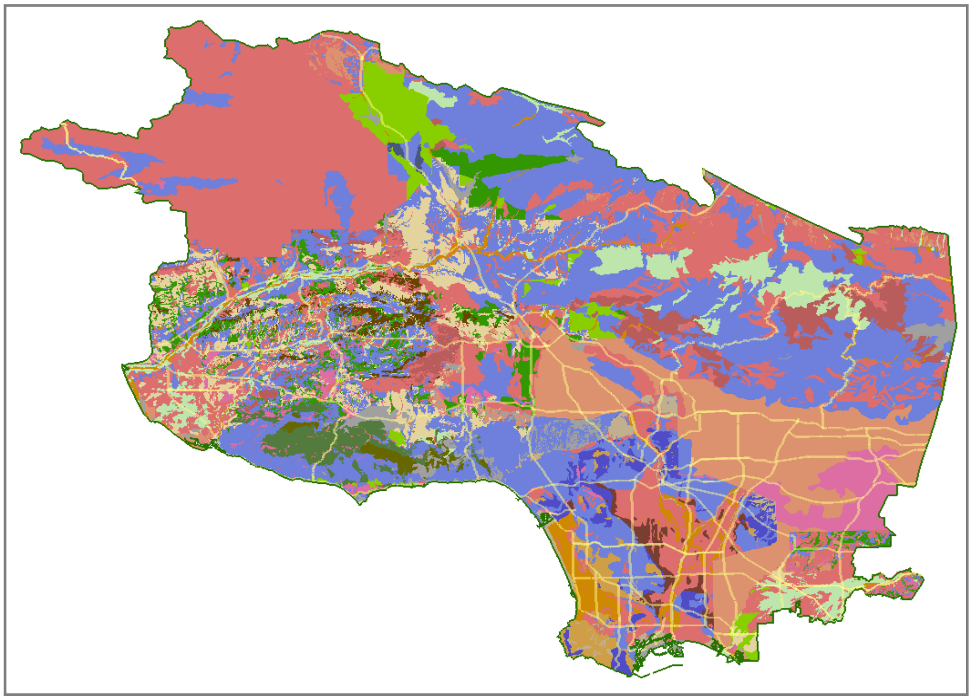
A Digital Soil Map for the Green Visions Plan for the 21st Century Southern California Study Area



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Generalized soil texture map of Green Visions Plan study area, 2007 (S. Lam)

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Purpose

The purpose of this soil mapping project is to generate a detailed digital soil map for the Green Visions Plan study area (Green Visions, 2007). This project is part of the Green Visions Plan for 21st Century Southern California project currently being implemented by the University of Southern California (USC) GIS Research Laboratory (http://uscgislab.net/incEngine/) and the USC Center for Sustainable Cities (http://www.usc.edu/dept/geography/ESPE/). This comprehensive map displays the distribution of known soil types across the Green Visions study area, at the time the original data was compiled. Detailed soil horizon information is also included for the soil series that make up approximately 94% of the map units within the study area. Information pertaining to the chemical, physical and engineering properties is also available in table format for about 95% of the soil series.

Background

This report depicts the processes involved in creating a comprehensive digital soil map for the Green Visions Plan for 21st Century Southern California study area. The datasets used to construct the soil map were originally collected by the United States Department of Agriculture (USDA).

General Approach

The Green Visions soil database was created by compiling soil information from several sources using ESRI's ArcGIS software (ESRI, 2007). The original data sources included the USDA Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database (NRCS, 2006 and 2007a), a USDA historical soil map of Los Angeles (Nelson, et al., 1919), and the USDA-NRCS California State Soil Geographic (STATSGO, previously referred to as the U.S. General Soil map) database (NRCS, 2007b) (Figure 1). The original data vary in map scale, format (paper and digital), and geographic coverage, as well as in regards to the time periods over which each source was produced. The resulting digital layer consists of a detailed soil map depicting the spatial distribution of known soil map units in the Green Visions Plan study area, as of January 2007, when the original datasets were obtained. Separate tables containing detailed soil horizon information as well as physical, chemical and engineering properties for each soil horizon of the map components (soil series) have also been compiled (USDA, 2005). The SSURGO dataset is considered the primary data source, providing the most current soil information for Los Angeles County. Where SSURGO soil surveys are lacking, information from the historical USDA soil map and finally the lower resolution STATSGO data were used to fill the gaps in the new comprehensive soil layer (i.e. Bliss and Reybold, 1989 and Reybold and TeSelle, 1989). Detailed metadata has also been generated for this comprehensive soil layer.

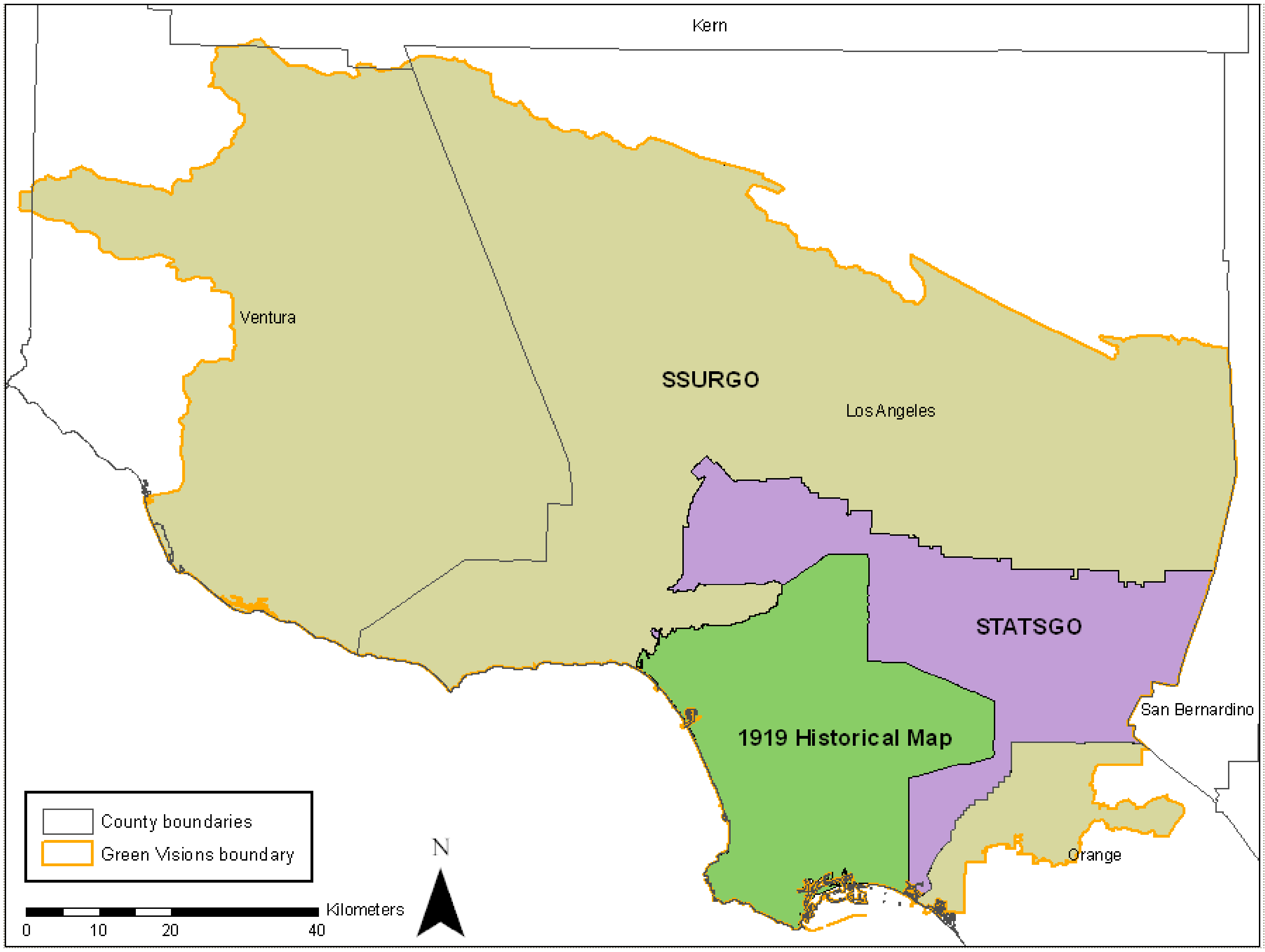


Figure 1: The spatial extent of the primary sources of information used to compile the new soil map, including NRCS SSURGO and STATSGO soil survey data, and a USDA historical soil survey map of the Los Angeles area.

Data Sources

Natural Resources Conservation Service: SSURGO and STATSGO

The Soil Survey Geographic (SSURGO) data offers the most current and detailed soil information available for the Green Visions study area (NRCS, 2007a). The SSURGO and STATSGO seamless soil datasets are currently under development by the National Cooperative Soil Survey (NCSS) and published by the USDA-NCRS (NRCS, 2006 and 2007a; USDA, 1995). The SSURGO dataset is developed by digitizing maps, collecting and compiling soil information into planimetric maps and then digitizing, or by obtaining recent remotely sensed imagery and other information to revise preexisting digitized maps. The STATSGO dataset consists of data generalized from detailed soil maps, and covers the entire United States (NRCS, 2006). The STATSGO dataset is produced by using a combination of detailed soil maps and geological, topographical, vegetation, climate data and Land Remote Sensing Satellite (LANDSAT) images in areas where soil information is not available. The SSURGO and STATGSO map units include 1-3 and 1-21 soil series, respectively. The map unit is the smallest spatial delineation in the STATSGO and SSURGO data, based on similar land use and management practices. A combination of transects and field sampling was used to see which soil map components (i.e. soil series) are present within map units.

SSURGO and STATSGO soil data are freely available to the public, and can be downloaded in Microsoft Access format through the SSURGO Soil Data Mart (NRCS, 2007c). For the purpose of this study the SSURGO soil data were downloaded from the Soil Data Mart according to the 10 soil survey areas (CA671, CA674, CA675, CA676, CA677, CA678, CA692, CA772, CA776, and CA777) which fall within the Green Visions study area (Figure 2).

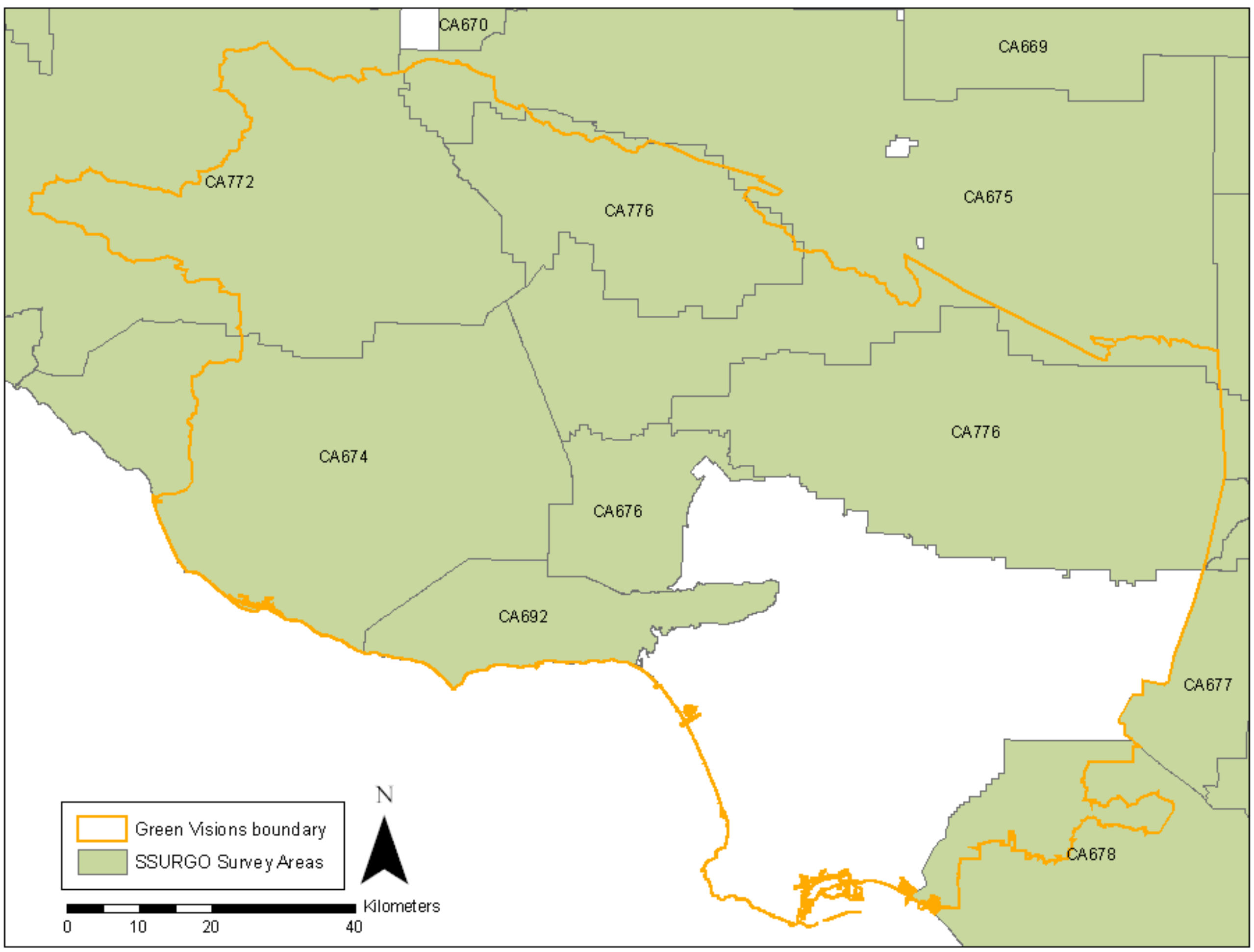


Figure 2: The SSURGO soil survey areas within the Green Visions Plan study area.

The most recent STATSGO dataset was also obtained from the Soil Data Mart website (2002, Version 33, Figure 3). Because STATSGO data consists of a more generalized inventory of soil data and lacks the level of detail of the SSURGO dataset, it is only used to fill spatial gaps after both the SSURGO and the historical soil map layers were combined (see Figure 1).

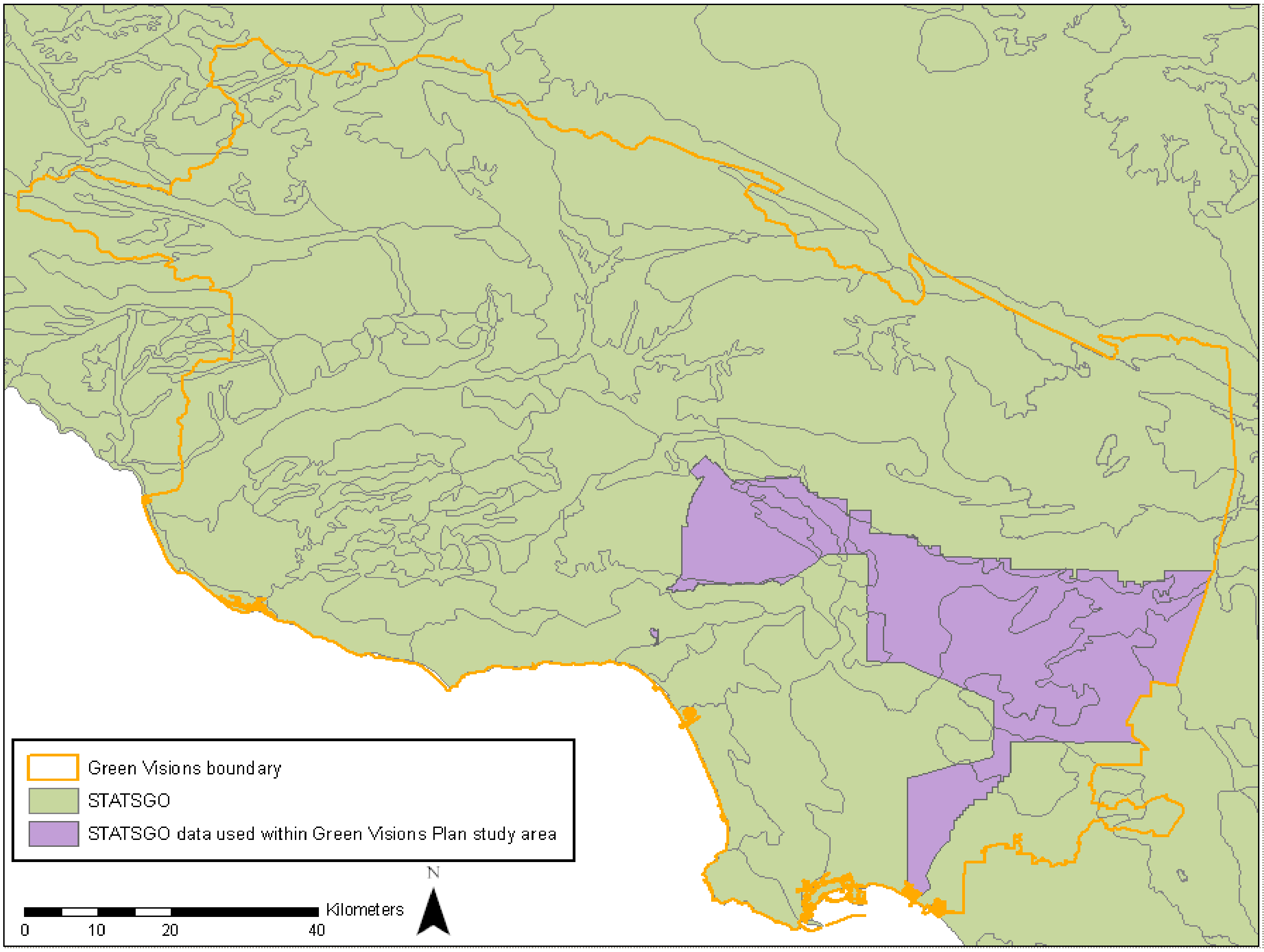
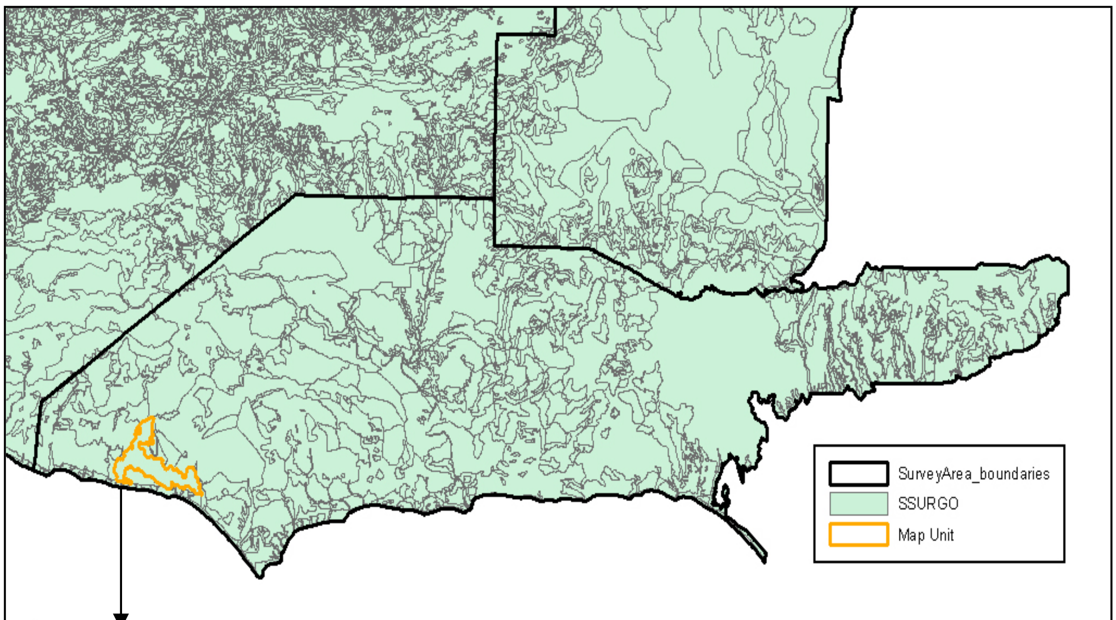


Figure 3: The spatial gaps in SSURGO soil surveys filled with STASTGO soil data.

The original SSURGO and STATSGO data are organized in separate spatial and tabular folders. Depending on what was requested as part of the download, the spatial folder contains the soil survey map in vector polygon shapefile, coverage or interchange (ESRI, 2007) formats, and an empty Microsoft Access SSURGO template database (NRCS, 2007a and b). Spatial data always includes survey area and map unit boundary polygons, but all other feature classes are optional. The tabular data consists of a set of ASCII delimited files which provides additional data which can be imported into the MS Access SSURGO template database, such as soil horizon information.

Though SSURGO data ranges in scale from 1:12,000 to 1:24,000, the Green Visions Plan study area soil surveys are all 1:24,000. The STATSGO data for Los Angeles County like elsewhere) is available at a scale of 1:250,000. The smallest delineation in the SSURGO spatial layer is called a map unit, and each map unit has between one and three major soil series (i.e. components) listed in a text report (Figure 4; USDA, 1995). Map units can range from a few acres to thousands of acres in size. Though map component boundaries are not represented in the spatial shapefile, detailed information regarding map unit components (tabular) can be associated to the map unit spatial data (polygons). Each soil component in the Green Visions Plan study area may consist of up to six soil horizons, and each soil horizon has individual soil chemical, physical and engineering properties. Detailed soil horizon information for each map unit component exists for approximately 94% of the soil series that comprise the map units within the study area. Information pertaining to the chemical, physical and engineering properties is also available for about 95% of the soil series.



Engineering Properties

Santa Monica Mountains National Recreation Area

[Absence of an entry indicates that the data were not estimated. This report shows only the major soils in each map unit]

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
100:												
Chumash	0-7	Gravelly loam	SC	A-4	0	0	61-78	57-76	46-73	32-55	25-40	7-19
	7-17	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
Boades	0-2	Loam	CL	A-6	0	0	85-92	84-91	71-86	52-65	33-45	12-19
	2-14	Clay loam, gravelly loam, loam	CL	A-2, A-6	0	0	61-85	57-84	46-82	34-64	31-51	12-25
	14-24	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
Malibu	0-19	Loam	CL	A-6	0	0	78-85	76-84	65-79	48-60	33-45	12-19
	19-27	Clay	CH	A-7-6	0	0	84-100	83-100	70-100	60-87	50-66	29-40
	27-37	Weathered bedrock	---	---	0	0	---	---	---	---	---	---

Figure 4: Sample soil map unit with an excerpt from the Soil Data Viewer Engineering Report (NRCS, 2007c) showing the major soil series that comprise that particular map unit (USDA, 2005).

1919 Soil Survey

Due to the current urbanized state of the City of Los Angeles, it was extremely difficult to obtain current, detailed near-surface soil information to fill the gaps in the available SSURGO soil data within the Green Visions Plan study area. The most viable option for this project was to use available historical data, such as a USDA 1919 historical soil survey map (Figure 5; Nelson et al., 1919). A detailed survey document accompanying the 1919 historical map elaborates the types of soils in the LA City area. In order to create a digital version of the 1919 historical soil map, the USC Libraries Imaging Lab mounted the original 1919 paper map on a large vacuum table and digitized it using a Betterlight Super 8K-HS digital scan-back attached to a Sinar 4"x5" camera. The scanned image was georeferenced and a new vector polygon layer was manually digitized using ArcGIS, at a scale of approximately 1:62,500 (Figure 6). Basic soil descriptions were added to the layer as attributes. In general, the descriptions of individual soil series on the historical soil map are less detailed than the map unit descriptions in the SSURGO and STATSGO datasets. Although some historical soil series can be roughly correlated to SSURGO and STATSGO map units by matching map unit names (Table 1), this information is not included in the final soil layer attribute table. These associations are limited as well as highly subjective since they have not been validated by communication with surveyors or confirmed by field observation.

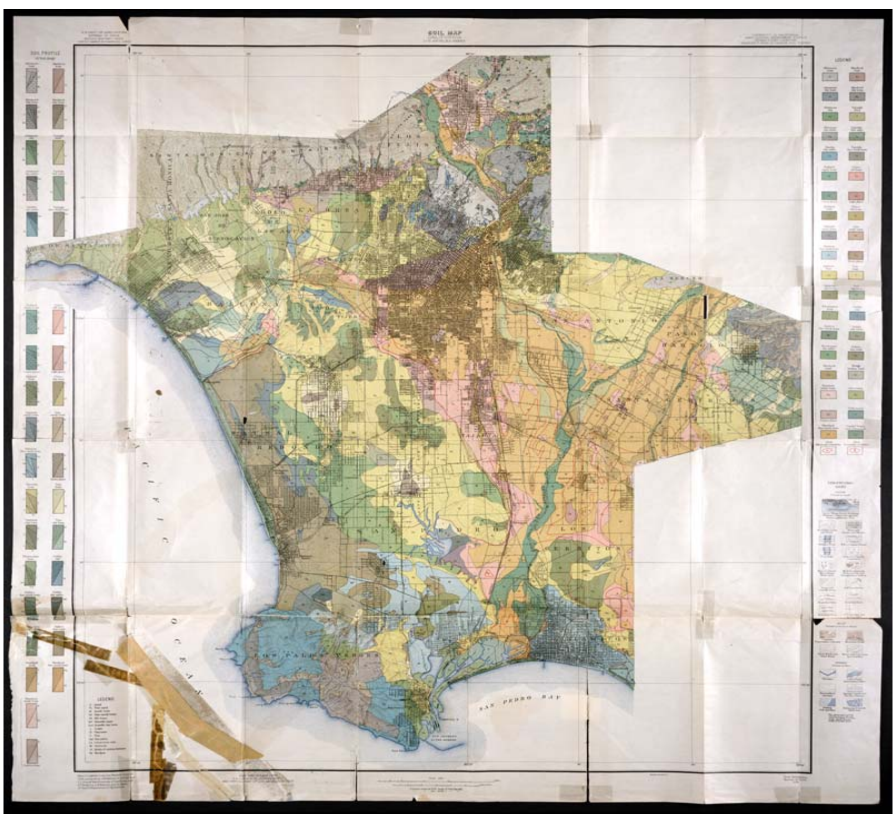


Figure 5: Scanned image of the original USDA 1919 soil map of the Los Angeles area, scale 1:62,500 (Nelson et al, 1919).

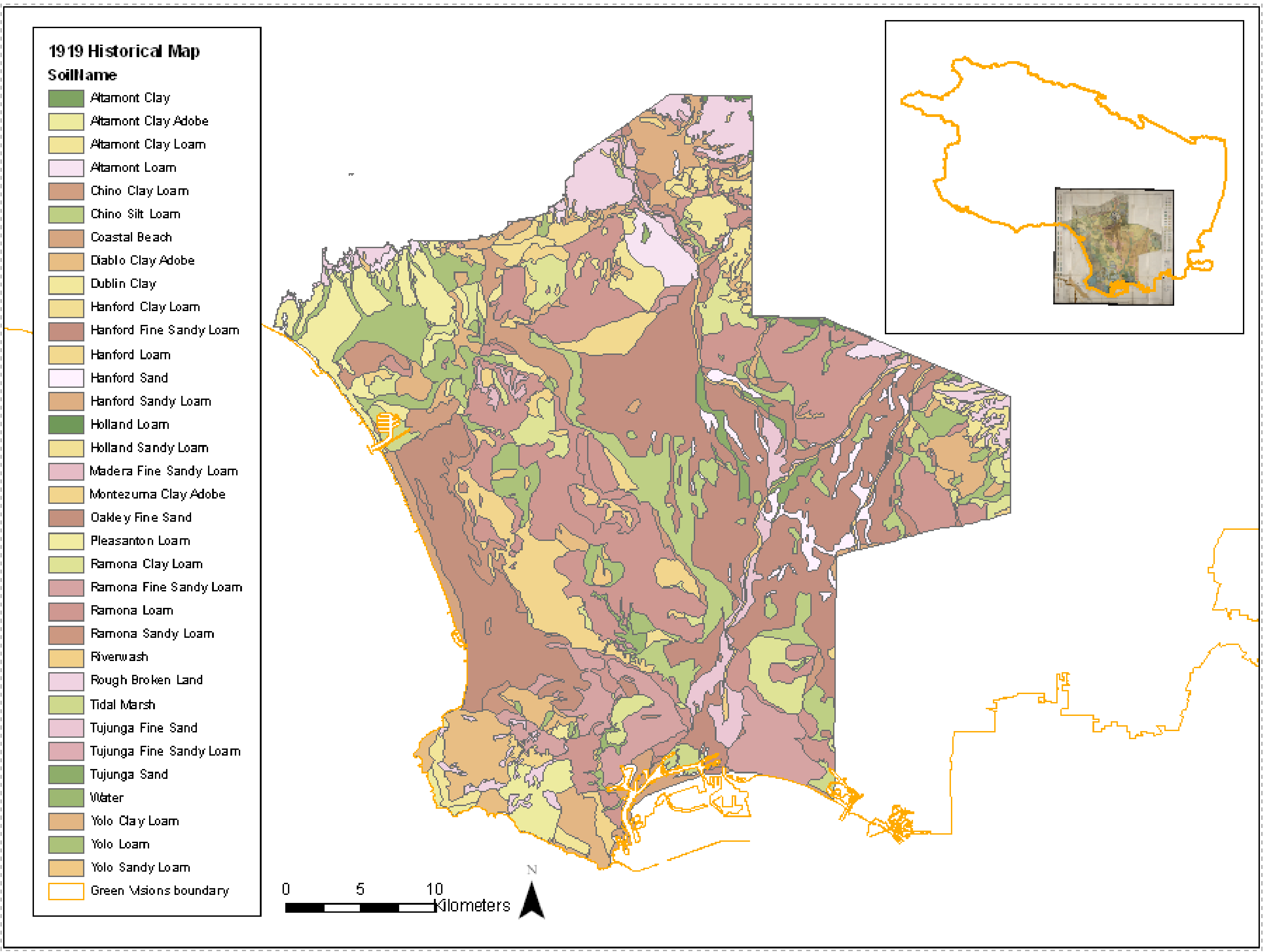


Figure 6: Manually digitized vector polygon representation of the 1919 USDA historical soil map of the Los Angeles area, upper right inset (Nelson et al, 1919).

Recent Deposits

After merging the SSURGO, STATSGO and historical soil spatial datasets (Figure 7), gaps still occurred along several stretches of coast within the Green Visions Plan study area (Figure 8). Overlaying this layer on top of the California State Geological Survey's geologic map of California, it is clear that these areas consist primarily of Quaternary to Recent deposits (Saucedo et. al., 2000), dominated by manmade fill. Based on examination using Google Earth (http://earth.google.com/intl/en), areas that have been artificially filled and built up since the 1919 and NRCS soil surveys were conducted are apparent. The three datasets utilized in this study were compiled over different time periods at different map scales, thus offer different levels of detail in terms of resolution of coastal features such as shipping ports and other man-made structures. For the purpose of this study, the Green Visions Plan study area boundary was used as the control layer, to guide where areas of artificial fill should be added to the new soil layer.

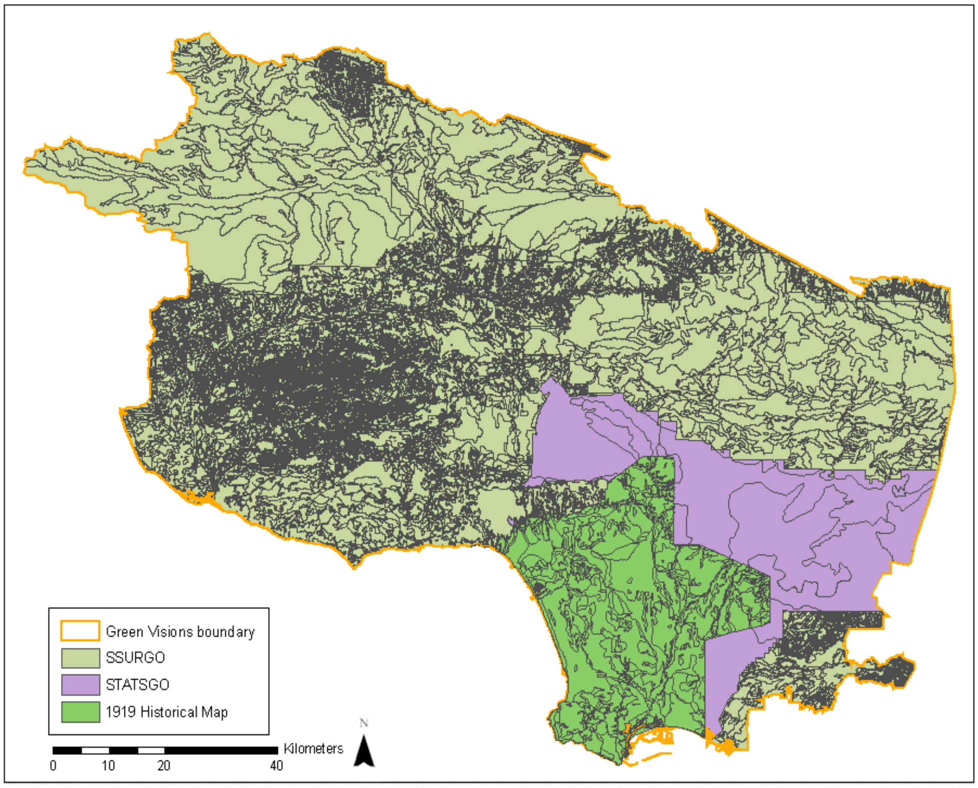


Figure 7: Spatial extent of SSURGO, STATSGO and 1919 historical maps within Green Visions Plan study area.

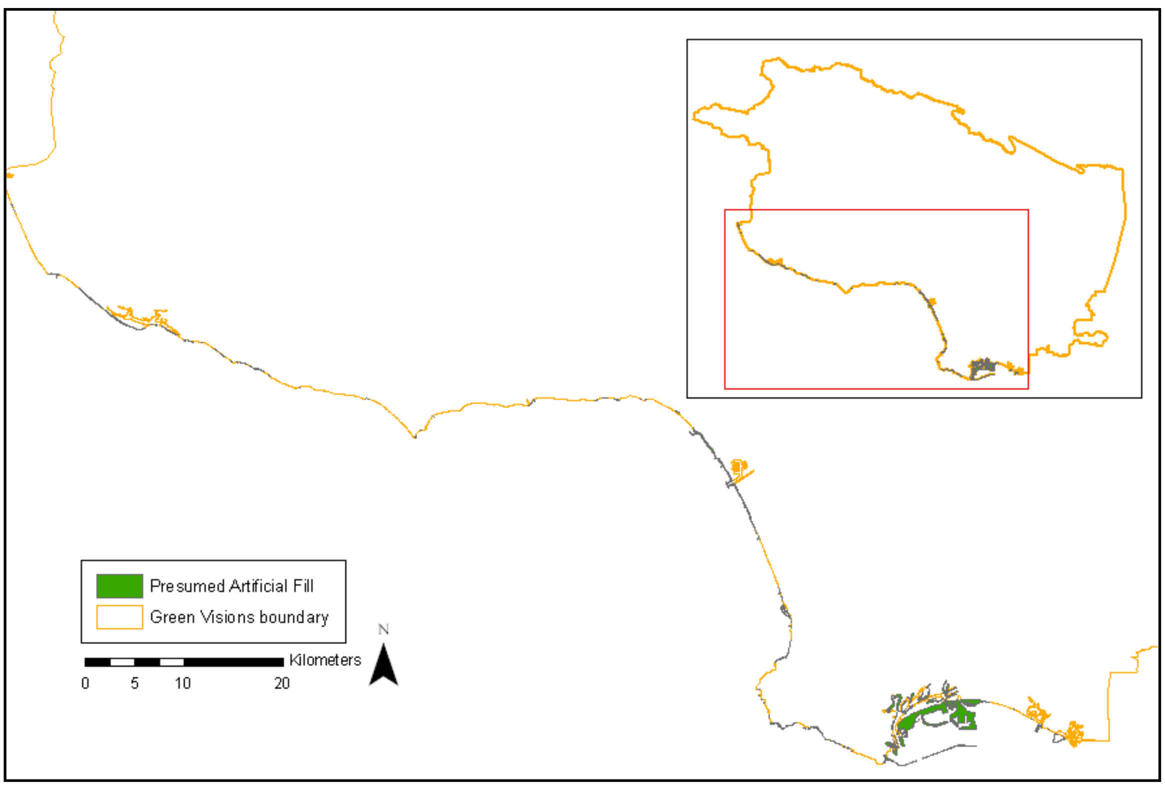


Figure 8: Areas assumed to be primarily composed of manmade fill and Quaternary deposits along the coastline of Green Visions Plan study area.

Map Compilation

Soil Map

The process used to generate the new soil layer by combining the four datasets, SSURGO, STATSGO, the historical soil map, and the artificial fill layer, is presented in detail in the following steps.

1. The USDA-NRCS Soil Data Viewer (v. 5.0, NRCS, 2007c) was utilized to view SSURGO and STATSGO data for southern California and generate thematic soil property maps for the Green Visions Plan study area. The Soil Data Viewer can be used as a standalone program to generate textual reports without graphics, or it can be utilized as an ESRI ArcMap 9.1 extension (ESRI, 2007). For the purpose of this study the data viewer was enabled in ArcMap 9.1.

2. The Soil Data Viewer typically allows a user to view one SSURGO soil survey area at a time. The Green Visions Plan study area overlaps 10 different soil survey areas (Figure 2). In order to visualize all of the soil data within the Green Visions Plan area in one map view, pre-processing of both the spatial and tabular soil survey data was required (NRCS, 2005; USDA, 1995). First, the tabular data corresponding to the study area was imported into an MS SSURGO template database downloaded from the Soil Data Mart (NRCS, 2007b). A data import form is automatically launched when the template is first opened. The pathnames of the 10 soil tabular datasets were entered and the data for all 10 surveys were imported into one template database. Second, the spatial layers (shapefiles) for the 10 soil survey areas were merged together into one shapefile using ArcMap. Third, the Soil Data Viewer extension was launched in ArcMap, and the aforementioned template database was selected in order to load the tabular data corresponding to the 10 Green Visions soil survey areas. And lastly, the merged spatial layer was clipped using the Green Visions Plan study area boundary. This last step significantly reduced the size of the shapefile and improved ArcMap processing time. The merged and clipped soil layer then served as the control layer when running the Soil Data Viewer application.

3. Next, a new SSURGO soil map "unit name" thematic map was generated using the Soil Data Viewer. It is important to note that any shapefiles created through the Soil Data Viewer had to be manually saved to permanent media, since Soil Data Viewer thematic maps are generated on-the-fly and are thus temporary. The temporary thematic map shapefiles and their corresponding tabular data (TXT files) are stored as separate entities and can be found in the windows temp folder (the exact location can be found in the shapefile properties, see source tab). The spatial and tabular datasets contain a unique number, MUKEY, which can be used to identify each and every map unit. This is the primary key used by the Soil Data Viewer to join or relate the tabular records to the spatial data features. Using ArcMap, the data from the

temporary map unit name tables (TXT) were joined to the attribute table for the temporary shapefile, and the joined dataset was copied to a new permanent shapefile. A thematic soil map “unit name” layer was generated for the STATSGO dataset using the same procedure.

4. The next step was to compare the coverage of the newly compiled SSURGO layer with the STATSGO and 1919 USDA historical soil layers. In ArcMap, the Symmetrical Difference tool was used to determine areas of overlap between the three datasets. The SSURGO dataset was considered the primary dataset, the 1919 historical map was treated as secondary, and the STATSGO dataset third, in terms of filling gaps in the SSURGO spatial coverage. A preliminary merge of the three datasets was performed, and the Symmetrical Difference tool was used again between the newly merged layer and the Green Visions Plan boundary layer. This process identified areas along the coastline within the Green Visions boundary that did not contain any form of soil information. Upon inspection of these areas using Google Earth, it was determined that these areas were locations of recent development along the coast and could be designated as artificial fill. Thus a fourth polygon layer was created consisting of polygons representing areas of artificial fill.

5. In order to ensure that each polygon in the SSURGO, STATSGO, historical map and fill layers contained a corresponding record in their attribute tables, the Singlepart to Multipart tool was used on each layer. The total number of records for the SSURGO dataset is 12,892, for STATSGO it is 55, for the historical map it is 658, and for the artificial fill layer it is 233.

6. The next requirement was to eliminate polygon overlaps, gaps, and sliver polygons existing within and between the four datasets. The layers were converted to ESRI coverages and the Clean tool was utilized. For the SSURGO dataset, every polygon with an area of less than 200 m^2 was manually examined and compared to the original map shapefile to ensure quality control. For the 1919 soil layer, every polygon with an area less than 50 m^2 was also examined and compared to the original historical map shapefile. Duplicate polygons were deleted and any remaining overlapping or disconnected vertices were snapped together manually. The SSURGO and historical map coverages were exported back into shapefile format, and the tabular data rejoined to the cleaned polygons using the Union tool. The Dissolve tool was then used to collapse the datasets by unit name. Attribute names were corrected using Microsoft Access, re-joined to the cleaned shapefiles, and thus the complete, cleaned datasets were copied as new layers.

7. Finally, the cleaned SSURGO, historical map, STATSGO and artificial fill layers were merged together, bringing the total number of noncontiguous polygons in the final shapefile to 13,838. A second version of this layer was also generated using the Dissolve tool to collapse the records by unit name for the historical and fill layers, and

by foreign key for the SSURGO and STATSGO layers. The foreign key used was MUKEY, an integer assigned to each soil map unit in the original NRCS spatial datasets. This resulted in a contiguous polygon layer with one record per soil unit name, and a total of 699 records.

Soil Horizon Database

The process of compiling the available soil horizon information for the Green Visions Plan study area SSURGO dataset is provided in detail below.

1. All the tabular data for SSURGO and STATSGO were imported into a new database in MS Access. The SSURGO and STATSGO soil survey area soil map units of relevance were selected to generate reports. The five reports of most relevance to our work were the Brief, Physical, Chemical, Engineering and Component Legend reports that contained information for each individual soil horizon. The Soil Data Viewer (MS Access template Reports) provides one report per soil survey area, thus a total of forty reports were used to compile this dataset. However, it is recommended that the Wind Erosion Prediction System (WEPS) report also be used, as it provides clay/silt/sand fractions in integer percentages, whereas the Physical Soil Report gives only a percentage range. Because these reports are presented in a PDF format, it was necessary to manually transcribe all of the information into an Excel spreadsheet. Attempts to directly export the information into a spreadsheet format proved unsuccessful, resulting in misaligned or missing information.

2. After Soil Horizon databases had been compiled for each of the soil survey areas, a foreign key was assigned to each map unit in order to join the data to layers using ArcMap. The MUKEYs were manually matched to map unit names in the soil horizons database in order to join the data in the soil horizons database to the original soil layer attribute table created by the Soil Data Viewer. It should be noted that each soil survey area assigns a unique MUKEY to each soil unit within a survey area, presumably per surveyor; for instance, in some cases identical coincident soil units are split into multiple polygons by survey boundaries, resulting in more than one MUKEY polygon for a single soil unit in the resultant soil horizon database. These original MUKEYs are preserved in the final dataset, to provide a direct reference to the NRCS datasets.

3. The final compiled soil horizon table for the Green Visions Plan study area was saved in a new MS Access database. All the fields within the table are formatted as text/string, as most fields contain alphanumeric values. It should be noted that initially there were more records in the soil horizon table than in the corresponding shapefile attribute table, for several reasons: (a) the Soil Data Viewer reports provide information for multiple components per map unit, through the individual components are not represented in the spatial dataset; and (b) the original SSURGO spatial

data was previously clipped using the Green Visions Plan study area boundary, hence any soil map units that did not fall within the Green Visions Plan study area were excluded from the final map layer. After deleting soil horizon data that was not associated with the Green Visions Plan study area soil map units, the total number of soil horizon records in the combined STATSGO and SSURGO dataset is 1,191.

4. Thus, using a GIS such as ArcMap, the soil horizon table may be related to the soil map shapefile in a one-to-many basis using the common foreign key (MUKEY).

Since there are a total of 570 different soil map units in the final map layer, for practical purposes such as generating a printable map, the soil map units were collapsed according to formation, as shown in Table 2. The summarized soil map for the Green Visions Plan study area is shown in Figure 9. In addition, the soil map unit layer was also summarized based on soil texture, as described in Table 3. The final soil texture map for the Green Visions Plan study area is provided in Figure 10.

Visualization of Soil Horizons

The compiled soil horizon table was related to the soil map shapefile. In order to generate a 3D soil model of the Green Visions Plan study area using the common MUKEY. Thus the relationship between the spatial data and the tabular data is one-to-many. The process for creating a 3D model from the summarized soil map (Figure 9) is outlined in the following steps:

1. The dominant soil series within each map unit was utilized to construct the 3D model using ESRI ArcScene, since a one-to-one relationship between the summarized soil map and the soil horizon table was required. The Soil Data Viewer Component Legend report for each soil survey area defines which soil series in each map unit (see Figure 4) represents the dominant component. The dominant map component is determined by the percentage of space each component takes up within a map unit. In cases where two map components share an equal percentage of dominance, the first or topmost component was chosen to represent the entire map unit. Please note one exception for map unit 168 in survey area CA671, where the second most dominant map component was selected since the dominant component had no soil series attribute information available.

2. The newly shortened soil horizon table was then joined to the soil map unit layers using MUKEY, so all STATSGO and SSURGO records are associated with soil horizon data. The soil horizon attribute data was merged with the map unit attribute table and saved as a new feature class.

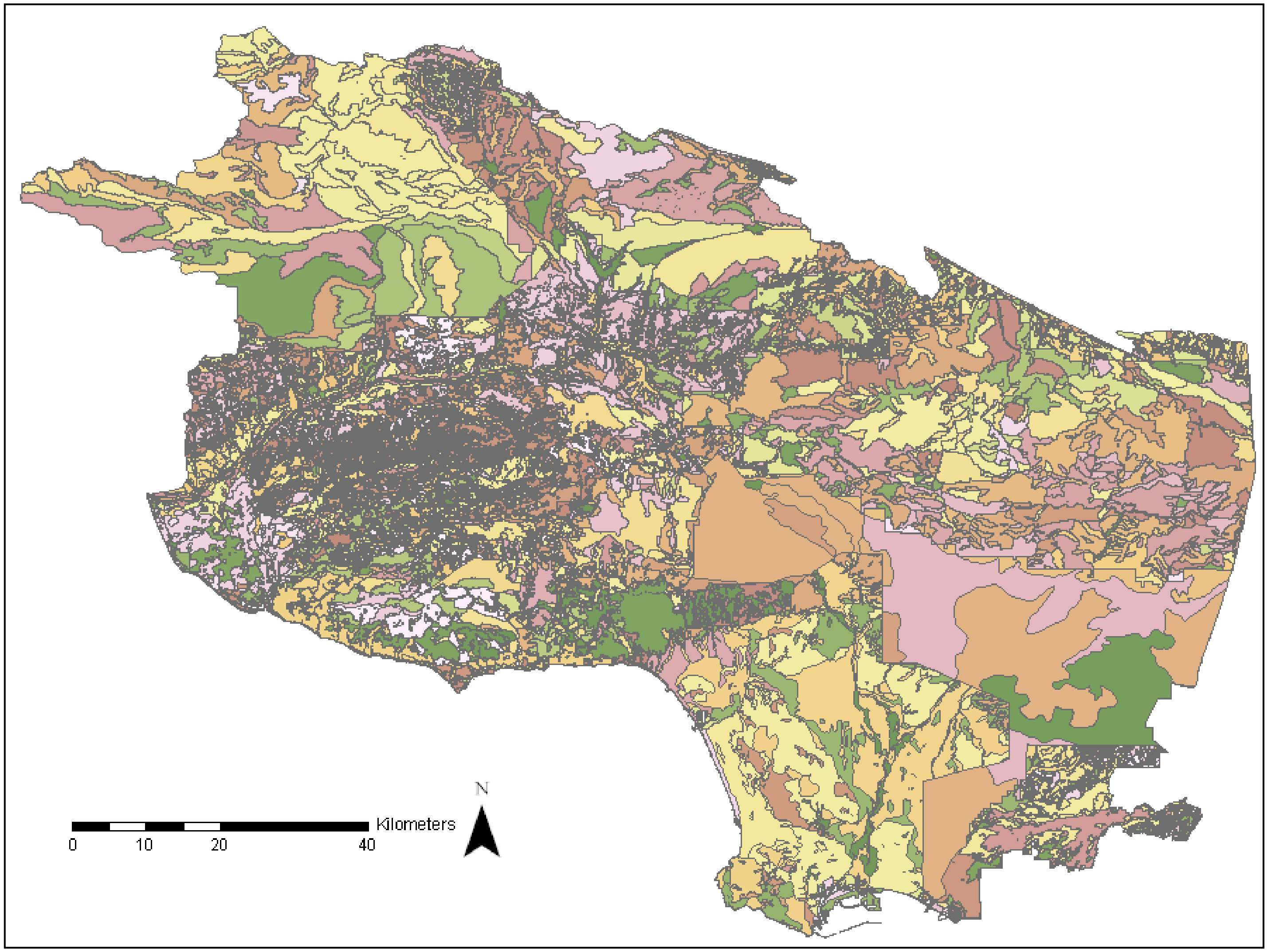


Figure 9(a): The completed soil map of the Green Visions Plan study area. The final soil map units are summarized by formation name (see Table 2). See Figure 9(b) for map legend.

Figure 9(b): The map legend for the completed soil map of the Green Visions Plan study area, Figure 9(a).

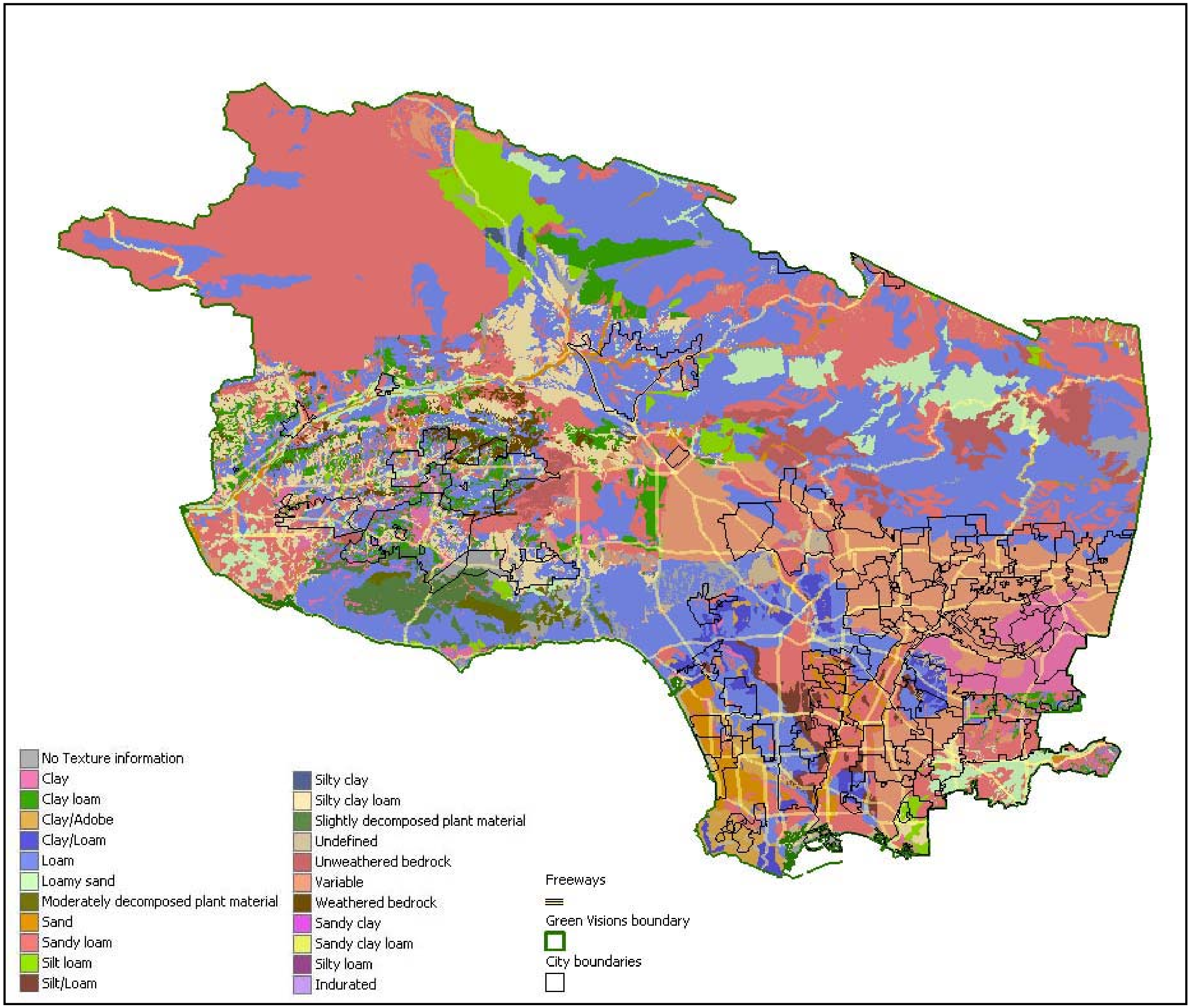


Figure 10: The completed soil texture map of the Green Visions Plan study area. The final soil map units are summarized by texture as shown in Table 3.

3. A 3D model was then generated in ArcScene using the merged dataset. It is important to note that it was necessary to convert the original positive depth measurements to negative values. The 3D model depicts soil depth for each soil horizon in each map unit (Figures 11 and 12). The maximum depth of the available soil horizon information is approximately 100 inches. To create a 3D model where each soil horizon could be symbolized as a separate color, a separate feature class must be created for each soil horizon, using the top and bottom extent measurements of each soil horizon. These measurements are referred to as base heights and extrusions respectively in ArcScene.

Unique 3D models can be generated for any attribute that possesses vertical depth measurements. Some attributes such as 'Saturated Hydraulic Conductivity', 'Moist Bulk Density' and 'Available Water Capacity' are provided as ranges rather than an exact value, therefore a representative value/the midpoint must be calculated for the soil model to be symbolized accordingly.

Because there is no soil horizon depth data for the 1919 historical polygon or the coastal fill land polygon, these areas appear 2D, such as displayed in Figures 11 and 12.

Summary

A comprehensive digital soil database of the Green Visions Plan study area has been compiled in ESRI Shapefile format, and a detailed soil horizon table is also available for approximately 95% of the soil map units (Figures 9 and 10). This dataset was created by compiling soil information from several sources including SSURGO, STATSGO (NRCS, 2007a, b, and c), and historical USDA data (Nelson et al., 1919). The relationship between the soil map shapefile and the records in the soil horizons table is one-to-many. If desired, the soil horizon table can be related to the soil map shapefile, based on a common foreign key (MUKEY).

Data Availability

The Green Visions study area soil map layer and associated soil horizon data are freely available to the public and can be downloaded from either the GIS Research Laboratory website at http://uscgislab.net or via the Green Visions website at http://www.greenvisionsplan.net/html/datasets.html. The map layers are available in ESRI shapefile format, and the accompanying soil horizon data is provided in Microsoft Access database format.

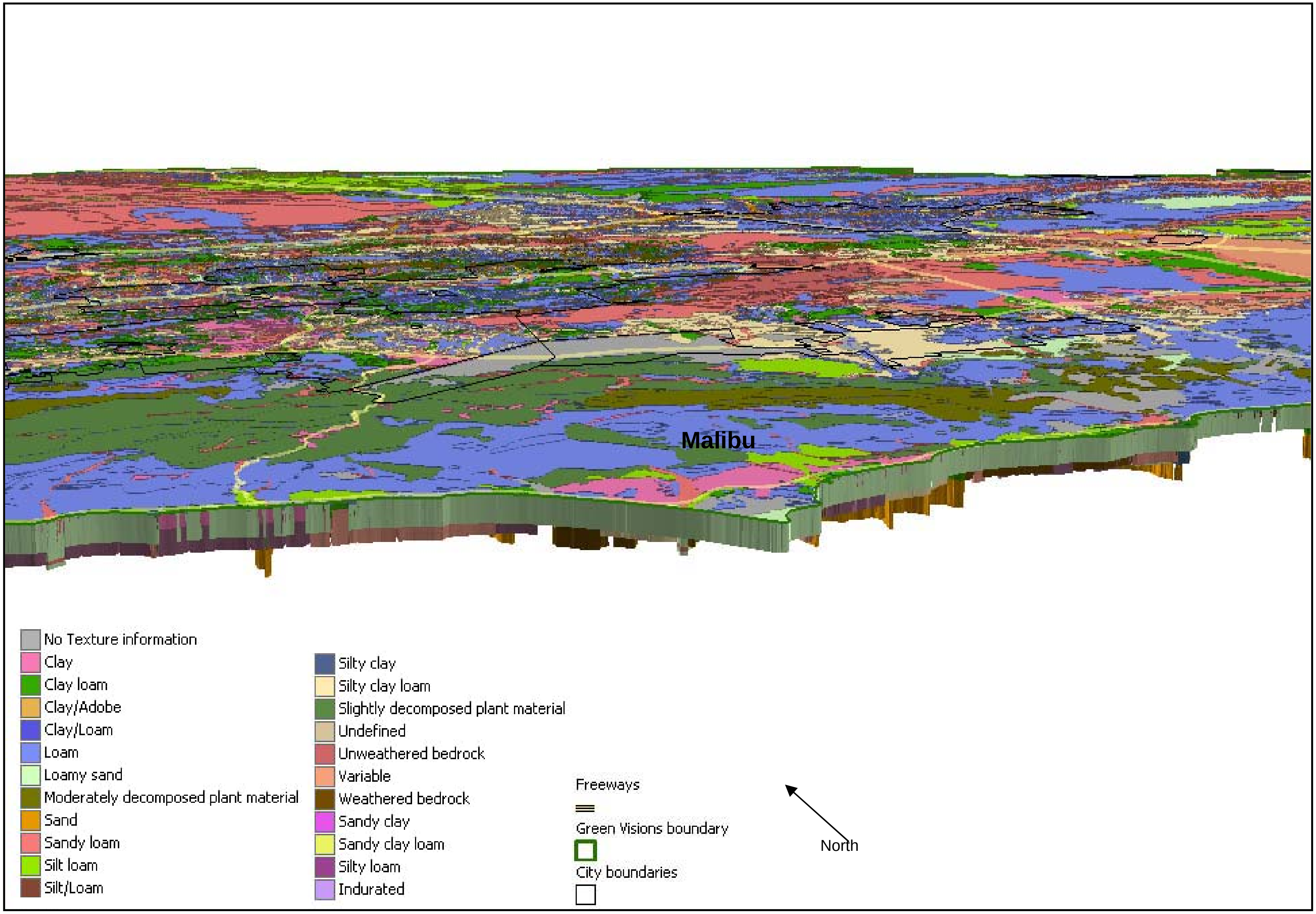


Figure 11(a): Detailed view of soil textures at different soil horizon depths in Malibu area.

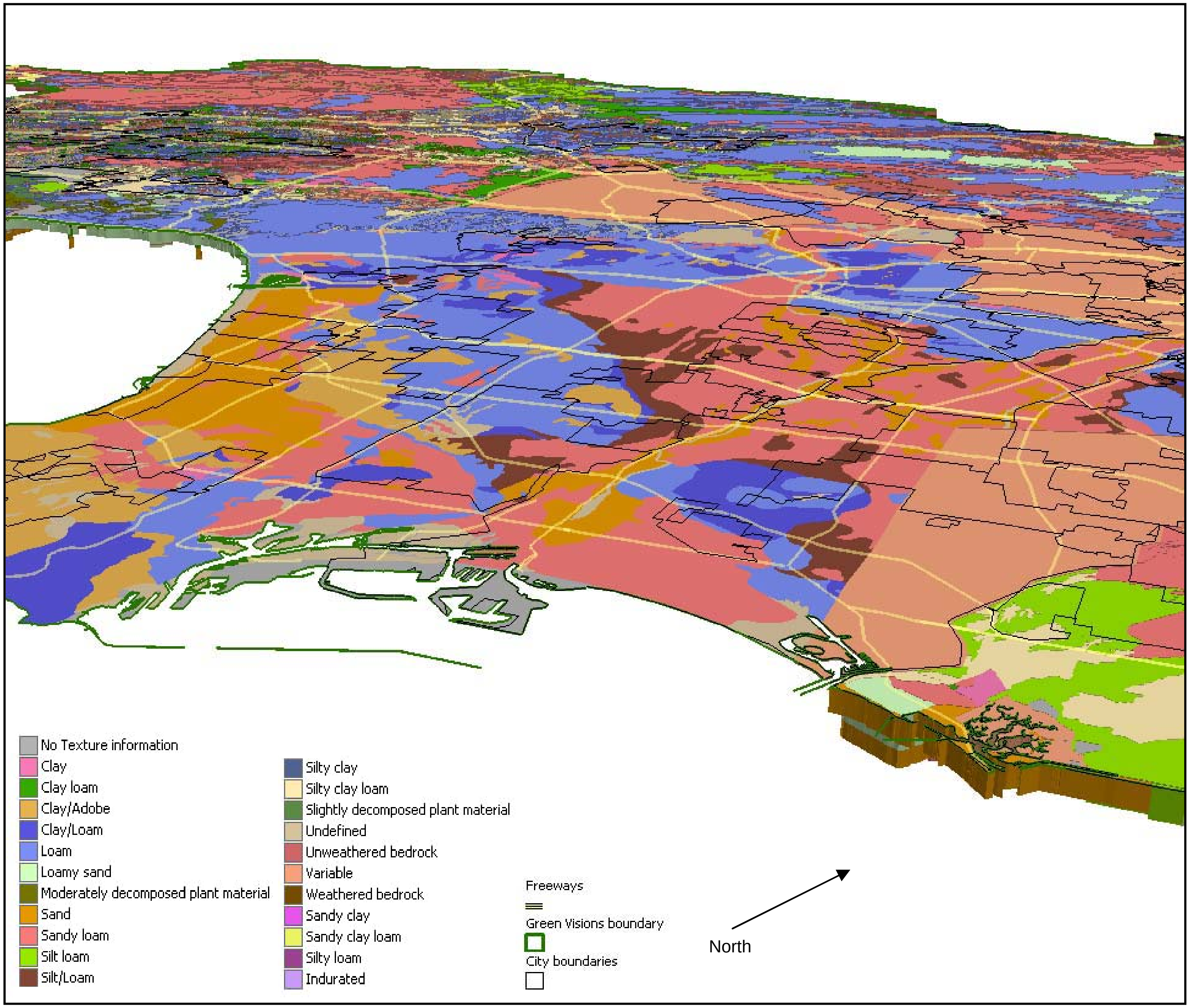


Figure 11(b): Detailed view of soil textures in Long Beach area. Much of the soil texture information for this area was derived from the 1919 historical soil map. No soil horizon depth information was supplied, and therefore most of the area is represented as a flat surface in the 3D model.

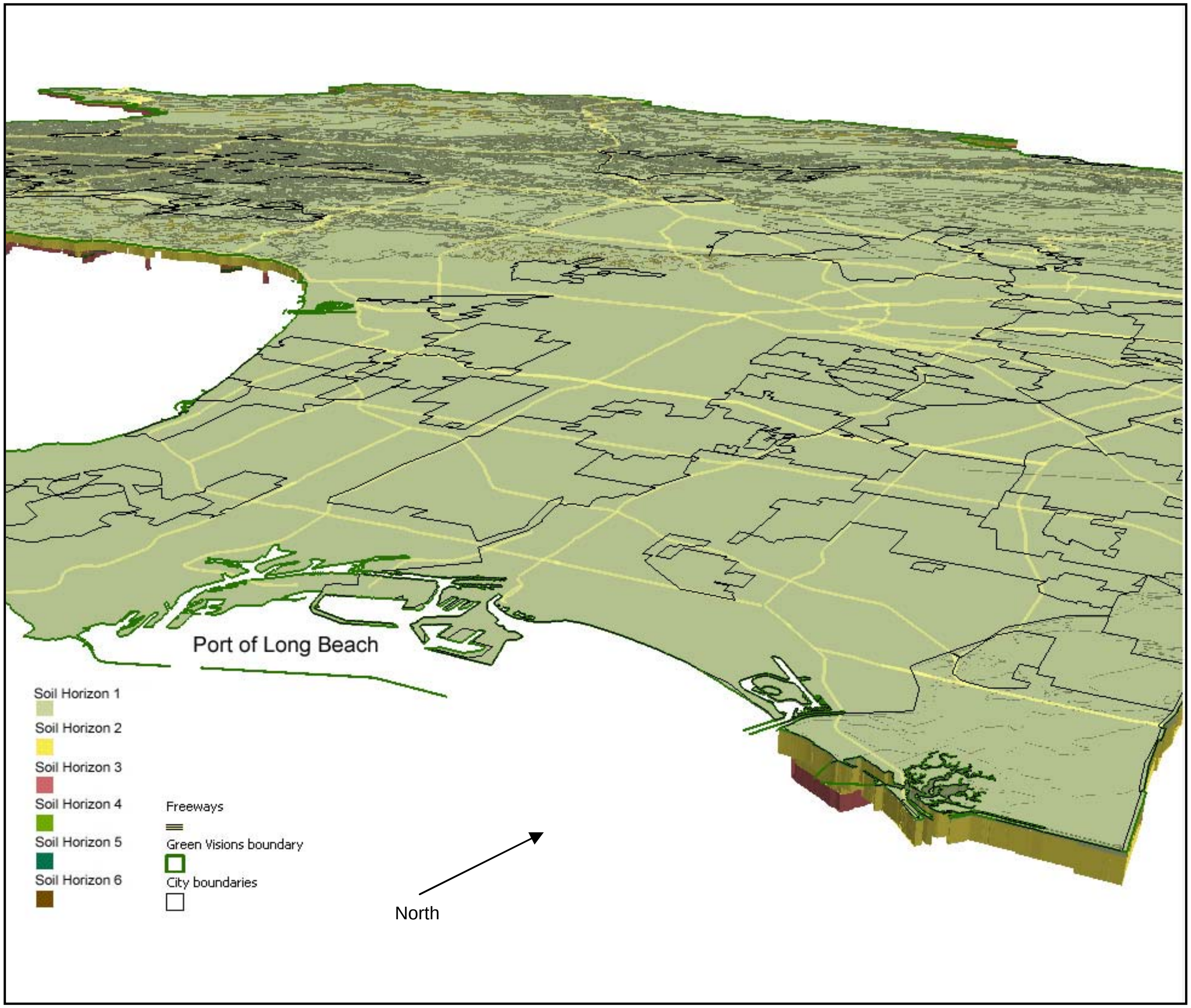


Fig 12(a): Detailed view of soil horizon depths in Long Beach area. Fill land (i.e. Port of Long Beach) without soil horizon information is represented as a flat surface in the 3D model.

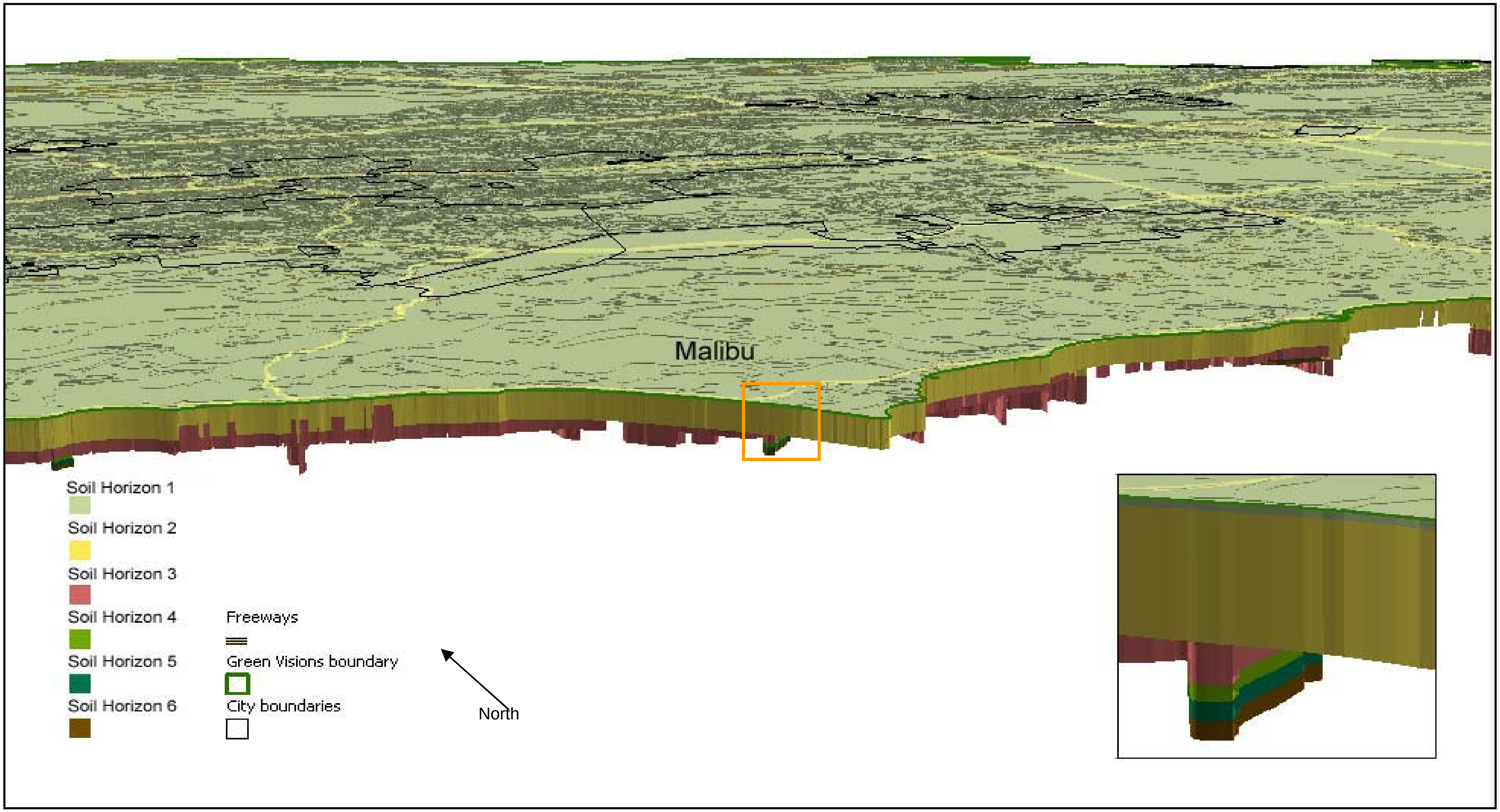


Fig 12(b): Generalized view of available soil horizon data in Malibu area.

Acknowledgements

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Table 1: Correlation of 1919 USDA historical map soil types with NRCS SSURGO map units.

1919 Soil Name	1919 Soil Texture	1919 Soil Description	1919 Subsoil Description	1919 Substratum/ Bedrock	SSURGO Map Unit Names
Altamont Clay Loam (A)	Clay/Loam	To a depth of 12/18 in. the soil is brown, light brown or dark brown loam	Light brown or reddish brown loam, clay loam, or clay (depends on amount of sandstone bedded in underlying shale).		**No Match**
Altamont Clay (Ac)	Clay		Encountered around 12 to 24 in. as a clay loam/clay subsoil of light-brown, yellowish brown, brown or grayish brown color.	Begins at 24/60 in., with soft shale and strata of sandstone. Lighter texture than subsoil, and is weathered uniformly.	**No Match**
Altamont Loam (Al)	Loam	To a depth of 12/18 in. the soil is light brown to dark brown loam (can also be slightly reddish brown). Has a light fine sandy loam texture.	Brown or reddish-brown loam, heavy loam or clay loam. Becomes lighter in color and courser in texture with depth.	Subsoil merges into partially weathered underlying shale and sandstones at 1/5 ft.	**No Match**
Altamont Clay Adobe (Ao)	Clay/Adobe	To a depth of 10/18 in. the soil is brown to dark-brown heavy plastic clay	Lighter in texture than surface soils, ranges from light-brown to reddish brown in color. Ranges in texture from loam to clay.	Shale encountered at an average depth of 3 ft, though this could be 6 ft in areas of gentle slopes.	**No Match**
Chino Clay Loam (Cc)	Clay/Loam	To a depth of 12/18 in. the soil is dark-gray to black, brownish in some areas. Soil can merge into a subsoil layer or continue beyond the depth of 6 ft.	Subsoil is dark grayish brown, stratified layers of silt/clay/fine sand. Some areas so not have a subsoil layer		**No Match**
Coastal Beach (Co)	Undefined				**Coastal beaches (95%)**
Chino Silt Loam (also includes Chino Silt Loam, light phase (Cs)	Silt/Loam	Dark brownish gray to nearly black, silt loam. Texture and colour is variable in places	Brown or grayish-brown strata of silt, clay and fine sand found below a depth of 12/18 in. Lighter textured parts are brown.		**Chino silt loam, 0 to 2 % slopes**

Table 1. (cont.)

1919 Soil Name	1919 Soil Texture	1919 Soil Description	1919 Subsoil Description	1919 Substratum/ Bedrock	SSURGO Map Unit Names
Dublin Clay (D)	Clay	Dark gray to black, friable clay	Below 12 in., the soil grades into a brown, dark-brown or grayish-brown subsoil. Subsoil is sometimes calcareous		**No Match**
Dublin Clay Adobe (Dc)	Clay/Adobe	Dark-gray to black, heavy clay of adobe structure	In stream bottoms the subsoil below 12 in. consist of strata of silt/sand/clay, but on alluvial fans the depth is uniform to a depth of 6 feet or more. Subsoil is light brown to dark brown		**No Match**
Diablo Clay Adobe (Dy)	Clay/Adobe	To a depth of 10/36 in. the soil is dark-gray to black, heavy clay with pronounced adobe structure.	Light-brown to dark-brown clay. The subsoil located at the alluvial fans and footslopes is similar to the surface soil. The subsoil located in stream bottoms consist of different	Partially weathered shale encountered at an average depth of 1 ft	**Diablo Clay, 9 to 15 %; 15 to 30 %; 30 to 50 % slopes**
Holland Loam (H)	Loam	To a depth of 10/18 in. the soil is brown loam	Only found in certain locations (soil can merge directly with bedrock). Where there is subsoil, it is light-brown and could be heavier or lighter than the surface soil.	Granite or Schist typically encountered at a depth of 6 ft.	**No Match**
Holland Sandy Loam (Ha)	Sandy Loam	To a depth of 10/18 in. the soil is brown or grayish-brown, gritty, friable, sandy loam. Almost a loam/fine sandy loam texture	Brown, light-brown or slightly reddish brown. Compact, gritty, heavy sandy loam or clay loam	Subsoil merges into partially weathered granite at depth of 18/36 in. Bedrock encountered between 1 ft/6 ft.	**No Match**
Hanford Clay Loam (Hc)	Clay/Loam	Brown to grayish-brown, light-textured, clay loam	Soil grades into the lightly reddish-brown, heavy clay loam/clay subsoil at a depth of 24/36 in.		**No Match**
Hanford Fine Sandy Loam (Hf)	Sandy Loam	Brown to grayish-brown, relatively light-textured, fine sandy loam, open and friable	Encountered at a depth of 12 to 15 in. Texture varies near streamways. Subsoil can continue uniform to a depth of 6 ft	Gravelly substrata occurs	**No Match**

Table 1. (cont.)

1919 Soil Name	1919 Soil Texture	1919 Soil Description	1919 Subsoil Description	1919 Substratum/ Bedrock	SSURGO Map Unit Names
Hanford Loam (Hl)	Loam	To a depth of 12/72 in. the soil is brown or grayish-brown, friable, light textured loam.	Lighter in color than the surface soil, but could be reddish-brown where weather has occurred frequently		**No Match**
Hanford Sand (Ho)	Sand	To a depth of 12 in. the soil is brown, buff or grayish-brown, friable, medium-textured to fine sand	Subsoil of brown or grayish-brown strata of fine sand, silt or gravel		**No Match**
Hanford Sandy Loam (also includes Hanford Sandy Loam, coarse phase) (Hs)	Sandy Loam	Brown or grayish-brown, friable, sandy loam uniform in texture up to a depth of 6 feet. In some areas, the soil only reaches 12/15 in. deep before encountering the subsoil.	Subsoil composed of different strata with a lighter color than the surface soil and a texture ranging from fine sandy loam/sand/silt loam		**Hanford Sandy Loam, 0 to 9 %; 2 to 9 %; 2 to 9 % Calcareous variant. Hanford coarse sandy loam, 0 to 2 %; 2 to 9 %; 9 to 15 %. Hanford sandy loam, cool, 2 to 9 % slopes**
Montezuma Clay Adobe (M)	Clay/Adobe	Dark-gray to black compact clay, though the soil in some areas might be brownish in color.	Soil passes into a light-brown to dark-brown, heavy calcareous clay loam/clay subsoil which extends up to a depth of 6 ft.	Substratum is similar to the subsoil, but some places consist of strata with different textures.	**No Match**
Madera Fine Sandy Loam (Ml)	Sandy Loam	To a depth of 8/18 in. the soil is brown, light-brown or grayish-brown, friable fine sandy loam	Extends from 18 in. to 30 in. Compact, gritty clay loam or clay, brown or reddish brown in color	Subsoil rests on an indurated hardpan extending to a depth of 6 ft or more. Could also grade into a substratum of loam or clay loam lighter in color than the subsoil.	**No Match**
Oakley Fine Sand (Ms)	Sand	Brown, light-brown or grayish-brown fine sand, extending to 6 ft in depth or more in most places.	Subsoil below 4 ft may be a compact, reddish-brown sand/sandy loam becoming almost hardpan in certain areas		**No Match**

Table 1. (cont.)

1919 Soil Name	1919 Soil Texture	1919 Soil Description	1919 Subsoil Description	1919 Substratum/ Bedrock	SSURGO Map Unit Names
Pleasanton Loam (P)	Loam	To a depth of 12/36 in. the soil is light-brown to dark-brown medium textured loam/silty loam.	Light textured brown/light-brown or reddish brown silty clay loam or clay.	Subsoil rests on sub-stratum at depth of 18/72 in.	**No Match**
Ramona Clay Loam (Rc)	Clay/Loam	To a depth of 8/24 in. the soil is brown, dark-brown or gray-ish-brown light-textured clay loam. Variable in texture.	Heavy compact clay loam/clay, of brown or reddish-brown color.	Subsoil rests on a variably textured loam or clay loam substratum at 4/6 ft. Substratum is lighter in color and is more permeable than the subsoil.	**No Match**
Ramona Fine Sandy Loam (Rf)	Sandy Loam	To a depth of 12/24 in. the soil is brown, light-brown or gray-ish-brown, smooth-textured fine sandy loam.	Generally heavier than the surface soil, ranging from a brown to red-dish-brown, compact fine sandy loam/loam/heavy clay loam.	A substratum less com-pact than the subsoil is encountered at 6 ft. Substratum shows stratification.	**No Match**
Rough Broken Land (Rl)	Undefined				**Rough broken land, 85%**
Ramona Loam (Ro)	Loam	To a depth of 12/24 in. the soil is brown, grayish-brown or dark-brown light-textured loam.	Reddish-brown, brown or red, compact clay loam or clay. Semi-cemented in places.	Usually at 4/6 ft the subsoil encounters sub-stratum of loam/clay loam. Eventually suc-ceeded by stratified beds of silt/sand/gravel/clay.	**Ramona Loam, 2 to 5 %; 5 to 9 % slopes**
Ramona Sandy Loam (Rs)	Sandy Loam	Brown, grayish-brown and rarely dark brown. Can be reddish brown when wet. Fri-able but compact when dry.	At 12/24 in. the soil changes to a brown, reddish-brown/red compact sandy loam/loam/clay loam. Ex-tends to a depth of 4/6 ft before grading back into material similar to the surface soil	Substratum resembles subsoil in both color and texture. Shows some stratification.	**Ramona Sandy Loam, 9 to 30 % slopes, eroded**
Riverwash (Ry)	Undefined				**Riverwash, 75%; 85%; 90%; 100%**

Table 1. (cont.)

1919 Soil Name	1919 Soil Texture	1919 Soil Description	1919 Subsoil Description	1919 Substratum/ Bedrock	SSURGO Map Unit Names
Tujunga Sand (T)	Sand	Gray, brownish-gray, very light grayish-brown fine/medium-textured loose sand. Soil contains fine sand and silt which makes it loamy	Subsoil below 12 in. is more compact than the surface soil		**Tujunga Sand, Cool, 2 to 9 % slopes**
Tujunga Fine Sandy Loam (Tf)	Sandy Loam	Gray, brownish-gray or very light grayish-brown fine sandy loam that extends to a depth of 1/6 ft. Strips if sand/fine sand/gravelly sand can occur irregularly over the surface			**No Match**
Tidal Marsh (Tl)	Undefined				**No Match**
Tujunga Fine Sand (Ts)	Sand	Gray, brownish-gray, light-grayish brown incoherent loamy fine sand. Can extend from a depth of a few inches to 6 feet. Varies in texture due to periodic overflows.	Subsoil resembles surface soil though it might be browner in color. Contains an alternating variable light textured strata		**No Match**
Water	Undefined				**Water, 100% (six matches)**
Yolo Loam (Y)	Loam	Brown or grayish-brown with some small to medium gravel. Generally uniform to 6 ft in depth.	Subsoil is lighter in color than the surface soil, ranging from light-brown, yellowish brown or slightly reddish brown	Substratum resembles subsoil	**Yolo Loam, 0 to 2 %; 2 to 9 % slopes**
Yolo Clay Loam (Yc)	Clay/Loam	Brown grayish-brown or dark-brown clay loam ranging from 1 to 6 ft	Subsoil similar to surface soil, but subsoil near stream bottoms and other places consist less than 12 in. of strata with varying textures. Generally lighter brown that surface soil		**No Match**
Yolo Sandy Loam (also includes Yolo sandy loam heavy phase) (Ys)	Sandy Loam	Brown or grayish-brown, sandy loam with gravel and other coarse materials in certain areas. Soil can continue on beyond 6 feet in depth on alluvial fans.	Subsoil is encountered at a depth of 12 inches along streams. It consists of stratified layers of sand/silt/gravel		**No Match**

Table 2: List of major soil units in the Green Visions Plan study area, grouped by formation.

Formation Name	Original Soil Map Unit Name
Abaft-Beaches	Abaft-Beaches Association, 0-5 % Slopes
	Abaft-Beaches-Urban Land Complex, 0-5 % Slopes
Agua Dulce	Agua Dulce Stony Loam, 30-50 % Slopes
	Agua Dulce-Los Robles-Modjeska Families Association, 10-60 % Slopes
Alo	Alo Clay, 15-30 % Slopes
	Alo Clay, 30-50 % Slopes
	Alo Clay, 9-15 % Slopes
	Alo Variant Clay, 15-30 % Slopes
	Alo Variant Clay, 30-50 % Slopes
	Alo Variant Clay, 9-15 % Slopes
Altamont	Altamont Clay
	Altamont Clay Adobe
	Altamont Clay Loam
	Altamont Loam
Amargosa	Amargosa Rocky Coarse Sandy Loam, 9-55 % Slopes, Eroded
Anacapa	Anacapa Gravelly Sandy Loam, 2-9 % Slopes
	Anacapa Sandy Loam, 0-2 % Slopes
	Anacapa Sandy Loam, 2-9 % Slopes
	Anacapa-Urban Land Complex, 0-2 % Slopes
Anaheim	Anaheim Clay Loam, 15-30 % Slopes
	Anaheim Clay Loam, 30-50 % Slopes
	Anaheim Clay Loam, 50-75 % Slopes
	Anaheim Loam, 15-30 % Slopes
	Anaheim Loam, 30-50 % Slopes
Anaverde	Anaverde Loam, 15-30 % Slopes
	Anaverde Rocky Loam, 30-50 % Slopes
Area Not Digitized	Area Not Digitized
Arnold	Arnold Sand, 9-50 % Slopes
Avawatz-Oak Glen	Avawatz-Oak Glen Association, Gently Sloping*
	Avawatz-Oak Glen, Dry Families Association, 2-15 % Slopes
Ayar	Ayar Clay Loam, 5-15 % Slopes
Azule	Azule Gravelly Loam, 5-9 % Slopes
	Azule Loam, 0-5 % Slopes
	Azule Loam, 2-9 % Slopes, Eroded
	Azule Loam, 9-15 % Slopes
Badland	Badland
Bakeoven-Lithic Xerorthents-Sur	Bakeoven Family-Lithic Xerorthents-Sur Family, Moderately Deep Complex, 45-80 % Slopes
Bakeoven-Sur	Bakeoven-Sur, Moderately Deep Families Complex, 50-75 % Slopes

Table 2. (cont.)

Formation Name	Original Soil Map Unit Name
Balcom	Balcom Clay Loam, 15-30 % Slopes
	Balcom Clay Loam, 30-50 % Slopes
	Balcom Clay Loam, 9-15 % Slopes
	Balcom Silty Clay Loam, 15-30 % Slopes
	Balcom Silty Clay Loam, 30-50 % Slopes
	Balcom Silty Clay Loam, 50-75 % Slopes
	Balcom Silty Clay Loam, 9-15 % Slopes
	Balcom-Balcom, Dark Surface Association, 30-75 % Slopes
	Balcom-Rock Outcrop Complex, 15-50 % Slopes
Balder	Balder Family-Mollic Haploxeralfs, Cool-Lithic Haploxeralfs Complex, 5-60 % Slopes
	Balder Family-Xerorthents Complex, 5-60 % Slopes
Beach	Beaches
	Coastal Beach
Blasingame	Blasingame Stony Loam, 9-30 % Slopes
	Blasingame-Rock Outcrop Complex, 9-30 % Slopes
Bolsa	Bolsa Silt Loam
	Bolsa Silt Loam, Drained
	Bolsa Silty Clay Loam
	Bolsa Silty Clay Loam, Drained
Bosanko	Bosanko Clay, 15 To 30 Percent Slopes
	Bosanko Clay, 30-50 % Slopes
	Bosanko Clay, 9-15 % Slopes
Botella	Botella Clay Loam, 2-9 % Slopes
	Botella Loam, 2-9 % Slopes
	Botella Loam, 2-9 % Slopes
Cajon	Cajon Loamy Sand, 2-9 % Slopes
Calcic Argixerolls	Calcic Argixerolls, 30-75 % Slopes
Calcic Haploxerepts-Mollic Haploxeralfs	Calcic Haploxerepts-Mollic Haploxeralfs Association, 30-75 % Slopes
Calcixerollic Xerochrepts-Calleguas-Modesto	Calcixerollic Xerochrepts-Calleguas Family-Modesto Family, Moderately Deep Complex, 30-60 % Slopes
Calleguas	Calleguas Clay Loam, 50-75 % Slopes, Eroded
	Calleguas Shaly Loam, 30-50 % Slopes
	Calleguas Shaly Loam, 9-30 % Slopes, Eroded
	Calleguas-Arnold Complex, 30-50 % Slopes, Eroded
Camarillo	Camarillo Loam
	Camarillo Loam, Coastal, 0-2 % Slopes
	Camarillo Loam, Sandy Substratum
	Camarillo Sandy Loam
Caperton-Baywood	Caperton-Baywood Families Complex, 45-80 % Slopes
Caperton-Capistrano	Caperton-Capistrano Families Complex, 35-80 % Slopes
Caperton-San Andreas-Modesto	Caperton-San Andreas-Modesto Families Complex, 15-60 % Slopes

Table 2. (cont.)

Formation Name	Original Soil Map Unit Name
Caperton-Trigo	Caperton-Trigo, Granitic Substratum-Lodo Families Complex, 50-85 % Slopes
	Capistrano Sandy Loam, 2-9 % Slopes
Capistrano	Capistrano Sandy Loam, 9-5 % Slopes
Capistrano-Urban	Capistrano-Urban Land Complex, 0-2 % Slopes
	Capistrano-Urban Land Complex, 0-9 % Slopes
	Capistrano-Urban Land Complex, 2-9 % Slopes
Castaic And Saugus	Castaic And Saugus Soils, 30-65 % Slopes, Severely Eroded
	Castaic And Saugus Soils, 30-75 % Slopes,Eroded
Castaic	Castaic Silty Clay Loam, 2-9 % Slopes
	Castaic Silty Clay Loam, 9-15 % Slopes
Castaic-Balcom	Castaic-Balcom Complex, 15-30 % Slopes
	Castaic-Balcom Complex, 30-50 % Slopes, Eroded
	Castaic-Balcom Complex, 50-65 % Slopes, Eroded
	Castaic-Balcom Complex, 9-15 % Slopes, Eroded
	Castaic-Balcom Silty Clay Loams, 15-30 % Slopes
	Castaic-Balcom Silty Clay Loams, 30-50 % Slopes
	Castaic-Balcom Silty Clay Loams, 30-50 % Slopes, Eroded
	Castaic-Balcom Silty Clay Loams, 50-65 % Slopes, Eroded
	Castaic-Balcom Silty Clay Loams, 9-15 % Slopes
Chesterton	Chesterton Coarse Sandy Loam, 5-15 % Slopes, Eroded
	Chesterton Sandy Loam, 9-30 % Slopes, Severely Eroded
Chilao	Chilao Family, 20-60 % Slopes
Chilao-Trigo	Chilao-Trigo, Granitic Substratum-Lodo Families Complex, 55-85 % Slopes
Chino	Chino Clay Loam
	Chino Loam
	Chino Silt Loam
	Chino Silty Clay Loam, Drained
Chualar	Chualar Clay Loam, 2-9 % Slopes
Chualar-Urban	Chualar-Urban Land Complex, 2-9 % Slopes
Chumash-Boades-Malibu	Chumash-Boades-Malibu Association, 30-75 % Slopes
	Chumash-Boades-Malibu Association, 5-15 % Slopes
Cibo	Cibo Clay, 15-30 % Slopes
	Cibo Clay, 5-15 % Slopes
Cieneba	Cieneba Sandy Loam, 15-30 % Slopes
	Cieneba Sandy Loam, 30-75 % Slopes, Eroded
	Cieneba-Friant Sandy Loams
	Cieneba-Rock Outcrop Complex
	Cieneba-Rock Outcrop Complex, 30-75 % Slopes
Conejo-Urban	Conejo-Urban Land Complex, 0-2 % Slopes
	Conejo-Urban Land Complex, 2-9 % Slopes
Corralito	Corralitos Loamy Sand
	Corralitos Loamy Sand, 0-2 % Slopes
	Corralitos Loamy Sand, 2-9 % Slopes

Table 2. (cont.)

Formation Name	Original Soil Map Name
Cortina	Cortina Cobbly Sandy Loam, 2-9 % Slopes
	Cortina Sandy Loam, 0-2 % Slopes
	Cortina Sandy Loam, 2-9 % Slopes
	Cortina Stony Sandy Loam, 2-9 % Slopes
	Cortina Very Stony Sandy Loam, 9-5 % Slopes
Cotharin	Cotharin Clay Loam, 30-75 % Slopes
	Cotharin Loam, 30-75 % Slopes, Dry
	Cotharin Loam-Rock Outcrop Complex, Very Bouldery, 30-75 % Slopes
	Cotharin-Rock Outcrop-Tongva Complex, 30-75 % Slopes
Cotharin-Talepop	Cotharin-Talepop Association, 15-50 % Slopes
	Cotharin-Talepop Association, 30-75 % Slopes
	Cotharin-Talepop-Urban Land Complex, 0-50 % Slopes
Cropley	Cropley Association, 2-15 % Slopes
	Cropley Clay, 0-2 % Slopes
	Cropley Clay, 2-9 % Slopes
	Cropley Clay, Calcareous Variant
	Cropley, Coastal-Urban Land-Haploxererts Complex, 0-30 % Slopes
	Cropley, Coastal-Xerorthents, Landscaped-Urban Land Complex, 0-9 % Slopes
Cropley-Urban	Cropley-Urban Land Complex, 0-2 % Slopes
	Cropley-Urban Land Complex, 2-9 % Slopes
Cumulic	Cumulic Haploxerolls, 0-9 % Slopes
Dam	Dam
Danville-Urban	Danville-Urban Land Complex, 0-2 % Slopes
	Danville-Urban Land Complex, 0-9 % Slopes
	Danville-Urban Land Complex, 9-15 % Slopes
Debris Basin	Debris Basin
Diablo	Diablo Clay Adobe
	Diablo Clay, 15-30 % Slopes
	Diablo Clay, 30-50 % Slopes
	Diablo Clay, 9-15 % Slopes
Diablo-Altamont-Henneke	Diablo-Altamont-Henneke Families Association, 10-60 % Slopes
Dublin	Dublin Clay
Elder	Elder Fine Sandy Loam, Coastal, 0-2 % Slopes
Exchequer	Exchequer Family, 30-60 % Slopes
Fill	Fill Land
	Coastal Fill Land
Fluvaquents-Riverwash	Fluvaquents-Riverwash Complex, 0-5 % Slopes
Fontana	Fontana Clay Loam, 15-30 % Slopes
	Fontana Clay Loam, 30-50 % Slopes
Friant	Friant Fine Sandy Loam, 50-75 % Slopes
Gabino	Gabino Gravelly Clay Loam, 15-50 % Slopes

Table 2. (cont.)

Formation Name	Original Soil Map Unit Name
Garretson	Garretson Gravelly Loam, 2-9 % Slopes
	Garretson Loam, 0-2 % Slopes
	Garretson Loam, 2-9 % Slopes
	Garretson Silt Loam, Calcareous Variant, 2-5 % Slopes
	Garretson Very Fine Sandy Loam, 2-9 % Slopes
Gaviota	Gaviota Rocky Sandy Loam, 15-30 % Slopes, Eroded
	Gaviota Rocky Sandy Loam, 15-50 % Slopes
	Gaviota Rocky Sandy Loam, 30-50 % Slopes, Eroded
	Gaviota Sandy Loam, 30-50 % Slopes
	Gaviota Sandy Loam, 9-30 % Slopes
	Gaviota Stony Sandy Loam, 30-50 % Slopes
	Gaviota-Rock Outcrop Association, 50-100 % Slopes
	Gaviota-Rock Outcrop Complex
Gazos	Gazos Clay Loam, 30-50 % Slopes
	Gazos Gravelly Loam, Coastal, 30-75 % Slopes
	Gazos Silty Clay Loam, 15-30 % Slopes
	Gazos Silty Clay Loam, 30-50 % Slopes
	Gazos Silty Clay Loam, 50-75 % Slopes
Gazos-Balcom	Gazos-Balcom Complex, 30-50 % Slopes
Gilroy	Gilroy Clay Loam, 15-30 % Slopes
	Gilroy Clay Loam, 9-15 % Slopes
	Gilroy Very Rocky Clay Loam, 15-50 % Slopes
Godde	Godde Loam, 15-30 % Slopes
	Godde Rocky Loam, 30-50 % Slopes
Gorman	Gorman Sandy Loam, 15-30 % Slopes, Eroded
	Gorman Sandy Loam, 30-50 % Slopes, Eroded
	Gorman Sandy Loam, 9-15 % Slopes
	Gorman Sandy Loam, 9-15 % Slopes, Eroded
Grangeville	Grangeville Fine Sandy Loam
Gravel Pits	Gravel Pits
Green Bluff-Hohmann	Green Bluff-Hohmann Families-Xerorthents Complex, 15-60 % Slopes
Greenfield	Greenfield Sandy Loam, 0-2 % Slopes
	Greenfield Sandy Loam, 2-9 % Slopes
	Greenfield Sandy Loam, 2-9 % Slopes, Eroded
	Greenfield Sandy Loam, 9-15 % Slopes, Eroded
Gullied Land	Gullied Land
Hades-Ginser-Ola	Hades-Ginser-Ola Families Association, 10-30 % Slopes
Hambright	Hambright Rocky Clay Loam, 30-50 % Slopes
	Hambright Very Rocky Loam, 15-75 % Slopes

Table 2. (cont.)

Formation Name	Original Soil Map Unit Name
Hanford	Hanford Clay Loam
	Hanford Coarse Sandy Loam, 0-2 % Slopes
	Hanford Coarse Sandy Loam, 2-9 % Slopes
	Hanford Coarse Sandy Loam, 9-15 % Slopes
	Hanford Family, 3-25 % Slopes
	Hanford Fine Sandy Loam
	Hanford Gravelly Sandy Loam, 2-9 % Slopes
	Hanford Loam
	Hanford Sand
	Hanford Sandy Loam
	Hanford Sandy Loam, 0-2 % Slopes
	Hanford Sandy Loam, 2-9 % Slopes
	Hanford Sandy Loam, Calcareous Variant, 2-9 % Slopes
	Hanford Sandy Loam, Cool, 2-9 % Slopes
Haploxerolls	Haploxerolls, Shallow-Trigo Family, Dry-Haploxeralfs Complex, 90 % Slopes
	Haploxerolls, Warm-Vista Family Association, 2-30 % Slopes
	Haploxerolls-Riverwash Association, 2-25 % Slopes
	Haploxerols, Shallow-Lithic Xerorthents, Warm Complex, 45-75 % Slopes
Hohmann-Greenbluff-Konocti	Hohmann-Greenbluff-Konocti Families Association, 30-60 % Slopes
Holland	Holland Loam
	Holland Sandy Loam
Hueneme	Hueneme Fine Sandy Loam, Drained
	Hueneme Loamy Sand, Loamy Substratum
	Hueneme Sandy Loam
Huerhuero	Huerhuero Very Fine Sandy Loam, 0-5 % Slopes
	Huerhuero Very Fine Sandy Loam, 5-9 % Slopes, Eroded
	Huerhuero Very Fine Sandy Loam, 9-15 % Slopes, Eroded
	Huerhuero Very Fine Sandy Loam, 9-30 % Slopes, Severely Eroded
Igneous Rock	Igneous Rock Land
Inks-Lodo-Agua Dulce	Inks-Lodo-Agua Dulce Families Complex, 30-80 % Slopes
Kayiwish	Kayiwish Association, 0-9 % Slopes
	Kayiwish Association, 2-30 % Slopes
	Kayiwish Association, 9-30 % Slopes
Kilburn-Wrentham-Supan	Kilburn-Wrentham-Supan Families Association, 10-30 % Slopes
	Kilburn-Wrentham-Supan Families Association, 30-60 % Slopes
Kimball	Kimball Sandy Loam, 9-15 % Slopes, Eroded
Landslides	Landslides
Las Posas	Las Posas Loam, 9-30 % Slopes
Las Posas-Toomes	Las Posas-Toomes Rocky Loams, 30-50 % Slopes

Table 2. (cont.)

Formation Name	Original Soil Map Unit Name
Linne	Linne Silty Clay Loam, 15-30 % Slopes, Eroded
	Linne Silty Clay Loam, 15-50 % Slopes
	Linne Silty Clay Loam, 30-50 % Slopes,Eroded
	Linne Silty Clay Loam, 9-15 % Slopes
	Linne Silty Clay Loam, 9-15 % Slopes, Eroded
Linne-Los Osos-Haploxerepts	Linne-Los Osos-Haploxerepts Association, 30-75 % Slopes
Lithic Xerochrepts-Lithic Haploxeralfs	Lithic Xerochrepts-Lithic Haploxeralfs-Rock Outcrop Complex, 30-80 % Slopes
Lithic Xerochrepts-Springdale-Rubble	Lithic Xerorthents, Dry-Springdale Families, Dry-Rubble Land Association, 50-100 % Slopes
Lockwood-Urban Land	Lockwood-Urban Land Complex, 0-15 % Slopes
	Lockwood-Urban Land Complex, 0-9 % Slopes
Lodo-Mollic Haploxeralfs	Lodo Family-Mollic Haploxeralfs Association, 15-50 % Slopes
Lodo	Lodo Rocky Loam, 30-50 % Slopes
Lodo-Botella	Lodo-Botella Families-Rock Outcrop Association, 30-60 % Slopes
Lodo-Livermore-Chualar	Lodo-Livermore-Chualar Families Association, 30-60 % Slopes
Lodo-Modesto	Lodo-Modesto Families Complex, 30-70 % Slopes
Lodo-Modjeska-Botella	Lodo-Modjeska-Botella Families Association, 10-70 % Slopes
Lodo-Tujunga	Lodo-Tujunga Families Association, 2-50 % Slopes
Lopez	Lopez Shaly Clay Loam, 30-50 % Slopes
Los Gatos-Kilburn-Panamint	Los Gatos-Kilburn-Panamint Families Association, 10-30 % Slopes
	Los Gatos-Kilburn-Panamint Families Association, 30-60 % Slopes
Los Osos	Los Osos Clay Loam, 15-30 % Slopes, Eroded
	Los Osos Clay Loam, 30-50 % Slopes
	Los Osos Clay Loam, 9-15 % Slopes, Eroded
Los Robles-Trigo-Orthents	Los Robles-Trigo Families-Orthents Association, 30-60 % Slopes
Madera	Madera Fine Sandy Loam
Malibu	Malibu Loam, 15-30 % Slopes, Eroded
Malibu-Chumash-Boades	Malibu-Chumash-Boades Association, 15-50 % Slopes
Marina	Marina Loamy Sand, 2-9 % Slopes
Metz	Metz Loam, 0-2 % Slopes
	Metz Loam, 2-5 % Slopes
	Metz Loamy Fine Sand, 0-2 % Slopes
	Metz Loamy Fine Sand, 2-9 % Slopes
	Metz Loamy Sand
	Metz Loamy Sand, 0-2 % Slopes
	Metz Loamy Sand, 2-9 % Slopes
	Metz Loamy Sand, Loamy Substratum, 0-2 % Slopes
	Metz Loamy Sand, Moderately Fine Substratum
Millerton-Millsholm	Millerton-Millsholm Families-Rock Outcrop Complex, 30-80 % Slopes
Formation Name	Original Soil Map Unit Name
Millerton-Modjeska	Millerton-Modjeska Familes Association, 30-80 % Slopes
Millerton-Reliz-Modjeska	Millerton-Reliz-Modjeska Families Association, 40-70 % Slopes

Table 2. (cont.)

Formation Name	Original Soil Map Name
Millsholm	Millsholm Loam, 15-50 % Slopes
	Millsholm Loam, 30-50 % Slopes
	Millsholm Rocky Loam, 15-30 % Slopes, Eroded
	Millsholm Rocky Loam, 30-50 % Slopes, Eroded
	Millsholm Very Rocky Loam, 30-75 % Slopes
Millsholm-Reliz-Rock Outcrop	Millsholm-Reliz Families-Rock Outcrop Association, 40-65 % Slopes
Mipolomol-Topanga	Mipolomol-Topanga Association, 30-75 % Slopes
Mipolomol-Topanga-Rock Out-crop	Mipolomol-Topanga-Rock Outcrop Complex, 30-75 % Slopes
Mocho	Mocho Clay Loam, 0-2 % Slopes
	Mocho Clay Loam, 2-5 % Slopes
	Mocho Gravelly Loam, 2-9 % Slopes
	Mocho Loam, 0-2 % Slopes
	Mocho Loam, 2-9 % Slopes
	Mocho Sandy Loam, 0-2 % Slopes
Mocho-Urban Land	Mocho-Urban Land Complex, 0-2 % Slopes
	Mocho-Urban Land Complex, 2-9 % Slopes
Modesto	Modesto, Moderately Deep-Trigo Families Complex, 25-75 % Slopes
Modjeska	Modjeska Gravelly Loam, 9-15 % Slopes
Modjeska-Lodo	Modjeska-Lodo Families Association, 40-80 % Slopes
Modjeska-Modesto	Modjeska-Modesto Families Association, 30-60 % Slopes
Mollic Haploxeralfs	Mollic Haploxeralfs, 2 To 50 % Slopes
Mollic Haploxeralfs-Xerorthents-Green Bluff	Mollic Haploxeralfs,Cool-Xerorthents, Dry-Green Bluff Family, Dry Association, 5-60 % Slopes
Montezuma	Montezuma Clay Adobe
Morical-Supan-Green Bluff	Morical-Supan-Green Bluff Families Association, 10-60 % Slopes
Myford	Myford Sandy Loam, 15-30 % Slopes
	Myford Sandy Loam, 2-9 % Slopes
	Myford Sandy Loam, 2-9 % Slopes, Eroded
	Myford Sandy Loam, 9-15 % Slopes
	Myford Sandy Loam, 9-30 % Slopes, Eroded
	Myford Sandy Loam, Thick Surface, 0-2 % Slopes
	Myford Sandy Loam, Thick Surface, 2-9 % Slopes
Nacimiento	Nacimiento Clay Loam, 15-30 % Slopes
	Nacimiento Clay Loam, 30-50 % Slopes
	Nacimiento Clay Loam, 9-30 % Slopes
	Nacimiento Silty Clay Loam, 15-30 % Slopes, Eroded
	Nacimiento Silty Clay Loam, 30-50 % Slopes
	Nacimiento Silty Clay Loam, 50-75 % Slopes
	Nacimiento Silty Clay Loam, 9-15 % Slopes, Eroded

Table 2. (cont.)

Formation Name	Original Soil Map Unit Name
Oak Glen	Oak Glen Family, 2-35 % Slopes
	Oak Glen Gravelly Sandy Loam, 2-9 % Slopes
	Oak Glen Loam, 0-2 % Slopes
	Oak Glen Loam, 2-9 % Slopes
	Oak Glen Sandy Loam, 0-2 % Slopes
	Oak Glen Sandy Loam, 2-9 % Slopes
Oak Glen-Supan-Hagen	Oak Glen-Supan-Hagen Families Complex, 0-10 % Slopes
Oak Glen-Tollhouse	Oak Glen-Tollhouse Families Complex, 30-70 % Slopes
Oak Glen-Wrentham-Kilburn	Oak Glen-Wrentham-Kilburn Families Complex, 30-60 % Slopes
Oakley	Oakley Fine Sand
Ojai	Ojai Loam, 15-30 % Slopes
	Ojai Loam, 2-9 % Slopes
	Ojai Loam, 30-50 % Slopes
	Ojai Loam, 30-50 % Slopes, Eroded
	Ojai Loam, 9-15 % Slopes
	Ojai Loam, Thin Surface Variant, 30-50 % Slopes
	Ojai Stony Fine Sandy Loam, 15-30 % Slopes, Eroded
	Ojai Stony Fine Sandy Loam, 2-15 % Slopes, Eroded
	Ojai Very Fine Sandy Loam, 0-2 % Slopes
	Ojai Very Fine Sandy Loam, 2-9 % Slopes, Eroded
	Ojai Very Fine Sandy Loam, 9-15 % Slopes, Eroded
Ojai-Zamora	Ojai-Zamora Loams, 15-30 % Slopes
Olete-Goulding-Rubble	Olete-Goulding Families-Rubble Land Association, 50-100 % Slopes
Olete-Kilburn-Mollic Haploxer-alfs	Olete-Kilburn Families, Moderately Deep-Mollic Haploxeralfs, Cool Complex, 40-70 % Slopes
Olete-Kilburn-Etsel	Olete-Kilburn-Etsel Families Complex, 50-80 % Slopes
Olete-Kilburn-Goulding	Olete-Kilburn-Goulding Families Complex, 30-50 % Slopes
Omni	Omni Clay, Drained
Orthents-Fluvents	Orthents-Fluvents Complex, 0-15 % Slopes
	Orthents-Fluvents Complex, Dry, 0-15 %t Slopes
Osito-Trigo	Osito-Trigo Families Complex, 25-55 % Slopes
Pacheco	Pacheco Silty Clay Loam
	Pacheco Silty Clay Loam, 0-2 % Slopes
Pachic Agrixerolls	Pachic Argixerolls, Coastal, 30-75 % Slopes
Pacifico-Xerorthents	Pacifico Family-Xerothents Complex, 50-90 % Slopes
Pacifico-Preston	Pacifico-Preston Families Complex, 15-50 % Slopes
Pico	Pico Loam, Sandy Substratum, 0-2 % Slopes
	Pico Sandy Loam, 0-2 % Slopes
	Pico Sandy Loam, 2-9 % Slopes
Pismo-Rock Outcrop	Pismo Family-Rock Outcrop Complex, 50-80 % Slopes
Pismo-Chilao-Shortcut	Pismo-Chilao-Shortcut Families Complex, 45-80 % Slopes
Pismo-Trigo-Exchequer	Pismo-Trigo, Dry-Exchequer, Dry Families Complex, 30-70 % Slopes
Pits	Pits
Pits And Dumps	Pits And Dumps

Table 2. (cont.)

Formation Name	Original Soil Map Unit Name
Formation Name	Original Soil Map Unit Name
Pleasanton	Pleasanton Loam
Ramona	Ramona Clay Loam
	Ramona Coarse Sandy Loam, 2-5 % Slopes
	Ramona Coarse Sandy Loam, 5-9 % Slopes
	Ramona Coarse Sandy Loam, 9-15 % Slopes
	Ramona Fine Sandy Loam
	Ramona Gravelly Sandy Loam, 2-9 % Slopes
	Ramona Gravelly Sandy Loam, 9-30 % Slopes
	Ramona Loam
	Ramona Loam, 2-5 % Slopes
	Ramona Loam, 5-9 % Slopes
	Ramona Sandy Loam
	Ramona Sandy Loam, 9-30 % Slopes, Eroded
Reliz-Trigo-Badlands	Reliz-Trigo Families-Badlands Association, 40-90 % Slopes
Rincon	Rincon Clay Loam, 15-30 % Slopes
	Rincon Clay Loam, 2-9 % Slopes
	Rincon Clay Loam, 9-15 % Slopes
	Rincon Silty Clay Loam, 15-30 % Slopes, Eroded
	Rincon Silty Clay Loam, 2-9 % Slopes
	Rincon Silty Clay Loam, 9-15 % Slopes, Eroded
	Rincon Silty Clay Loam, 9-30 % Slopes, Severely Eroded
Rincon-Modesto-Los Osos	Rincon-Modesto-Los Osos Families Association, 30-60 % Slopes
Riverwash	Riverwash
Rock Land	Rock Land
Rock Outcrop	Rock Outcrop
Rock Outcrop-Chilao-Haploxerolls	Rock Outcrop-Chilao Family-Haploxerolls, Warm Association, 15-120 % Slopes
Rock Outcrop-Cieneba	Rock Outcrop-Cieneba Complex, 30-75 % Slopes
Rock Outcrop-Friant	Rock Outcrop-Friant Complex, 50-75 % Slopes
Rock Outcrop-Gaviota	Rock Outcrop-Gaviota Complex, 30-75 % Slopes
Rock Outcrop-Lithic Xerorthents-Rubble Land	Rock Outcrop-Lithic Xerorthents-Rubble Land Association, 60-120 % Slopes
Rock Outcrop-Sumiwawa-Hipuk	Rock Outcrop-Sumiwawa-Hipuk Complex, 30-75 % Slopes
Rough Broken Land	Rough Broken Land
Rubble Land-Rock Outcrop	Rubble Land-Rock Outcrop Complex, 50-100 % Slopes
Salinas	Salinas Clay Loam, 0-2 % Slopes
	Salinas Clay Loam, 2-9 % Slopes
San Andreas	San Andreas Sandy Loam, 15-30 % Slopes
	San Andreas Sandy Loam, 30-50 % Slopes
San Benito	San Benito Clay Loam, 15-30 % Slopes, Eroded
	San Benito Clay Loam, 30-50 % Slopes, Eroded
	San Benito Clay Loam, 50-75 % Slopes
	San Benito Clay Loam, 9-15 % Slopes, Eroded
San Emigdio	San Emigdio Fine Sandy Loam, 0-2 % Slopes
	San Emigdio Fine Sandy Loam, 2-9 % Slopes
	San Emigdio Fine Sandy Loam, Moderately Fine Substratum, 0-2

Table 2. (cont.)
Table 2. (cont.)

Formation Name	Original Soil Map Unit Name
	% Slopes
Formation Name	Original Soil Map Unit Name
San Emigdio-Urban	San Emigdio-Urban Land Complex, 0-2 % Slopes
Sandy Alluvium	Sandy Alluvial Land
Santa Lucia	Santa Lucia Shaly Silty Clay Loam, 15-30 % Slopes
	Santa Lucia Shaly Silty Clay Loam, 30-50 % Slopes
	Santa Lucia Shaly Silty Clay Loam, 50-75 % Slopes
Sawpi	Sapwi Loam, 30-75 % Slopes
Sawpi-Urban	Sapwi-Urban Land Complex, 0-50 % Slopes
Saugus	Saugus Loam, 15-30 % Slopes
	Saugus Loam, 30-50 % Slopes
	Saugus Loam, 30-50 % Slopes, Eroded
	Saugus Sandy Loam, 30-50 % Slopes, Eroded
	Saugus Sandy Loam, 5-30 % Slopes
Sedimentary Rock	Sedimentary Rock Land
Sespe	Sespe Clay Loam, 30-50 % Slopes
	Sespe Clay Loam, 50-75 % Slopes
Sheridan	Sheridan Sandy Loam, 30-50 % Slopes
	Sheridan Sandy Loam, 30-50 % Slopes, Eroded
Shortcut	Shortcut Family, Dry-Lithic Xerorthents, Warm-Rock Outcrop Complex, 50-85 % Slopes
Soboba	Soboba Cobbly Loamy Sand, 0-15 % Slopes
	Soboba Cobbly Loamy Sand, 2-5 % Slopes
	Soboba Gravelly Loamy Sand, 0-2 % Slopes
	Soboba Gravelly Loamy Sand, 0-5 % Slopes
	Soboba Gravelly Loamy Sand, 2-9 % Slopes
	Soboba Gravelly Sand, Cool, 2-9 % Slopes
Sobrante-Exchequer-Cieneba	Sobrante-Exchequer-Cieneba
Soper	Soper Cobbly Loam, 15-50 % Slopes
	Soper Gravelly Loam, 15-30 % Slopes
	Soper Gravelly Loam, 30-50 % Slopes
	Soper Gravelly Loam, 30-50 % Slopes, Eroded
	Soper Gravelly Sandy Loam, 15-30 % Slopes
	Soper Gravelly Sandy Loam, 30-50 % Slopes
	Soper Loam, 15-30 % Slopes
	Soper Loam, 15-30 % Slopes, Eroded
	Soper Loam, 30-50 % Slopes
Soper-Calleguas-Bosanko-Alo	Soper-Calleguas-Bosanko-Alo
Soper-Fontana-Calleguas-Balcom-Anaheim	Soper-Fontana-Calleguas-Balcom-Anaheim
Soper-Rock Outcrop	Soper-Rock Outcrop Complex, 30-75 % Slopes
Sorrento	Sorrento Clay Loam, 0-2 % Slopes
	Sorrento Clay Loam, 2-5 % Slopes
	Sorrento Clay Loam, 2-9 % Slopes
	Sorrento Clay Loam, Heavy Variant, 2-9 % Slopes
	Sorrento Clay Loam, Heavy Variant, 9-15 % Slopes
	Sorrento Loam, 0-2 % Slopes

Table 2: (cont.)

Formation Name	Original Soil Map Unit Name
	Sorrento Loam, 2-5 % Slopes
	Sorrento Loam, 2-9 % Slopes
	Sorrento Silty Clay Loam, 0-2 % Slopes
	Sorrento Silty Clay Loam, 2-9 % Slopes
Stonyford-Millsholm	Stonyford-Millsholm Families Complex, 30-70 % Slopes
Stukel-Olete	Stukel-Olete Families Association, 50-100 % Slopes
Stukel-Sur-Winthrop	Stukel-Sur-Winthrop Families Complex, 60-100 % Slopes
Sulfic Fluvaquents	Sulfic Fluvaquents, Frequently Flooded, 0-1 % Slopes
Sumiwawa-Hipuk-Rock Outcrop	Sumiwawa-Hipuk-Rock Outcrop Complex, 30-75 % Slopes
Sumiwawa-Rock Outcrop-Zumaridge	Sumiwawa-Rock Outcrop-Zumaridge Complex, Very Stony, 30-75 % Slopes
Talepop-Rock Outcrop	Talepop-Rock Outcrop Complex, 30-75 % Slopes
Temescal-Rock Outcrop	Temescal-Rock Land Complex, 30-50 % Slopes
Terrace Escarpments	Terrace Escarpments
Tidal Flats	Tidal Flats
Tidal Marsh	Tidal Marsh
Tollhouse-Knutsen-Stukel	Tollhouse-Knutsen-Stukel Families Complex, 30-70 % Slopes
Tollhouse-Stukel-Wrentham	Tollhouse-Stukel-Wrentham Families Complex, 60-90 % Slopes
Tongva-Cotharin-Rock Outcrop	Tongva-Cotharin-Rock Outcrop Complex, 30-75 % Slopes
Topanga-Mipolomol-Sapwi	Topanga-Mipolomol-Sapwi Association, 30-75 % Slopes
Trigo-Lithic Xerorthents	Trigo Family, Dry-Lithic Xerorthents, Warm Complex, 50-80 % Slopes
Trigo	Trigo Family, Granitic Substratum, 60-90 % Slopes
Trigo-Calcixerollic Xerorthents-Vista	Trigo Family-Calcixerollic Xerochrepts-Vista Family Complex, 30-70 % Slopes
Trigo-Lithic Xerorthents	Trigo Family-Lithic Xerorthents, Warm Complex, 50-75 % Slopes
Trigo-Exchequer-Rock Outcrop	Trigo, Granitic Substratum-Exchequer Families-Rock Outcrop Complex, 30-60 % Slopes
Trigo-Exchequer-Rock Outcrop	Trigo, Granitic Substratum-Exchequer Families-Rock Outcrop Complex, 60-100 % Slopes
Trigo-Green Bluff-Supan	Trigo, Granitic Substratum-Green Bluff-Supan Families Association, 15-60 % Slopes
Trigo-Modjeska	Trigo, Granitic Substratum-Modjeska Families Association, 5-60 % Slopes
Trigo-Pismo	Trigo, Granitic Substratum-Pismo Families Complex, 20-60 % Slopes
Trigo-Calleguas-Haploxeralfs	Trigo-Calleguas Families-Haploxeralfs Complex, 30-70 % Slopes
Trigo-Calleguas-Rock Outcrop	Trigo-Calleguas Families-Rock Outcrop Complex, 60-100 % Slopes
Trigo-Lodo-Haploxerolls	Trigo-Lodo Families-Haploxerolls, Warm Complex, 50-90 % Slopes
Trigo-Millsholm-Rock Outcrop	Trigo-Millsholm Families-Rock Outcrop Complex, 45-90 % Slopes
Trigo-Modesto-Badlands	Trigo-Modesto Families-Badlands Association, 45-90 % Slopes
Trigo-Modesto-San Andreas	Trigo-Modesto-San Andreas Families Association, 15-70 % Slopes

Table 2. (cont.)

Formation Name	Original Soil Map Unit Name
Tujunga	Tujunga Fine Sand
	Tujunga Fine Sandy Loam
	Tujunga Gravelly Loamy Sand, 0-9 % Slopes
	Tujunga Loamy Sand, 0-5 % Slopes
	Tujunga Sand
	Tujunga Sand, Cool, 2-9 % Slopes
Tujunga-Capistrano	Tujunga-Capistrano Families Association, 2-20 % Slopes
Tujunga-Pismo	Tujunga-Pismo Families Association, 15-70 % Slopes
Tujunga-Urban Land	Tujunga-Urban Land Complex, 0-2 % Slopes
Typic Haploxeralfs	Typic Haploxeralfs, 3-50 % Slopes
Typic Haploxerepts	Typic Haploxerepts, 15-30 % Slopes
	Typic Haploxerepts, 30-50 % Slopes
Typic Xerorthents-Haploxerolls-Typic Xerochrepts	Typic Xerorthents, Cold-Haploxerolls, Cold-Typic Xerochrepts Complex, 45-85 % Slopes
Typic Xerorthents	Typic Xerorthents, Warm, 55-90 % Slopes
Urban Land-Delhi	Urban Land-Delhi
Urban Land-Lithic Xerorthents-Hambright-Castaic	Urban Land-Lithic Xerorthents-Hambright-Castaic
Urban Land-Rock Outcrop-Millsholm	Urban Land-Rock Outcrop-Millsholm
Urban Land-Sorrento-Hanford	Urban Land-Sorrento-Hanford
Urban Land-Tongva	Urban Land-Tongva Complex, 0-15 % Slopes
Urban Land-Tujunga-Soboba-Hanford	Urban Land-Tujunga-Soboba-Hanford
Urban Land-Xerorthents	Urban Land-Xerorthents, Landscaped Complex, 0-5 % Slopes
	Urban Land-Xerorthents, Landscaped Complex, 0-5 % Slopes
	Urban Land-Xerorthents, Landscaped, Complex, Rarely Flooded, 0-5 % Slopes
Urban Land-Xerorthents-Friant	Urban Land-Xerorthents-Friant Complex, 15-30 % Slopes
Vernalis	Vernalis Clay Loam, 0-2 % Slopes
	Vernalis Loam, 2-5 % Slopes
Vertic Xerochrepts	Vertic Xerochrepts, 5-50 % Slopes
Vina	Vina Gravelly Loam, 2-9 % Slopes
	Vina Loam, 0-2 % Slopes
	Vina Loam, 2-9 % Slopes
	Vina Silty Clay Loam, 2-9 % Slopes
Vista	Vista Coarse Sandy Loam, 15-30 % Slopes
	Vista Coarse Sandy Loam, 15-30 % Slopes, Eroded
	Vista Coarse Sandy Loam, 30-50 % Slopes
	Vista Coarse Sandy Loam, 30-50 % Slopes, Eroded
	Vista Coarse Sandy Loam, 9-15 % Slopes, Eroded
	Vista Family, 5-30 % Slopes
Vista-Fallbrook-Cieneba	Vista-Fallbrook-Cieneba
Vista-Trigo-Modesto	Vista-Trigo, Granitic Substratum-Modesto Families Complex, 40-70 % Slopes
Water	Water
Waterman-Springdale-Pacifico	Waterman-Springdale-Pacifico Families Complex, 30-70 % Slopes

Table 2. (cont.)

Formation Name	Original Soil Map Unit Name
Wilshire-Oak Glen	Wilshire-Oak Glen, Dry Families Association, 2-15 Percent Slopes
Winthrop-Lithic Xerorthents-Rock Outcrop	Winthrop Family, Very Stony-Lithic Xerorthents-Rock Outcrop Association, 15-70 % Slopes
Wyman	Wyman Cobbly Loam, 5-9 % Slopes
	Wyman Gravelly Loam, 2-9 % Slopes
	Wyman Gravelly Loam, 9-15 % Slopes
Xeralfic Arents	Xeralfic Arents, Loamy, 2-9 % Slopes
	Xeralfic Arents, Loamy, 9-15 % Slopes
Xerofluvents-Xerorthents-Riverwash	Xerofluvents-Xerorthents-Riverwash Complex, 0-15 % Slopes
Xerorthents	Xerorthents Loamy, Cut And Fill Areas, 15-30 % Slopes
	Xerorthents Loamy, Cut And Fill Areas, 9-15 % Slopes
	Xerorthents, 0-30 % Slopes
	Xerorthents, Landscaped, 0-9 % Slopes
Xerorthents-Green Bluff-Rock Outcrop	Xerorthents-Green Bluff Family-Rock Outcrop Complex, 15-50 % Slopes
Xerorthents-Urban Land-Balcom	Xerorthents-Urban Land-Balcom Complex, 0-15 % Slopes
	Xerorthents-Urban Land-Balcom Complex, 0-30 % Slopes
	Xerorthents-Urban Land-Balcom Complex, 15-30 % Slopes
	Xerorthents-Urban Land-Balcom Complex, 5-15 % Slopes
Xerorthents-Urban Land-Gazos	Xerorthents-Urban Land-Gazos Complex, 0-30 % Slopes
	Xerorthents-Urban Land-Gazos Complex, 15-30 % Slopes
	Xerorthents-Urban Land-Gazos Complex, 5-15 % Slopes
Xerorthents-Urban Land-Pachic Argixerolls	Xerorthents-Urban Land-Pachic Argixerolls, Gullied Complex, 0-30 % Slopes
Xerorthents-Urban Land- Saugus	Xerorthents-Urban Land-Saugus Complex, 15-30 % Slopes
Yolo	Yolo Clay Loam
	Yolo Loam
	Yolo Loam, 0-2 % Slopes
	Yolo Loam, 2-9 % Slopes
	Yolo Sandy Loam
Yorba	Yorba Cobbly Sandy Loam, 30-50 % Slopes
	Yorba Cobbly Sandy Loam, 9-30 % Slopes
	Yorba Cobbly Sandy Loam, 9-30 % Slopes, Eroded
	Yorba Gravelly Sandy Loam, 15-30 % Slopes
	Yorba Gravelly Sandy Loam, 2-9 % Slopes
	Yorba Gravelly Sandy Loam, 9-15 % Slopes
Yorba-Millsholm-Stonyford	Yorba-Millsholm-Stonyford Families Association, 30-60 % Slopes
Yorba-Modjeska-Morical	Yorba-Modjeska-Morical Families Association, 30-60 % Slopes
Zamora	Zamora Clay Loam, 2-9 % Slopes
	Zamora Loam, 2-9 % Slopes
	Zamora Loam, 9-15 % Slopes
	Zamora Loam, 9-15 % Slopes, Eroded
Zamora-Urban Land-Ramona	Zamora-Urban Land-Ramona
Zumaridge-Kawenga	Zumaridge-Kawenga Association, 15-50 % Slopes
	Zumaridge-Kawenga Association, 30-75 % Slopes

Table 2. (cont.)

Formation Name	Original Soil Map Name
Zumaridge-Rock Outcrop	Zumaridge-Rock Outcrop Complex, Bouldery, 30-75 % Slopes
Zumaridge-Rock Outcrop-Sumiwawa	Zumaridge-Rock Outcrop-Sumiwawa Complex, Very Stony, 15-50 % Slopes
Zumaridge-Sapwi-Kawenga	Zumaridge-Sapwi-Kawenga Association, Bouldery, 30-75 % Slopes

Table 3. List of major soil units in the first (topmost) soil horizon in Green Visions Plan study area grouped by dominant soil texture.

Soil Map Unit Texture	Original Soil Map Unit Name
Clay	Alo clay, 15-30 % slopes
	Alo clay, 30-50 % slopes
	Alo clay, 9-15 % slopes
	Alo variant clay, 15-30 % slopes
	Alo variant clay, 30-50 % slopes
	Alo variant clay, 9-15 % slopes
	Altamont Clay
	Bosanko clay, 15-30 % slopes
	Bosanko clay, 30-50 % slopes
	Bosanko clay, 9-15 % slopes
	Cibo clay, 15-30 % slopes
	Cibo clay, 5-15 % slopes
	Cropley association, 2-15 % slopes
	Cropley clay, 0-2 % slopes
	Cropley clay, 2-9 % slopes
	Cropley clay, calcareous variant
	Cropley, coastal-Urban land-Haploxererts complex, 0-30 % slopes
	Cropley-Urban land complex, 0-2 % slopes
	Cropley-Urban land complex, 2-9 % slopes
	Diablo clay, 15-30 % slopes
	Diablo clay, 30-50 % slopes
	Diablo clay, 9-15 % slopes
	Diablo-Altamont-Henneke families association, 10-60 % slopes
	Dublin Clay
	Kayiwish association, 0-9 % slopes
	Kayiwish association, 2-30 % slopes
	Kayiwish association, 9-30 % slopes
	Omni clay, drained
	Soper-Fontana-Calleguas-Balcom-Anaheim
Clay Loam	Anaheim clay loam, 50-75 % slopes
	Ayar clay loam, 5-15 % slopes
	Balcom clay loam, 15-30 % slopes
	Balcom clay loam, 30-50 % slopes
	Balcom clay loam, 9-15 percent slopes
	Balcom-Rock outcrop complex, 15-50 % slopes
	Botella clay loam, 2-9 % slopes
	Calcixerollic Xerochrepts-Calleguas family-Modesto family, moderately deep complex, 30-60 % slopes
	Calleguas clay loam, 50-75 % slopes, eroded
	Chualar clay loam, 2-9 percent slopes
	Conejo-Urban land complex, 0-2 % slopes
	Conejo-Urban land complex, 2-9 % slopes
	Danville-Urban land complex, 0-9 % slopes
	Danville-Urban land complex, 9-15 % slopes

Soil Map Unit Texture	Original Soil Map Unit Name
	Fontana clay loam, 15-30 % slopes
	Fontana clay loam, 30-50 % slopes
	Gabino gravelly clay loam 15-50 % slopes
	Gazos clay loam, 30-50 % slopes
	Gilroy clay loam, 15-30 % slopes
	Gilroy clay loam, 9-15 % slopes
	Gilroy very rocky clay loam, 15-50 % slopes
	Hambright rocky clay loam, 30-50 % slopes
	Lopez shaly clay loam, 30-50 % slopes
	Los Osos clay loam, 15-30 % slopes, eroded
	Los Osos clay loam, 30-50 % slopes
	Los Osos clay loam, 9-15 % slopes, eroded
	Mocho clay loam, 0-2 % slopes
	Mocho clay loam, 2-5 % slopes
	Nacimeinto clay loam, 15-30 % slopes
	Nacimiento clay loam, 30-50 % slopes
	Nacimiento clay loam, 9-30 % slopes
	Rincon clay loam, 15-30 % slopes
	Rincon clay loam, 2-9 % slopes
	Rincon clay loam, 9-15 % slopes
	Salinas clay loam, 0-2 % slopes
	Salinas clay loam, 2-9 % slopes
	San Benito clay loam, 15-30 % slopes, eroded
	San Benito clay loam, 30-50 % slopes, eroded
	San Benito clay loam, 50-75 % slopes
	San Benito clay loam, 9-15 % slopes, eroded
	Santa Lucia shaly silty clay loam, 15-30 % slopes
	Santa Lucia shaly silty clay loam, 30-50 % slopes
	Santa Lucia shaly silty clay loam, 50-75 % slopes
	Sespe clay loam, 30-50 % slopes
	Sespe clay loam, 50-75 % slopes
	Soper-Calleguas-Bosanko-Alo
	Sorrento clay loam, 0-2 % slopes
	Sorrento clay loam, 2-5 % slopes
	Sorrento clay loam, 2-9 % slopes
	Sorrento clay loam, heavy variant, 2-9 % slopes
	Sorrento clay loam, heavy variant, 9-15 % slopes
	Stonyford-Millsholm families complex, 30-70 % slopes
	Vernalis clay loam, 0-2 % slopes
	Zamora clay loam, 2-9 % slopes
Clay/Adobe	Altamont Clay Adobe
	Diablo Clay Adobe
	Montezuma Clay Adobe
Clay/Loam	Altamont Clay Loam
	Chino Clay Loam
	Hanford Clay Loam
	Ramona Clay Loam
	Yolo Clay Loam

Soil Map Unit Texture	Original Soil Map Unit Name
Loam	Agua Dulce stony loam, 30-50 % slopes
	Altamont Loam
	Anaheim clay loam, 15-30 % slopes
	Anaheim clay loam, 30-50 % slopes
	Anaheim loam, 15-30 % slopes
	Anaheim loam, 30-50 % slopes
	Anaverde loam, 15-30 % slopes
	Anaverde rocky loam, 30-50 % slopes
	Azule gravelly loam, 5-9 % slopes
	Azule loam, 0-5 % slopes
	Azule loam, 2-9 % slopes, eroded
	Azule loam, 9-15 % slopes
	Bakeoven family-Lithic Xerorthents-Sur family, moderately deep complex, 45-80 % slopes
	Bakeoven-Sur, moderately deep families complex, 50-75 % slopes
	Blasingame-Rock outcrop complex, 9-30 % slopes
	Botella loam, 2-9 % slopes
	Calleguas shaly loam, 30-50 % slopes
	Calleguas shaly loam, 9-30 % slopes, eroded
	Calleguas-Arnold complex, 30-50 % slopes, eroded
	Camarillo loam, coastal, 0-2 % slopes
	Caperton-Baywood families complex, 45-80 % slopes
	Caperton-Capistrano families complex, 35-80 % slopes
	Caperton-San Andreas-Modesto families complex, 15-60 % slopes
	Caperton-Trigo, granitic substratum-Lodo families complex, 50-85 % slopes
	Chilao family, 20-60 % slopes
	Chilao-Trigo, granitic substratum-Lodo families complex, 55-85 % slopes
	Chino loam
	Chumash-Boades-Malibu association, 30-75 % slopes
	Chumash-Boades-Malibu association, 5-15 %slopes
	Cotharin-Talepop-Urban land complex, 0-50 % slopes
	Cropley, coastal-Xerorthents, landscaped-Urban land complex, 0-9 % slopes
	Fluvaquents-Riverwash complex, 0-5 % slopes
	Garretson gravelly loam, 2-9 % slopes
	Garretson loam, 0-2 % slopes
	Garretson loam, 2-9 % slopes
	Gazos gravelly loam, coastal, 30-75 % slopes
	Godde loam, 15-30 % slopes
	Godde rocky loam, 30-50 % slopes
	Hambright very rocky loam, 15-75 % slopes
	Hanford Loam
	Haploxerolls, shallow-Trigo family, dry-Haploxeralfs complex, 90 % slopes
	Haploxerolls, warm-Vista family association, 2-30 % slopes
	Haploxerols, shallow-Lithic Xerorthents, warm complex, 45-75 % slopes
	Holland Loam
	Las Posas loam, 9-30 % slopes
	Las Posas-Toomes rocky loams, 30-50 % slopes
	Lithic Xerochrepts-Lithic Haploxeralfs-Rock outcrop complex, 30-80 % slopes

Soil Map Unit Texture	Original Soil Map Unit Name
	Lockwood-Urban land complex, 0-15 % slopes
	Lockwood-Urban land complex, 0-9 % slopes
	Lodo family-Mollic Haploxeralfs association, 15-50 % slopes
	Lodo rocky loam, 30-50 % slopes
	Lodo-Modesto families complex, 30-70 %slopes
	Lodo-Tujunga families association, 2-50 %slopes
	Malibu loam, 15-30 % slopes, eroded
	Malibu-Chumash-Boades association, 15-50 % slopes
	Metz loam, 0-2 % slopes
	Metz loam, 2-5 % slopes
	Millsholm loam, 15-50 % slopes
	Millsholm loam, 30-50 % slopes
	Millsholm rocky loam, 15-30 % slopes, eroded
	Millsholm rocky loam, 30-50 % slopes, eroded
	Millsholm very rocky loam, 30-75 % slopes
	Mipolomol-Topanga association, 30-75 % slopes
	Mipolomol-Topanga-Rock outcrop complex, 30-75 % slopes
	Mocho gravelly loam, 2-9 % slopes
	Mocho loam, 0-2 % slopes
	Mocho loam, 2-9 % slopes
	Mocho-Urban land complex, 0-2 % slopes
	Mocho-Urban land complex, 2-9 % slopes
	Modesto, moderately deep-Trigo families complex, 25-75 % slopes
	Modjeska gravelly loam, 9-15 % slopes
	Morical-Supan-Greenbluff families association, 10-60 % slopes
	Oak Glen loam, 0-2 % slopes
	Oak Glen loam, 2-9 % slopes
	Ojai loam, 15-30 % slopes
	Ojai loam, 2-9 % slopes
	Ojai loam, 30-50 % slopes
	Ojai loam, 30-50 % slopes, eroded
	Ojai loam, 9-15 % slopes
	Ojai loam, thin surface variant, 30-50 % slopes
	Ojai-Zamora loams, 15-30 % slopes
	Olete-Kilburn families, moderately deep-Mollic Haploxeralfs, cool complex, 40-70 % slopes
	Olete-Kilburn-Etsel families complex, 50-80 % slopes
	Olete-Kilburn-Goulding families complex, 30-50 % slopes
	Osito-Trigo families complex, 25-55 % slopes
	Pachic Argixerolls, coastal, 30-75 % slopes
	Pico loam, sandy substratum, 0-2 % slopes
	Pismo-Chilao-Shortcut families complex, 45-80 % slopes
	Pleasanton Loam
	Ramona Loam
	Ramona loam, 2-5 % slopes
	Ramona loam, 5-9 % slopes
	Saugus loam, 15-30 % slopes
	Saugus loam, 30-50 % slopes

Soil Map Unit Texture	Original Soil Map Unit Name
	Saugus loam, 30-50 % slopes, eroded
	Sobrante-Exchequer-Cieneba
	Soper cobbly loam, 15-50 % slopes
	Soper gravelly loam, 15-30 % slopes
	Soper gravelly loam, 30-50 % slopes, eroded
	Soper loam, 15-30 % slopes
	Soper loam, 15-30 % slopes, eroded
	Soper loam, 30-50 % slopes
	Soper-Rock outcrop complex, 30-75 % slopes
	Sorrento loam, 0-2 % slopes
	Sorrento loam, 2-5 % slopes
	Sorrento loam, 2-9 % slopes
	Stukel-Olete families association, 50-100 % slopes
	Stukel-Sur-Winthrop families complex, 60-100 % slopes
	Talepop-Rock outcrop complex, 30-75 % slopes
	Topanga-Mipolomol-Sapwi association, 30-75 % slopes
	Trigo family, granitic substratum, 60-90 % slopes
	Trigo, granitic substratum-Exchequer families-Rock outcrop complex, 30-60 % slopes
	Trigo, granitic substratum-Exchequer families-Rock outcrop complex, 60-100 % slopes
	Trigo, granitic substratum-Green Bluff-Supan families association, 15-60 % slopes
	Trigo, granitic substratum-Modjeska families association, 5-60 % slopes
	Trigo, granitic substratum-Pismo families complex, 20-60 % slopes
	Typic Haploxeralfs, 3-50 % slopes
	Urban land-Lithic Xerorthents-Hambright-Castaic
	Urban land-Rock outcrop-Millsholm
	Vernalis loam, 2-5 % slopes
	Vina gravelly loam, 2-9 % slopes
	Vina loam, 0-2 % slopes
	Vina loam, 2-9 % slopes
	Wyman cobbly loam, 5-9 % slopes
	Wyman gravelly loam, 2-9 % slopes
	Wyman gravelly loam, 9-15 % slopes
	Xerorthents, landscaped, 0-9 % slopes
	Xerorthents-Urban land-Balcom complex, 0-15 % slopes
	Xerorthents-Urban land-Balcom complex, 0-30 % slopes
	Xerorthents-Urban land-Gazos complex, 0-30 % slopes
	Xerorthents-Urban land-Pachic Argixerolls, gullied complex, 0-30 % slopes
	Yolo Loam
	Yolo loam, 0-2 % slopes
	Yolo loam, 2-9 % slopes
	Yorba-Modjeska-Morical families association, 30-60 % slopes
	Zamora loam, 2-9 % slopes
	Zamora loam, 9-15 % slopes
	Zamora loam, 9-15 % slopes, eroded
Loamy sand	Abaft-Beaches association, 0-5 % slopes
	Abaft-Beaches-Urban land complex, 0-5 % slopes
	Cajon loamy sand, 2-9 % slopes

Soil Map Unit Texture	Original Soil Map Unit Name
	Corralitos loamy sand
	Corralitos loamy sand, 0-2 % slopes
	Corralitos loamy sand, 2-9 % slopes
	Cortina cobbly sandy loam, 2-9 % slopes
	Hueneme loamy sand, loamy substratum
	Hueneme sandy loam
	Lithic Xerorthents, dry-Springdale families, dry-Rubble land association, 50-100 % slopes
	Marina loamy sand, 2-9 % slopes
	Metz loamy fine sand, 0-2 % slopes
	Metz loamy fine sand, 2-9 % slopes
	Metz loamy sand
	Metz loamy sand, 0-2 % slopes
	Metz loamy sand, 2-9 % slopes
	Metz loamy sand, loamy substratum, 0-2 % slopes
	Metz loamy sandy, moderately fine substratum
	Pacifico family-Xerothents complex, 50-90 % slopes
	Pacifico-Preston families complex, 15-50 % slopes
	Pismo family-Rock outcrop complex, 50-80 % slopes
	Sandy alluvial land
	Shortcut family, dry-Lithic Xerorthents, warm-Rock outcrop complex, 50-85 % slopes
	Soboba cobbly loamy sand, 0-15 % slopes
	Soboba cobbly loamy sand, 2-5 % slopes
	Soboba gravelly loamy sand, 0-2 % slopes
	Soboba gravelly loamy sand, 0-5 % slopes
	Soboba gravelly loamy sand, 2-9 % slopes
	Sumiwawa-Hipuk-Rock outcrop complex, 30-75 % slopes
	Tujunga gravelly loamy sand, 0-9 % slopes
	Tujunga loamy sand, 0-5 % slopes
	Tujunga-Capistrano families association, 2-20 % slopes
	Tujunga-Pismo families association, 15-70 % slopes
	Waterman-Springdale-Pacifico families complex, 30-70 % slopes
	Winthrop family, very stony-Lithic Xerorthents-Rock outcrop association, 15-70 % slopes
	Yorba cobbly sandy loam, 9-30 % slopes
	Yorba cobbly sandy loam, 9-30 % slopes, eroded
Moderately decomposed plant material	Sumiwawa-Rock outcrop-Zumaridge complex, very stony, 30-75 % slopes
	Tongva-Cotharin-Rock outcrop complex, 30-75 % slopes
	Zumaridge-Kawenga association, 15-50 % slopes
	Zumaridge-Kawenga association, 30-75 % slopes
	Zumaridge-Rock outcrop complex, bouldery, 30-75 % slopes
	Zumaridge-Rock outcrop-Sumiwawa complex, very stony, 15-50 % slopes
	Zumaridge-Sapwi-Kawenga association, bouldery, 30-75 % slopes
Sandy loam	Arnold sand, 9-50 % slopes
	Avawatz-Oak Glen, dry families association, 2-15 % slopes
	Beaches
	Coastal beaches
	Gravel pits

Soil Map Unit Texture	Original Soil Map Unit Name
	Hanford Sand
	Oakley Fine Sand
	Pits
	Pits and dumps
	Riverwash
	Sandy alluvial land
	Soboba gravelly sand, cool, 2-9 % slopes
	Tujunga Fine Sand
	Tujunga Sand
	Tujunga sand, cool, 2-9 % slopes
	Tujunga-Urban land complex, 0-2 % slopes
	Urban land-Delhi
	Wilshire-Oak Glen, dry families association, 2-15 % slopes
Sandy loam	Agua Dulce-Los Robles-Modjeska families association, 10-60 % slopes
	Amargosa rocky coarse sandy loam, 9-55 % slopes, eroded
	Anacapa gravelly sandy loam, 2-9 % slopes
	Anacapa sandy loam, 0-2 % slopes
	Anacapa sandy loam, 2-9 % slopes
	Anacapa-Urban land complex, 0-2 % slopes
	Avawatz-Oak Glen association, gently sloping
	Balder family-Mollic Haploxeralfs, cool-Lithic Haploxeralfs complex, 5-60 % slopes
	Balder family-Xerorthents complex, 5-60 % slopes
	Blasingame stony loam, 9-30 % slopes
	Camarillo loam
	Camarillo loam, sandy substratum
	Camarillo sandy loam
	Capistrano sandy loam, 2-9 % slopes
	Capistrano sandy loam, 9-15 % slopes
	Capistrano-Urban land complex, 0-2 % slopes
	Capistrano-Urban land complex, 0-9 % slopes
	Capistrano-Urban land complex, 2-9 % slopes
	Castaic and Saugus soils, 30-75 % slopes, eroded
	Chesterton coarse sandy loam, 5-15 % slopes, eroded
	Chesterton sandy loam, 9-30 % slopes, severely eroded
	Chualar-Urban land complex, 2-9 % slopes
	Cieneba sandy loam, 15-30 % slopes
	Cieneba sandy loam, 30-75 % slopes, eroded
	Cieneba-Friant sandy loams
	Cieneba-Rock outcrop complex
	Cieneba-Rock outcrop complex, 30-75 % slopes
	Cortina sandy loam, 0-2 % slopes
	Cortina sandy loam, 2-9 % slopes
	Cortina stony sandy loam, 2-9 % slopes
	Cortina very stony sandy loam, 9-15 % slopes
	Cumulic Haploxerolls, 0-9 % slopes
	Elder fine sandy loam, coastal, 0-2 % slopes
	Exchequer family, 30-60 % slopes
	Friant fine sandy loam, 50-75 % slopes

Soil Map Unit Texture	Original Soil Map Unit Name
	Garretson very fine sandy loam, 2-9 % slopes
	Gaviota rocky sandy loam, 15-30 % slopes, eroded
	Gaviota rocky sandy loam, 15-50 % slopes
	Gaviota rocky sandy loam, 30-50 % slopes, eroded
	Gaviota sandy loam, 30-50 % slopes
	Gaviota sandy loam, 9-30 % slopes
	Gaviota stony sandy loam, 30-50 % slopes
	Gaviota-Rock outcrop association, 50-100 % slopes
	Gaviota-Rock outcrop complex
	Gorman sandy loam, 15-30 % slopes, eroded
	Gorman sandy loam, 30-50 % slopes, eroded
	Gorman sandy loam, 9-15 % slopes
	Gorman sandy loam, 9-15 % slopes, eroded
	Grangeville fine sandy loam
	Green Bluff-Hohmann families-Xerorthents complex, 15-60 % slopes
	Greenfield sandy loam, 0-2 % slopes
	Greenfield sandy loam, 2-9 % slopes
	Greenfield sandy loam, 2-9 % slopes, eroded
	Greenfield sandy loam, 9-15 % slopes, eroded
	Hades-Ginser-Ola families association, 10-30 % slopes
	Hanford coarse sandy loam, 0-2 % slopes
	Hanford coarse sandy loam, 2-9 % slopes
	Hanford coarse sandy loam, 9-15 % slopes
	Hanford family, 3-25 % slopes
	Hanford Fine Sandy Loam
	Hanford gravelly sandy loam, 2-9 % slopes
	Hanford Sandy Loam
	Hanford sandy loam, 0-2 % slopes
	Hanford sandy loam, 2-9 % slopes
	Hanford sandy loam, calcareous variant, 2-9 % slopes
	Hanford sandy loam, cool, 2-9 % slopes
	Haploxerolls-Riverwash association, 2-25 % slopes
	Hohmann-Greenbluff-Konocti families association, 30-60 % slopes
	Holland Sandy Loam
	Hueneme fine sandy loam, drained
	Huerhuero very fine sandy loam, 0-5 % slopes
	Huerhuero very fine sandy loam, 5-9 % slopes, eroded
	Huerhuero very fine sandy loam, 9-15 % slopes, eroded
	Huerhuero very fine sandy loam, 9-30 % slopes, severely eroded
	Inks-Lodo-Agua Dulce families complex, 30-80 % slopes
	Kilburn-Wrentham-Supan families association, 10-30 % slopes
	Kilburn-Wrentham-Supan families association, 30-60 % slopes
	Kimball sandy loam, 9-15 % slopes, eroded
	Lodo-Botella families-Rock outcrop association, 30-60 % slopes
	Lodo-Livermore-Chualar families association, 30-60 % slopes
	Lodo-Modjeska-Botella families association, 10-70 % slopes
	Los Gatos-Kilburn-Panamint families association, 10-30 % slopes
	Los Gatos-Kilburn-Panamint families association, 30-60 % slopes

Soil Map Unit Texture	Original Soil Map Unit Name
	Los Robles-Trigo families-Orthents association, 30-60 % slopes
	Madera Fine Sandy Loam
	Millerton-Millsholm families-Rock outcrop complex, 30-80 % slopes
	Millerton-Modjeska familes association, 30-80 % slopes
	Millerton-Reliz-Modjeska families association, 40-70 % slopes
	Millsholm-Reliz families-Rock outcrop association, 40-65 % slopes
	Mocho loam, 0-2 % slopes
	Mocho loam, 2-9 % slopes
	Mocho sandy loam, 0-2 % slopes
	Modjeska-Lodo families association, 40-80 % slopes
	Modjeska-Modesto families association, 30-60 % slopes
	Mollic Haploxeralfs, 2-50 % slopes
	Mollic Haploxeralfs, cool-Xerorthents, dry-Green Bluff family, dry association, 5-60 % slopes
	Myford sandy loam, 15-30 % slopes
	Myford sandy loam, 2-9 % slopes
	Myford sandy loam, 2-9 % slopes, eroded
	Myford sandy loam, 9-15 % slopes
	Myford sandy loam, 9-30 % slopes, eroded
	Myford sandy loam, thick surface, 0-2 % slopes
	Myford sandy loam, thick surface, 2-9 % slopes
	Oak Glen family, 2-35 % slopes
	Oak Glen gravelly sandy loam, 2-9 % slopes
	Oak Glen sandy loam, 0-2 % slopes
	Oak Glen sandy loam, 2-9 % slopes
	Oak Glen-Supan-Hagen families complex, 0-10 % slopes
	Oak Glen-Tollhouse families complex, 30-70 % slopes
	Oak Glen-Wrentham-Kilburn families complex, 30-60 % slopes
	Ojai stony fine sandy loam, 15-30 % slopes, eroded
	Ojai stony fine sandy loam, 2-15 % slopes, eroded
	Ojai very fine sandy loam, 0-2 % slopes
	Ojai very fine sandy loam, 2-9 % slopes, eroded
	Ojai very fine sandy loam, 9-15 % slopes, eroded
	Olete-Goulding families-Rubble land association, 50-100 % slopes
	Olete-Kilburn-Goulding families complex, 30-50 % slopes
	Orthents-Fluvents complex, 0-15 % slopes
	Orthents-Fluvents complex, dry, 0-15 % slopes
	Pico sandy loam, 0-2 % slopes
	Pico sandy loam, 2-9 % slopes
	Pismo-Trigo, dry-Exchequer, dry families complex, 30-70 % slopes
	Ramona coarse sandy loam, 2-5 % slopes
	Ramona coarse sandy loam, 5-9 % slopes
	Ramona coarse sandy loam, 9-15 % slopes
	Ramona Fine Sandy Loam
	Ramona gravelly sandy loam, 2-9 % slopes
	Ramona gravelly sandy loam, 9-30 % slopes
	Ramona Sandy Loam
	Ramona sandy loam, 9-30 % slopes, eroded

Soil Map Unit Texture	Original Soil Map Unit Name
	Reliz-Trigo families-Badlands association, 40-90 % slopes
	Rincon-Modesto-Los Osos families association, 30-60 % slopes
	Rock outcrop-Friant complex, 50-75 % slopes
	San Andreas sandy loam, 15-30 % slopes
	San Andreas sandy loam, 30-50 % slopes
	San Emigdio fine sandy loam, 0-2 % slopes
	San Emigdio fine sandy loam, 2-9 % slopes
	San Emigdio fine sandy loam, moderately fine substratum, 0-2 % slopes
	San Emigdio-Urban land complex, 0-2 % slopes
	Saugus sandy loam, 30-50 % slopes, eroded
	Saugus sandy loam, 5-30 % slopes
	Sheridan sandy loam, 30-50 % slopes
	Sheridan sandy loam, 30-50 % slopes, eroded
	Soper gravelly sandy loam, 15-30 % slopes
	Soper gravelly sandy loam, 30-50 % slopes
	Temescal-Rock land complex, 30-50 % slopes
	Tollhouse-Knutsen-Stukel families complex, 30-70 % slopes
	Tollhouse-Stukel-Wrentham families complex, 60-90 % slopes
	Trigo family, dry-Lithic Xerorthents, warm complex, 50-80 % slopes
	Trigo family-Lithic Xerorthents, warm complex, 50-75 % slopes
	Trigo-Modesto families-Badlands association, 45-90 % slopes
	Tujunga Fine Sandy Loam
	Typic Xerorthents, cold-Haploxerolls, cold-Typic Xerochrepts complex, 45-85 % slopes
	Typic Xerorthents, warm, 55-90 % slopes
	Vista coarse sandy loam, 15-30 % slopes
	Vista coarse sandy loam, 15-30 % slopes, eroded
	Vista coarse sandy loam, 30-50 % slopes
	Vista coarse sandy loam, 30-50 % slopes, eroded
	Vista coarse sandy loam, 9-15 % slopes, eroded
	Vista family, 5-30 % slopes
	Vista-Fallbrook-Cieneba
	Vista-Trigo, granitic substratum-Modesto families complex, 40-70 % slopes
	Xerofluvents-Xerorthents-Riverwash complex, 0-15 % slopes
	Xerorthents-Green Bluff family-Rock outcrop complex, 15-50 % slopes
	Yolo Sandy Loam
	Yorba cobbly sandy loam, 30-50 % slopes
	Yorba gravelly sandy loam, 15-30 % slopes
	Yorba gravelly sandy loam, 2-9 % slopes
	Yorba gravelly sandy loam, 9-15 % slopes
	Yorba-Millsholm-Stonyford families association, 30-60 % slopes
Silt loam	Bolsa silt loam
	Bolsa silt loam, drained
	Calcic Argixerolls, 30-75 % slopes
	Calcic Haploxerepts-Mollic Haploxeralfs association, 30-75 % slopes
	Chino silt loam
	Garretson silt loam, calcareous variant, 2-5 % slopes
	Trigo family-Calcixerollic Xerochrepts-Vista family complex, 30-70 % slopes

Soil Map Unit Texture	Original Soil Map Unit Name
	Trigo-Calleguas families-Haploxeralfs complex, 30-70 % slopes
	Trigo-Calleguas families-Rock outcrop complex, 60-100 % slopes
	Trigo-Lodo families-Haploxerolls, warm complex, 50-90 % slopes
	Trigo-Millsholm families-Rock outcrop complex, 45-90 % slopes
	Trigo-Modesto-San Andreas families association, 15-70 % slopes
Silt/Loam	Chino Silt Loam
Silty clay	Vertic Xerochrepts, 5-50 % slopes
	Sulfic Fluvaquents, frequently flooded, 0-1 % slopes
Silty clay loam	Balcom silty clay loam, 15-30 % slopes
	Balcom silty clay loam, 30-50 % slopes
	Balcom silty clay loam, 50-75 % slopes
	Balcom silty clay loam, 9-15 % slopes
	Balcom-Balcom, dark surface association, 30-75 % slopes
	Bolsa silty clay loam
	Bolsa silty clay loam, drained
	Castaic and Saugus soils, 30-65 % slopes, severely eroded
	Castaic silty clay loam, 2-9 % slopes
	Castaic silty clay loam, 9-15 % slopes
	Castaic-Balcom complex, 15-30 % slopes
	Castaic-Balcom complex, 30-50 % slopes, eroded
	Castaic-Balcom complex, 50-65 % slopes, eroded
	Castaic-Balcom complex, 9-15 % slopes, eroded
	Castaic-Balcom silty clay loams, 15-30 % slopes
	Castaic-Balcom silty clay loams, 30-50 % slopes
	Castaic-Balcom silty clay loams, 50-65 % slopes, eroded
	Castaic-Balcom silty clay loams, 9-15 % slopes
	Chino silty clay loam, drained
	Danville-Urban land complex, 0-2 % slopes
	Gazos silty clay loam, 15-30 % slopes
	Gazos silty clay loam, 30-50 % slopes
	Gazos silty clay loam, 50-75 % slopes
	Gazos-Balcom complex, 30-50 % slopes
	Linne silty clay loam, 15-30 % slopes, eroded
	Linne silty clay loam, 15-50 % slopes
	Linne silty clay loam, 30-50 % slopes, eroded
	Linne silty clay loam, 9-15 % slopes
	Linne silty clay loam, 9-15 % slopes, eroded
	Linne-Los Osos-Haploxerepts association, 30-75 % slopes
	Nacimiento silty clay loam, 15-30 % slopes, eroded
	Nacimiento silty clay loam, 30-50 % slopes
	Nacimiento silty clay loam, 50-75 % slopes
	Nacimiento silty clay loam, 9-15 % slopes, eroded
	Pacheco silty clay loam
	Pacheco silty clay loam, 0-2 % slopes
	Rincon silty clay loam, 15-30 % slopes, eroded
	Rincon silty clay loam, 2-9 % slopes
	Rincon silty clay loam, 9-15 % slopes, eroded
	Rincon silty clay loam, 9-30 % slopes, severely eroded

Soil Map Unit Texture	Original Soil Map Unit Name
	Sorrento silty clay loam, 0-2 % slopes Sorrento silty clay loam, 2-9 % slopes Typic Haploxerepts, 15-30 % slopes Typic Haploxerepts, 30-50 % slopes Vina silty clay loam, 2-9 % slopes
Slightly de-composed plant material	Cotharin clay loam, 30-75 % slopes Cotharin loam, 30-75 % slopes, dry Cotharin loam-Rock outcrop complex, very bouldery, 30-75 % slopes Cotharin-Rock outcrop-Tongva complex, 30-75 % slopes Cotharin-Talepop association, 15-50 % slopes Cotharin-Talepop association, 30-75 % slopes Sapwi loam, 30-75 % slopes
Undefined	Coastal Beach Rough broken land Riverwash Tidal Marsh Water
Unweathered bedrock	Igneous rock land Rock land Rock outcrop Rock outcrop-Chilao family-Haploxerolls, warm association, 15-20 % slopes Rock outcrop-Gaviota complex, 30-75 percent slopes Rock outcrop-Lithic Xerorthents-Rubble land association, 60-120 % slopes Sedimentary Rock Land
Variable	Fill land Gullied land Landslides Rough broken land Terrace escarpments Tidal flats Urban land-Sorrento-Hanford Urban land-Tujunga-Soboba-Hanford Urban land-Xerorthents-Friant complex, 15-30 % slopes Xeralfic arents, loamy, 2-9 % slopes Xeralfic arents, loamy, 9-15 % slopes Xerorthents, loamy, cut and fill areas, 15-30 % slopes Xerorthents, loamy, cut and fill areas, 9-15 % slopes Xerorthents, 0 to 30 percent slopes Xerorthents-Urban land-Balcom complex, 5-15 % slopes Xerorthents-Urban land-Gazos complex, 15-30 % slopes Xerorthents-Urban land-Gazos complex, 5-15 % slopes Xerorthents-Urban land-Saugus complex, 15-30 % slopes Zamora-Urban land-Ramona
Weathered bedrock	Badland