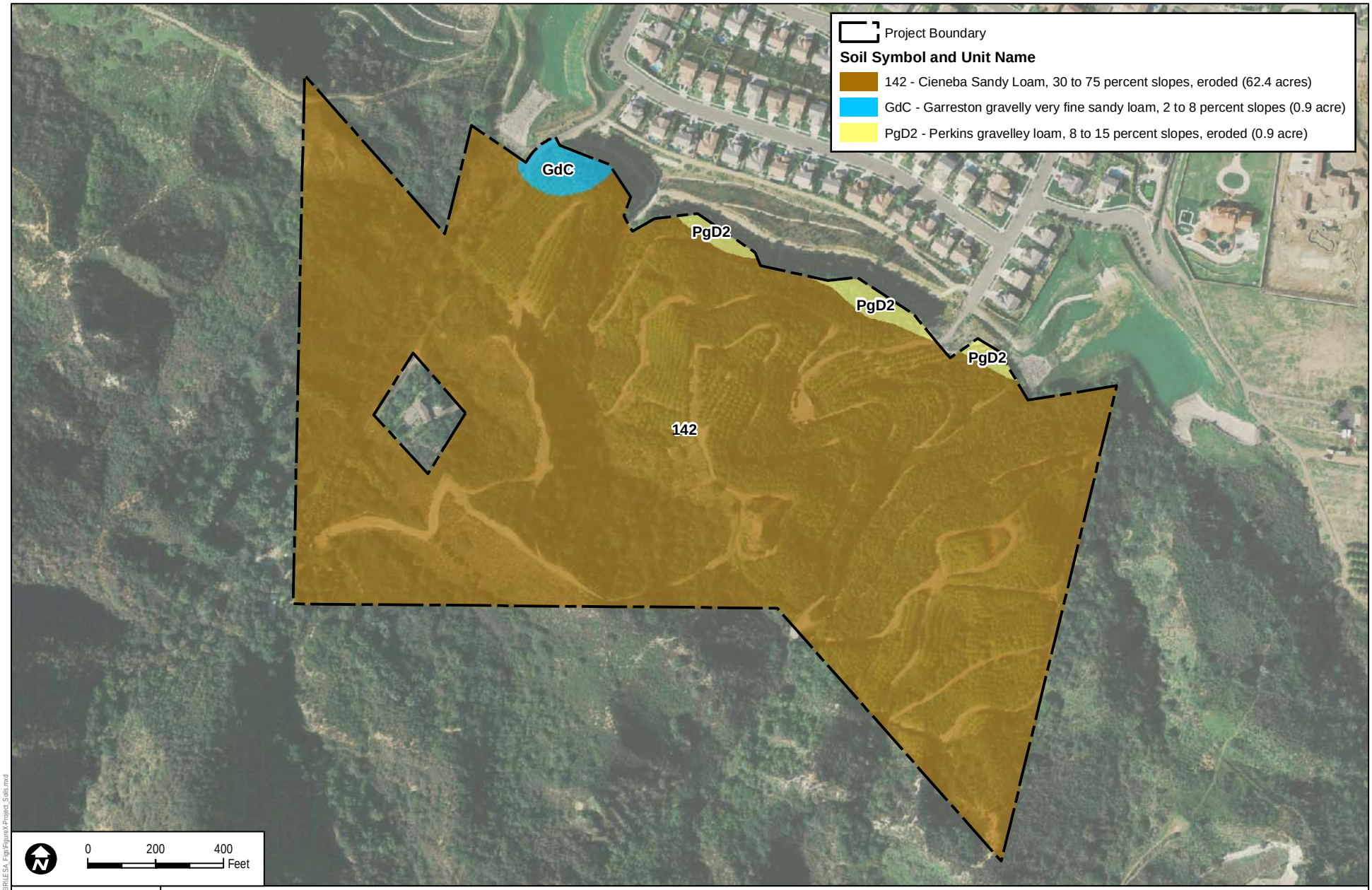
The California Agricultural LESA Model is designed to make determinations of the potential significance of a project's conversion of agricultural lands during the Initial Study phase of the CEQA review process. Scoring thresholds are based upon both the total LESA score as well as the component LE and 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

ATTACHMENT B

Figures 1–4b



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SOURCE: USDA 2010, Digitalglobe 2008

FIGURE 1

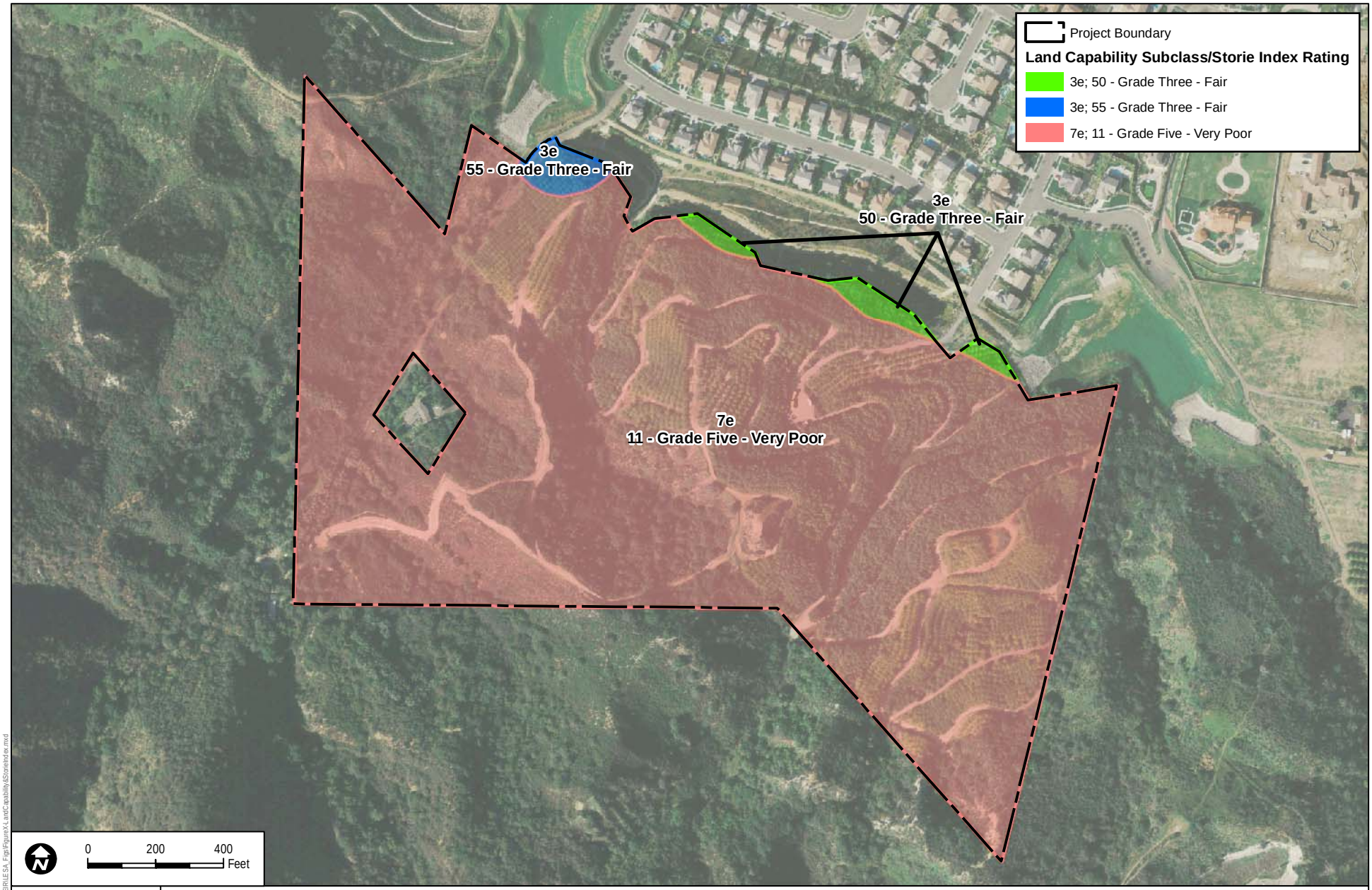
Soil Types

6327-01

AUGUST 2010

Rancho de Paseo Valencia Land Evaluation and Site Assessment (LESA) Model

Z:\Projects\6327000\MAPDOC\MAPS\EIR\LESA_Figs\Figure X Project_Soils.mxd



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SOURCE: USDA 2010, Digitalglobe 2008

FIGURE 2

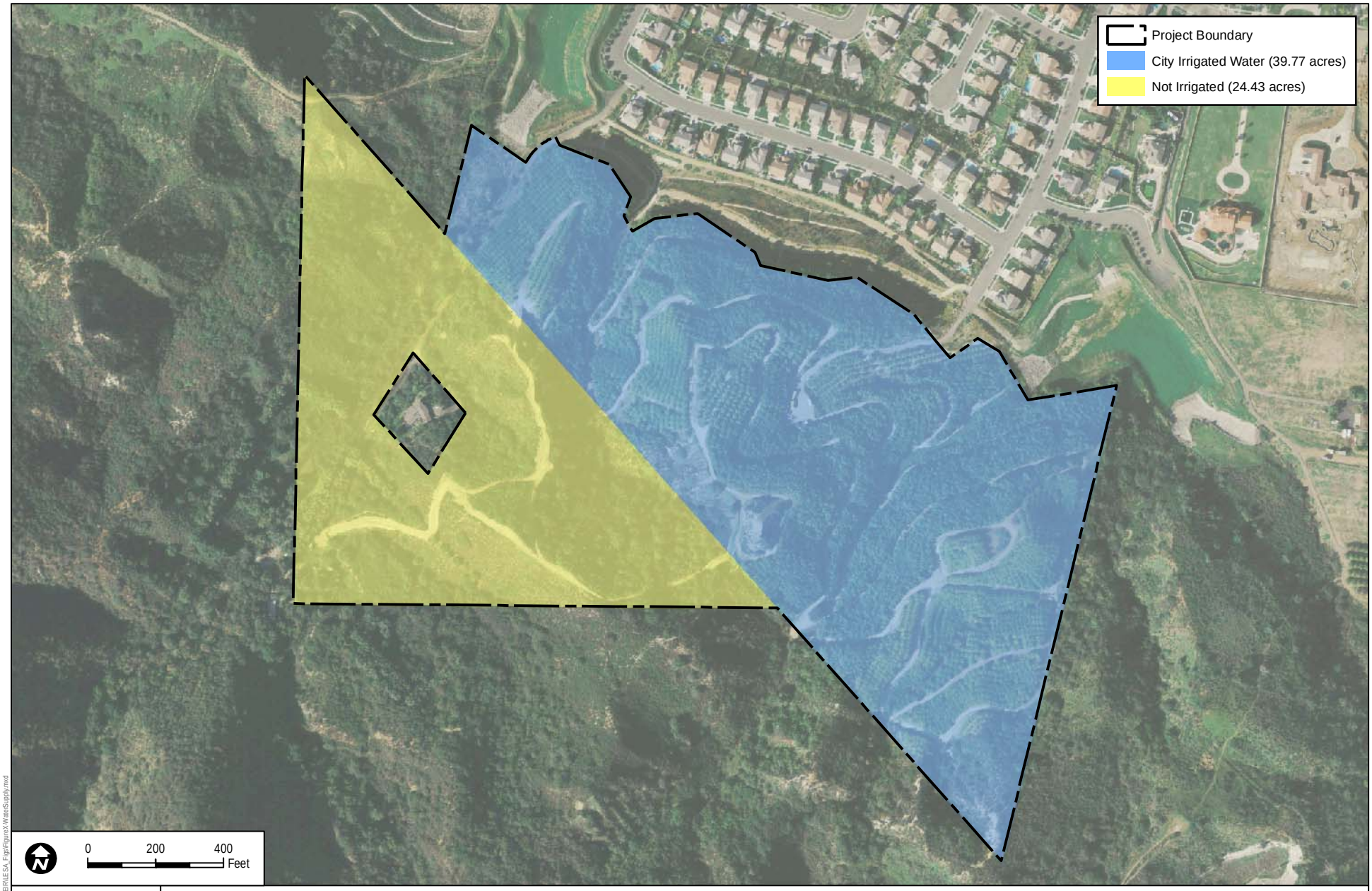
Land Capability and Storie Index

6327-01

AUGUST 2010

Rancho de Paseo Valencia Land Evaluation and Site Assessment (LESA) Model

Z:\Projects\6327\00\MAPDOC\MAPS\EIR\LESA_Figs\Figure X - Land Capability &Storie Index.mxd



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SOURCE: Digitalglobe 2008

FIGURE 3

Source of Water Supply

6327-01

AUGUST 2010

Rancho de Paseo Valencia Land Evaluation and Site Assessment (LESA) Model

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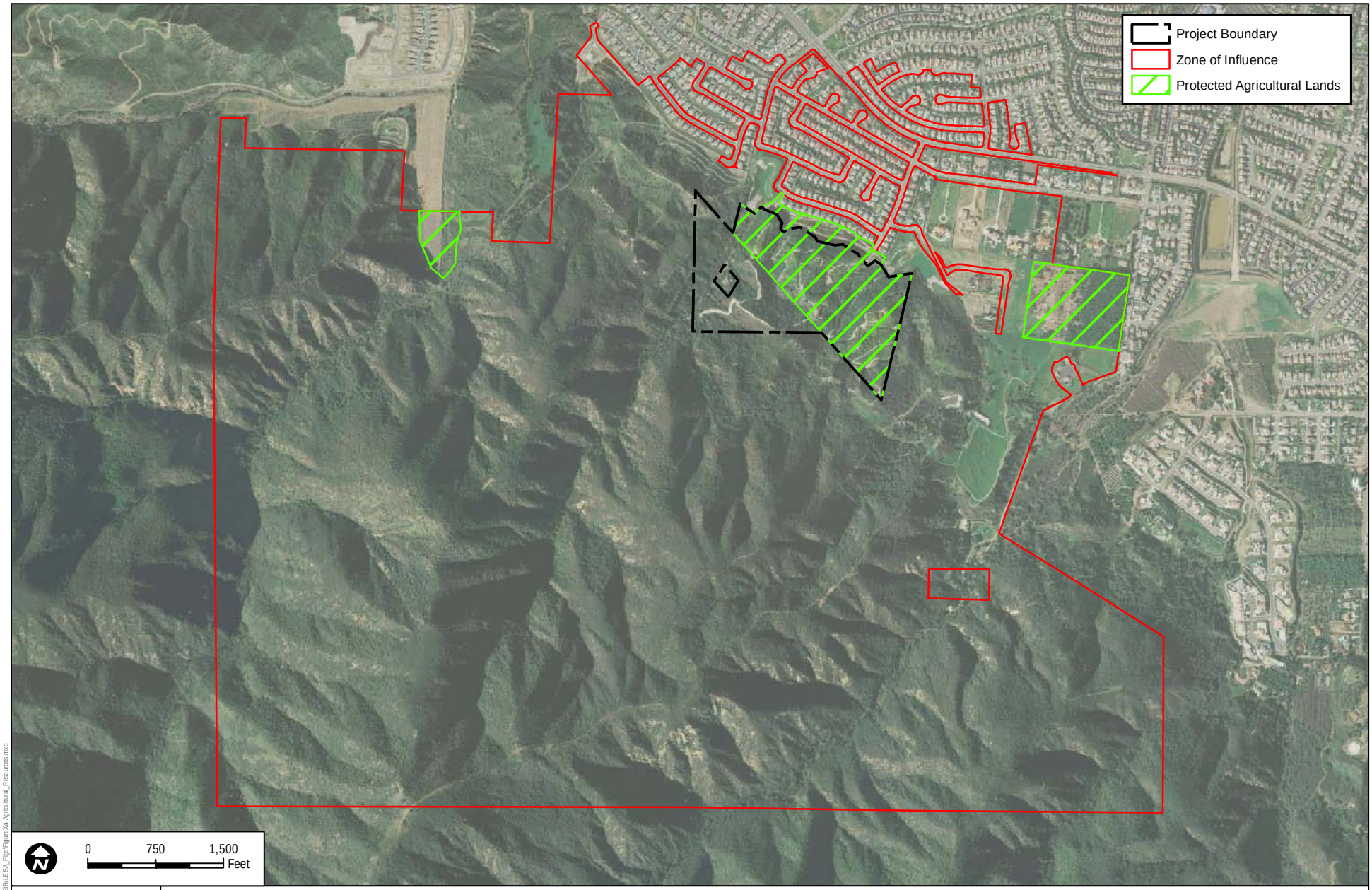

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SOURCE: Digitalglobe 2008

FIGURE 4a

Protected Agricultural Lands

6327-01

AUGUST 2010

Rancho de Paseo Valencia Land Evaluation and Site Assessment (LESA) Model

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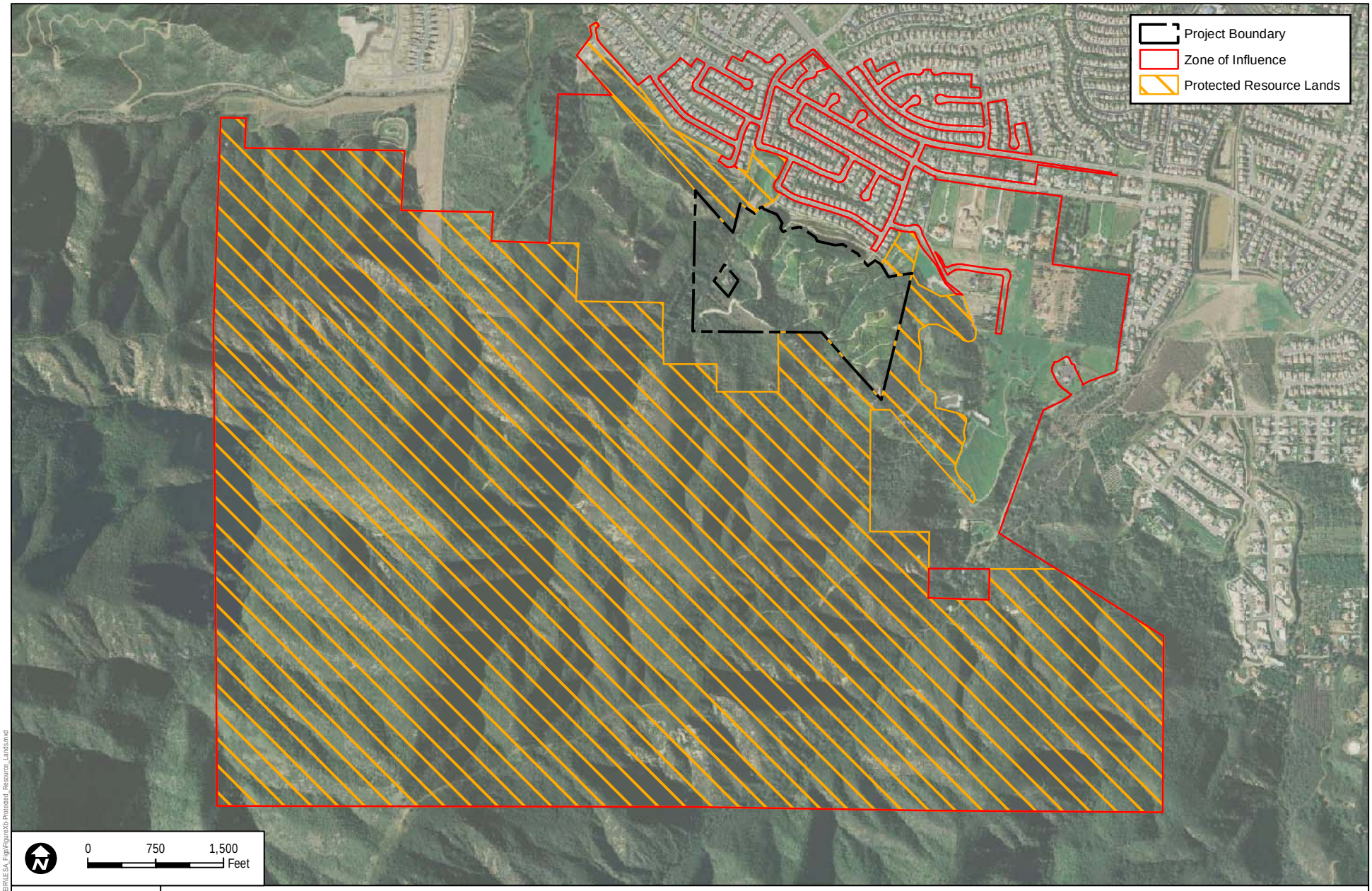

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SOURCE: Digitalglobe 2008

FIGURE 4b

Protected Resource Lands

6327-01

AUGUST 2010

Rancho de Paseo Valencia Land Evaluation and Site Assessment (LESA) Model

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ATTACHMENT C

Web Soil Survey Maps and Scores

Soil Map—Orange County and Part of Riverside County, California, and Western Riverside Area, California
(Rancho de Paseo Valencia)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

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
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

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

MAP INFORMATION

Map Scale: 1:6,140 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at scales ranging from 1:15,840 to 1:24,000.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 11N NAD83

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

Soil Survey Area: Orange County and Part of Riverside County, California
Survey Area Data: Version 5, Sep 10, 2008

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 5, Jan 3, 2008

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Date(s) aerial images were photographed: 6/7/2005

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

Orange County and Part of Riverside County, California (CA678)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
142	CIENEBA SANDY LOAM, 30 TO 75 PERCENT SLOPES, ERODED	26.4	40.5%
Subtotals for Soil Survey Area		**26.4**	**40.5%**
Totals for Area of Interest		**65.3**	**100.0%**

Western Riverside Area, California (CA679)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
142	Cieneba sandy loam, 30 to 75 percent slopes, eroded	37.0	56.7%
GdC	Garretson gravelly very fine sandy loam, 2 to 8 percent slopes	0.9	1.4%
PgD2	Perkins gravelly loam, 8 to 15 percent slopes, eroded	0.9	1.4%
Subtotals for Soil Survey Area		**38.9**	**59.5%**
Totals for Area of Interest		**65.3**	**100.0%**

* includes 1.1 acre Not-A-Part parcel which is removed for actual project site analysis. NAP parcel is Unit 142.

Land Capability Classification

The land capability classification of map units in the survey area is shown in this table. This classification shows, in a general way, the suitability of soils for most kinds of field crops (United States Department of Agriculture, Soil Conservation Service, 1961). Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

- Class 1 soils have slight limitations that restrict their use.
- Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.
- Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.
- Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.
- Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.
- Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.
- Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.
- Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion.

Report—Land Capability Classification

Land Capability Classification– Orange County and Part of Riverside County, California				
Map unit symbol and name	Pct. of map unit	Component name	Land Capability Subclass	
			Nonirrigated	Irrigated
142—CIENEBA SANDY LOAM, 30 TO 75 PERCENT SLOPES, ERODED				
	65	Cieneba	7e	—

Land Capability Classification– Western Riverside Area, California				
Map unit symbol and name	Pct. of map unit	Component name	Land Capability Subclass	
			Nonirrigated	Irrigated
142—Cieneba sandy loam, 30 to 75 percent slopes, eroded				
	65	Cieneba	7e	—
GdC—Garretson gravelly very fine sandy loam, 2 to 8 percent slopes				
	85	Garretson	3e	2e
PgD2—Perkins gravelly loam, 8 to 15 percent slopes, eroded				
	85	Perkins	3e	4e

Data Source Information

Soil Survey Area: Orange County and Part of Riverside County, California
Survey Area Data: Version 5, Sep 10, 2008

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 5, Jan 3, 2008

California Revised Storie Index Rating (CA)

The Storie Index is a soil rating based on soil properties that govern a soil's potential for cultivated agriculture in California.

The Storie Index asseses the productivity of a soil from the following four characteristics: Factor A, degree of soil profile development; factor B, texture of the surface layer; factor C, slope; and factor X, manageable features, including drainage, microrelief, fertility, acidity, erosion, and salt content. A score ranging from 0 to 100 percent is determined for each factor, and the scores are mukltiplied together to derive an index rating.

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

Report—California Revised Storie Index Rating (CA)

The Storie Index is a soil rating based on soil properties that govern a soil map unit component's potential for cultivated agriculture. [Absence of an entry indicates that a Storie Index rating is not applicable or was not estimated]. For simplification, Storie Index ratings have been combined into six grades as follows: Grade 1 (Excellent): Soils that rate between 80 and 100 and which are suitable for a wide range of crops. Grade 2 (Good) Soils that rate between 60 and 79 and which are suitable for a wide range of crops. Grade 3 (Fair): Soils that range between 40 and 59. Soils in this grade may give good results with certain specialized crops. Grade 4 (Poor): Soils that rate between 20 and 39 and which have a narrow range in their agricultural potential. Grade 5 (Very Poor): Soil that rate between 10 and 19 and are of very limited agricultural use except for pasture because of adverse soil conditions. Grade 6 (Nonagricultural): Soils that rate less than 10. [The numbers in the "Limiting feature value" column range from 0.01 to 1.00. Soils with a smaller the value have a lower potential for cultivated agriculture. The table shows each of the sub-factors used to generate the Storie Index rating for each soil component].

California Revised Storie Index Rating (CA)– Orange County and Part of Riverside County, California				
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)		
		Storie index rating	Storie index grade and limiting features	Limiting feature value
142—CIENEBA SANDY LOAM, 30 TO 75 PERCENT SLOPES, ERODED				
Cieneba	65	11	Grade Five - Very Poor	
			Toxicity	1.00
			Rated Soil Order	1.00
			USDA Texture	0.93
			Wetness, flooding, ponding, drainage, erosion	0.85
			Very steep	0.44

California Revised Storie Index Rating (CA)– Western Riverside Area, California				
Map symbol and soil name	Pct. of map unit	California Revised Storie Index (CA)		
		Storie index rating	Storie index grade and limiting features	Limiting feature value
142—Cieneba sandy loam, 30 to 75 percent slopes, eroded				
Cieneba	65	11	Grade Five - Very Poor	
			Toxicity	1.00
			Rated Soil Order	1.00
			USDA Texture	0.93
			Wetness, flooding, ponding, drainage, erosion	0.85
			Very steep	0.44
GdC—Garretson gravelly very fine sandy loam, 2 to 8 percent slopes				
Garretson	85	55	Grade Three - Fair	
			Toxicity	1.00
			Rated Soil Order	1.00
			Profile Group	1.00
			Wetness, flooding, ponding, drainage, erosion	1.00
			Undulating to moderately sloping	0.93
PgD2—Perkins gravelly loam, 8 to 15 percent slopes, eroded				
Perkins	85	50	Grade Three - Fair	
			Toxicity	1.00
			Rated Soil Order	1.00
			Profile Group	1.00
			Wetness, flooding, ponding, drainage, erosion	1.00
			Rolling to strongly sloping	0.87

Data Source Information

Soil Survey Area: Orange County and Part of Riverside County, California
Survey Area Data: Version 5, Sep 10, 2008

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 5, Jan 3, 2008