



Town of Danville 2023-2031 Housing Element Update Danville, Contra Costa County, California

Aquatic Resources Technical Report



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1. INTRODUCTION

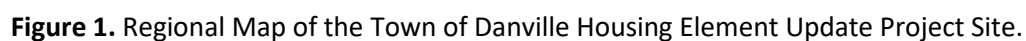
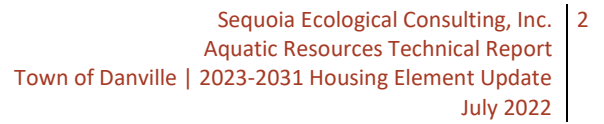
Sequoia Ecological Consulting, Inc. (Sequoia) has prepared this Aquatic Resources Technical Report for the proposed Town of Danville 2023-2031 Housing Element Update Project located at multiple locations within the Town of Danville city limits and portions of unincorporated Contra Costa County, California (Figures 1 and 2). The Project will evaluate locations for construction of additional residential units with varying densities, as discussed below in Section 3 (Project Description). Sequoia's preliminary hydrology analysis focused on all sub areas within the proposed project (Figure 2; Table 1). The survey was performed to determine if aquatic features occur on the project site that would potentially be regulated as waters of the United States and/or State. This analysis was primarily based on the presence of hydrology, wetland soils, and/or wetland plant indicators. This level of analysis does not conform to the level of detail required for a formal wetland delineation and was not performed in accordance with the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (USACE Manual; Environmental Laboratory 1987) and/or *Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (Arid West Manual; USACE 2008). Accordingly, this report is not suitable for submittal to the USACE. The results of our literature research and field reconnaissance are provided in the sections below.

2. LOCATION AND SETTING

The proposed project is located at multiple locations in the Town of Danville and portions of unincorporated Contra Costa County, California (Figures 1 and 2). The project site encompasses all land within the Town of Danville (approximately 11,600 acres) and an additional approximately 325 acres in unincorporated Contra Costa County located within the Danville Sphere of Influence¹. Danville is characterized by its semi-rural ambiance, presence of single and multiple family housing, proximity to employment centers in the Bay Area, and its scenic beauty. The Town of Danville is bordered by the unincorporated Town of Alamo and Blackhawk community to the north, the City of San Ramon and unincorporated Contra Costa to the south, Las Trampas Regional Wilderness Park to the west, and the Diablo Range to the east.

The project site is predominately urban and flat along the valley floor and is bisected by Interstate 680 with sub areas located immediately adjacent to major thoroughfares (Figures 1 and 2). Sub areas located within the valley bottom and margins of hillsides along the western and eastern project boundaries are situated within dense and semi-dense residential and commercial zones, with low-density residential located further up the hillsides. The project site is characterized as anthropogenic, ruderal, non-native annual grassland, orchard, riparian woodland, and mixed oak woodland.

¹ A sphere of influence is a planning boundary outside of an agency's legal boundary (such as the city limit line) that designates the agency's probable future boundary and service area.



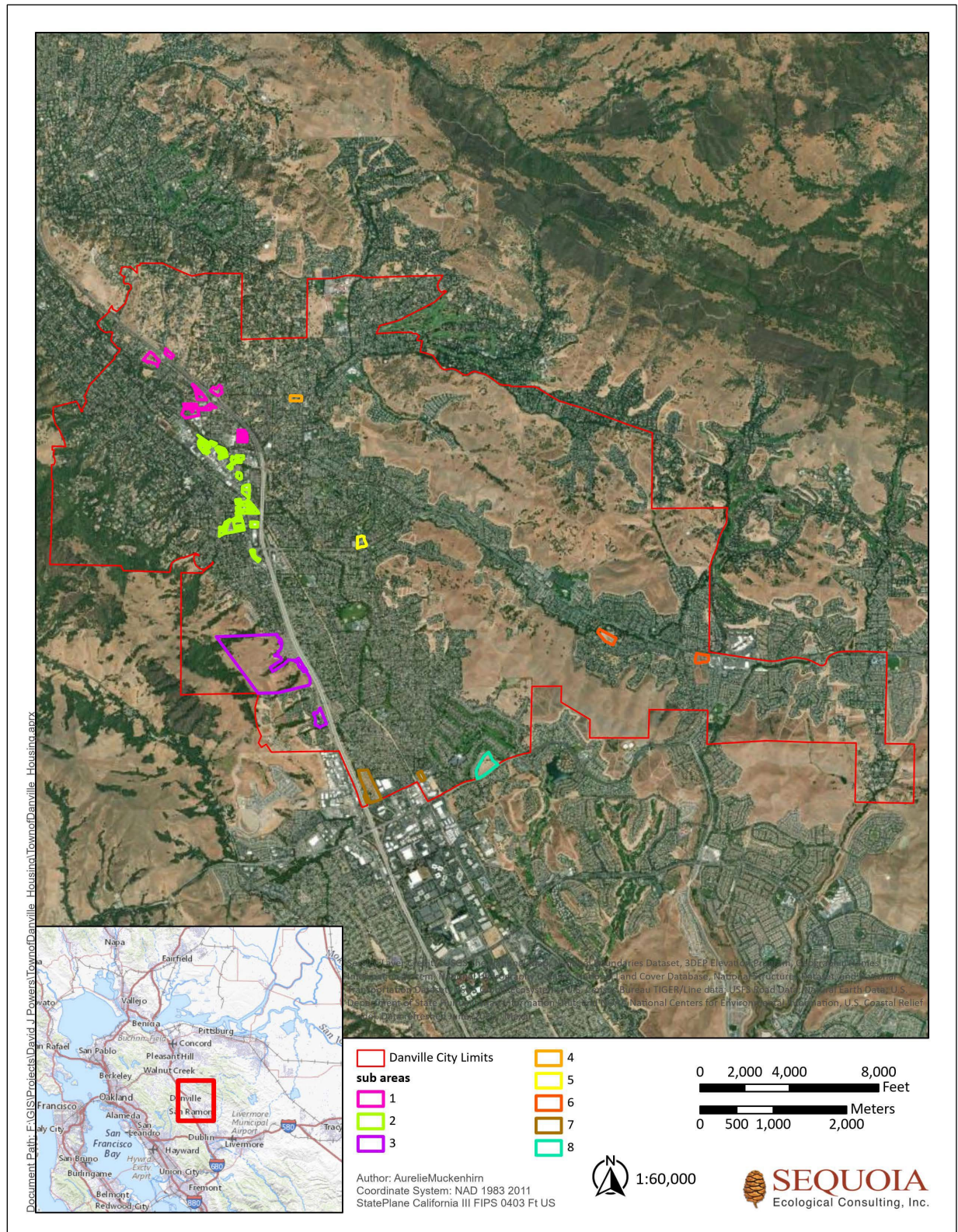


Figure 2. Location Map of the Town of Danville Housing Element Update Project Site.



3. PROJECT DESCRIPTION

The proposed project consists of future development of land parcels in the Town of Danville (Appendix A). This land is currently identified as being used for residential, commercial, mixed use, public, and open space purposes. As mandated by State law, the proposed project involves the Town of Danville's preparation of its 2023-2031 Housing Element and a Programmatic Environmental Impact Report (PEIR) to support the adoption of the Town's Housing Element. As part of the 2023-2031 Housing Element, the Town of Danville will need to accommodate its Regional Housing Needs Allocation (RHNA) as assigned by the Association of Bay Area Governments. The Town of Danville's RHNA assignment will include the requirement to accommodate additional residential units with varying densities. Since the Town of Danville does not have a sufficient existing inventory of un-developed residential lands, it will need to identify sites for potential General Plan Land Use Amendments and site-specific P-1; Planned Unit Development rezoning providing for additional residential uses at varying densities. The amended General Plan Housing Element will need to provide for the required housing inventory and the PEIR will need to provide environmental analysis of the chosen sites to support the potential Land Use Amendments and to allow for future development with little or no additional environmental review needed.

3.1 Town of Danville Candidate Sites

The proposed project, located within the Town of Danville and portions of unincorporated Contra Costa County, has been split into eight (8) sub areas (Figures 1 and 2). Appendix A provides an overview of candidate sites by sub area, including location and Assessor's Parcel Number (APN). Appendix B provides mapbooks illustrating the extent of the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI; USFWS 2022), the U.S. Forest Service (USFS) CALVEG plant communities (USFS 2022), and U.S. Department of Agriculture's (USDA) Natural Resources Conservation Science (NRCS) Web Soil Survey (NRCS 2022) on the project site. Table 1 provides an overview of each sub area with a general description of existing land use, plant communities present, potential sensitive resource concerns, and total acreage.

Sub Area 1

Sub Area 1 is comprised of 36 parcels located along both sides of Interstate 680 from El Pintado Road to Diablo Road (Appendix A; Figures 1 and 2). Sub Area 1 is largely geographically isolated due to surrounding development and major thoroughfares; however, San Ramon Creek and its tributaries provide wildlife corridors immediately adjacent to parcels within this sub area. Plant communities found within Sub Area 1 include anthropogenic, non-native annual grassland, mixed oak woodland, riparian woodland, and ruderal (Appendix B; Table 1).



Sub Area 2

Sub Area 2 is comprised of 72 parcels located from Danville Square along Railroad Avenue south to Sycamore Valley Road (Appendix A; Figures 1 and 2). Sub Area 2 is geographically isolated due to surrounding development; however, San Ramon Creek and its tributaries provide wildlife corridors immediately adjacent to parcels within this sub area. Plant communities found within Sub Area 2 include anthropogenic, riparian woodland, and ruderal (Appendix B; Table 1).

Sub Area 3

Sub Area 3 is comprised of four parcels located to the east of San Ramon Valley Boulevard into the foothills of Las Trampas Regional Wilderness Park (Appendix A; Figures 1 and 2). Sub Area 3 is comprised of primarily open space with connectivity to the East Bay Hills; in addition, a tributary to San Ramon Creek provides a wildlife corridor along the northern boundary of one of the parcels. Plant communities found within Sub Area 3 include anthropogenic, non-native annual grassland, mixed oak woodland, riparian woodland, and ruderal (Appendix B; Table 1).

Sub Area 4

Sub Area 4 is a single parcel located along El Cerro Boulevard at the Diablo Road intersection (Appendix A; Figures 1 and 2). Sub Area 4 is highly developed and does not provide connectivity to open space and no wildlife corridors are present. Plant communities found within Sub Area 4 include anthropogenic and ruderal (Appendix B; Table 1).

Sub Area 5

Sub Area 5 is a single parcel located to the north of Sycamore Valley Road between Old Orchard Drive and Morninghome Road (Appendix A; Figures 1 and 2). Sub Area 5 is highly developed; however, Sycamore Creek which crosses the southern end of the parcel provides a wildlife corridor. Plant communities found within Sub Area 5 include anthropogenic and ruderal (Appendix B; Table 1).

Sub Area 6

Sub Area 6 is comprised of two parcels located along Camino Tassajara between Crow Canyon Road and Woodside Drive (Appendix A; Figures 1 and 2). Sycamore Creek runs through Sub Area 6 and provides a wildlife corridor. One of the two parcels in this Sub Area have connectivity to open space, although the surrounding area is highly developed. Plant communities found within Sub Area 6 include anthropogenic, non-native annual grassland, mixed oak woodland, riparian woodland, and ruderal (Appendix B; Table 1).



Sub Area 7

Sub Area 7 consists of three parcels located to the north of Fostoria Way (Appendix A; Figures 1 and 2). Sub Area 7 is geographically isolated due to surrounding development; however, San Ramon Creek provides a wildlife corridor along the western boundary of two parcels within this sub area. Plant communities found within Sub Area 7 include anthropogenic, orchard, and ruderal (Appendix B; Table 1).

Sub Area 8

Sub Area 8 is a single parcel located to the north of Crow Canyon Road across from its intersection with Barbados Drive (Appendix A; Figures 1 and 2). Sub Area 8 is geographically isolated due to surrounding development. Plant communities found within Sub Area 8 include anthropogenic, non-native annual grassland, and ruderal (Appendix B; Table 1).

Table 1. Summary of Town of Danville Housing Element Update Candidate Site Sub Areas.

Sub Areas	Existing Land Use	Plant Communities Present	Potential Sensitive Resource Concerns	Total Acreage
Sub Area 1	<ul style="list-style-type: none">• Child Care• Office• Open Space• Parking Lot• Residential	<ul style="list-style-type: none">• Anthropogenic• Non-Native Annual Grassland• Mixed Oak Woodland• Riparian Woodland• Ruderal	<ul style="list-style-type: none">• San Ramon Creek/Tributaries• Nesting Birds/Roosting Bats• Special-Status Wildlife• Protected Trees	28.41
Sub Area 2	<ul style="list-style-type: none">• Commercial• Office• Parking Lot	<ul style="list-style-type: none">• Anthropogenic• Riparian Woodland• Ruderal	<ul style="list-style-type: none">• San Ramon Creek/Tributaries• Nesting Birds/Roosting Bats• Special-Status Wildlife• Protected Trees	38.09
Sub Area 3	<ul style="list-style-type: none">• Child Care• Open Space• Residential	<ul style="list-style-type: none">• Anthropogenic• Non-Native Annual Grassland• Mixed Oak Woodland• Riparian Woodland• Ruderal	<ul style="list-style-type: none">• San Ramon Creek/Tributaries• Special-Status Plants (Congdon's tarplant present)• USFWS-designated Critical Habitat for Alameda whipsnake• Nesting Birds/Roosting Bats• Special-Status Wildlife• Protected Trees	14.38
Sub Area 4	<ul style="list-style-type: none">• Nursery	<ul style="list-style-type: none">• Anthropogenic• Ruderal	<ul style="list-style-type: none">• Nesting Birds/Roosting Bats• Special-Status Wildlife• Protected Trees	2.7



Sub Areas	Existing Land Use	Plant Communities Present	Potential Sensitive Resource Concerns	Total Acreage
Sub Area 5	<ul style="list-style-type: none">Office	<ul style="list-style-type: none">AnthropogenicRuderal	<ul style="list-style-type: none">Sycamore CreekNesting Birds/Roosting BatsSpecial-Status WildlifeProtected Trees	3.77
Sub Area 6	<ul style="list-style-type: none">Open SpaceWoodranch	<ul style="list-style-type: none">AnthropogenicNon-Native Annual GrasslandMixed Oak WoodlandRiparian WoodlandRuderal	<ul style="list-style-type: none">Sycamore CreekNesting Birds/Roosting BatsProtected Trees Nesting Birds/Roosting BatsSpecial-Status WildlifeProtected Trees	10.3
Sub Area 7	<ul style="list-style-type: none">Open SpaceOrchard	<ul style="list-style-type: none">AnthropogenicOrchardRuderal	<ul style="list-style-type: none">San Ramon CreekNesting Birds/Roosting BatsSpecial-Status WildlifeProtected Trees	12.81
Sub Area 8	<ul style="list-style-type: none">Open Space	<ul style="list-style-type: none">AnthropogenicNon-Native Annual GrasslandRuderal	<ul style="list-style-type: none">Special-Status PlantsNesting Birds/Roosting BatsSpecial-Status WildlifeProtected Trees	5
TOTAL ACREAGE				115.48

4. ANALYSIS METHODS

Prior to the site survey, available reference materials were reviewed, including the NRCS Web Soil Survey (2022), USFS CALVEG (2022), and USFWS NWI (2022) (Appendix B); and topographic maps, and aerial imagery (Google Earth 2022). The site survey was performed on February 4, 2022.

The project site was also analyzed via an on-site field survey for indicators of hydrophytic vegetation and wetland hydrology. Sequoia biologists conducted a one-day reconnaissance survey and potential jurisdictional features were determined based on the presence or absence of these field indicators and features identified in the desktop review were field verified. The level of analysis does not conform to the amount of detail typically required for a formal wetland delineation suitable for submittal to the USACE.



5. RESULTS

5.1 Project Site Topography and Hydrology

The project site is located throughout the Town of Danville, several creeks and tributaries flow through the project site. These include Green Valley Creek, Sycamore Creek, and San Ramon Creek. Green Valley Creek is a stream that connects with San Ramon Creek in downtown Danville. Sycamore Creek is a perennial stream characterized by very low flows outside of winter and stagnant pools. Sycamore Creek flows through Sub Areas 5 and 6 (Appendix B). Sycamore Creek and Green Valley Creek are both major water bodies within the San Ramon Creek sub watershed.

San Ramon Creek stretches over 18.89 miles in the southern portion of the Walnut Creek watershed. Flowing northward and spreading through approximately 54 square miles the San Ramon Creek sub watershed has headwaters in Bollinger and San Catanio Creeks, fed by springs and creeks from Las Trampas and Mount Diablo. Sycamore Creek and Green Valley Creek also flow into San Ramon Creek, which merges with Las Trampas to become Walnut Creek. A large majority of the mainstem banks of San Ramon Creek are constructed of earthen channels, while its tributaries are mostly natural. San Ramon Creek and its unnamed tributaries flow through Sub Areas 1, 2, 3, and 7 (Appendix B).

The climate of the project site is Mediterranean (i.e., dry-summer subtropical), characterized by warm, dry summers with average highs between 70- and 80-degrees Fahrenheit and average lows in the 50s and 60s, and cool, wet winters with average highs in the 50s and average lows in the 40s Fahrenheit. The average annual precipitation is approximately 25.04 inches, falling primarily between November and March (U.S. Climate Data 2022).

5.2 Project Site Vegetation

On February 4, 2022, Sequoia staff conducted a survey of the project site and characterized vegetation present. During the survey, biologists also documented plant and wildlife species observed on the project site. Nomenclature used for plant names follows *The Jepson Manual* Second Edition (Baldwin 2012), while nomenclature used for wildlife follows the California Department of Fish and Wildlife's (CDFW) *Complete List of Amphibian, Reptile, Bird, and Mammal Species in California* (2016). Plant communities were mapped on the project site (Sawyer and Keeler-Wolf 1995) and are described below.

5.2.1 Anthropogenic

Communities dominated by plants introduced by people and established or maintained by human disturbance are considered to be anthropogenic communities. Dominant species observed within anthropogenic communities on the project site include glossy privet (*Ligustrum lucidum*), Mexican fan palm (*Washingtonia robusta*), camphortree (*Cinnamomum camphora*), oleander (*Nerium oleander*), cotoneaster (*Cotoneaster* sp.), and scarlet fire thorn (*Pyracantha coccinea*).



Anthropogenic communities occur within all sub areas of the proposed project.

5.2.2 Ruderal

Ruderal vegetation is adapted to high levels of disturbance and endures for long periods of time in areas that have continual disturbance. The project site is dominated by developed and ruderal herbaceous areas. Dominant grass and forb species observed within ruderal communities on the project site include wild mustard (*Sinapis arvensis*), California burclover (*Medicago polymorpha*), poison hemlock (*Conium maculatum*), and yellow star thistle (*Centaurea solstitialis*).

Ruderal communities occur within all sub areas of the proposed project.

5.2.3 Non-Native Annual Grassland

Non-native annual grassland is comprised primarily of plant species that mature in spring and early summer, before spreading seed and dying in late summer and fall. Non-native annual grassland is found in large patches throughout the project site, primarily interspersed with ruderal communities. Dominant grass and forb species observed within non-native annual grassland communities on the project site include slender wild oat (*Avena barbata*), cutleaf geranium (*Geranium dissectum*), milk thistle (*Silybum marianum*), common vetch (*Vicia sativa*), and Italian ryegrass (*Festuca perennis*).

5.2.4 Orchard

In many areas of California, plantations of trees (i.e., orchards) have been established for various purposes. Many orchards are planted for agricultural purposes while others are planted for use as windbreaks.

Orchard community occurs within Sub Area 7 of the proposed project where numerous English walnut trees (*Juglans regia*) have been planted.

5.2.5 Riparian Woodland

Riparian woodlands are diverse habitats that support numerous plant species that can include grasses, annual and perennial forbs, vines, shrubs, and trees. A variety of plants creates a complex layering of understory and overstory which in turn provides habitat to numerous wildlife species. When found within the bed, channel, or bank of any river, stream, or lake, riparian vegetation is also protected under Section §1602 of the CFGC; and the CDFW has included riparian communities in the CNDDB.

Riparian woodland habitat is present within the project site within sections adjacent to Green Valley Creek, San Ramon Creek, Sycamore Creek, and Walnut Creek and their tributaries. Dominant plant species observed within the riparian woodland community on the project site include Italian ryegrass, curly dock (*Rumex crispus*), cattail (*Typha* spp.), Himalayan blackberry (*Rubus armeniacus*), oak (*Quercus* spp.), willow (*Salix exigua*, *S. laevigata*, and *S. lasiolepis*), and Fremont cottonwood (*Populus fremontii*).



Riparian woodland communities occur within Sub Areas 1, 2, 3, and 6 of the proposed project.

5.2.6 Mixed Oak Woodland

Mixed oak woodland is a community found throughout California and is dominated by multiple species of oak. Mixed oak woodland is dominated by a canopy of coast live oak (*Quercus agrifolia*), black oak (*Quercus kelloggii*), valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), California buckeye (*Aesculus californica*), California bay (*Umbellularia californica*), and Pacific madrone (*Arbutus menziesii*). The understory consists of a mixture of shrubs and herbaceous species, including poison oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), wood fern (*Dryopteris arguta*), spicebush (*Calycanthus occidentalis*), toyon (*Heteromeles arbutifolia*), coyote brush (*Baccharis pilularis*), French broom (*Genista monspessulana*), hairy honeysuckle (*Lonicera hispidula*), blue wildrye (*Elymus glaucus*), soap plant (*Chlorogalum pomeridianum*), California wild grape (*Vitis californica*), and nightshade (*Solanum* sp.).

Mixed oak woodland communities occur within Sub Areas 1, 3, and 6 of the proposed project.

5.3 Soils

Ten soil types occur within the project site, as mapped by the NRCS (Appendix B). The mapped soil units are Conejo clay loam, Diablo clay, Cropley clay, Botella clay, Alo clay, Pescadero clay loam, Los Osos clay loam, Garretson loam, Clear Lake clay, and Tierra loam (Appendix B; NRCS 2022).

Hydric soils are defined by the NRCS as “soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil” (Federal Register 1994). Nearly all hydric soils exhibit characteristic morphologies that result from repeated periods of saturation or inundation, or both, for more than a few days. Characteristic hydric soil indicators observable in the field include: histic epipedons; sulfidic material; aquic or preaquic moisture regime; reducing conditions; iron and manganese concretions; and soil colors (gleyed soils, soils with mottles and/or low chroma matrix). Color designations are determined by comparing a soil sample with a standard Munsell soil color chart (Munsell 2012). The presence of any one of the above listed field indicators is considered sufficient to meet the hydric soil criterion.

5.3.1 Conejo clay loam, 0 to 2 percent slopes

Conejo soils are well drained, nearly level soil in valleys. This soil is formed in material from sedimentary rock. Elevation ranges from 10 to 1,000 feet. The average annual rainfall is 14 to 25 inches. Permeability is moderately slow, and the available water capacity is 10 to 12 inches. Roots can penetrate to a depth of 60 inches. These soils are moist from December to June and are dry from June to October in most years. Vegetation is annual grasses and forbs, scattered oaks, and a few sycamores along creeks. This soil is used for dryland small grain and home sites. **Conejo clay loam, 0 to 2 percent slopes, is classified as a hydric soil by the NRCS.**



5.3.2 *Diablo clay, 15 to 30 percent slopes*

Diablo soils are well drained soils that overlie interbedded calcareous fine-grained sandstone, clayey shale, and weathered siltstone. These soils are on terraces and rolling uplands. The plant cover is annual and perennial grasses and scattered oaks. Runoff is slow to medium, and the hazard of erosion is slight to moderate. This soil is mainly used for pasture. **Diablo clay, 15 to 30 percent slopes, is not classified as a hydric soil by the NRCS.**

5.3.3 *Cropley clay, 2 to 5 percent slopes*

Cropley soils consists of very deep, moderately well and well drained soils that formed in alluvium from mixed rock sources. They are found on alluvial fans, floodplains and in small basins. Slopes range from 0 to 15 percent. Vegetative cover consists of annual grasses and forbs. Elevations range from 10 to 2,100 feet. The mean annual rainfall is about 12 to 30 inches. Frost free season is 200 to 330 days and up to 360 days along the coast. The Alo, Altamont, Diablo, Antioch, Salinas and Sorrento soils are the main associated soils. **Cropley clay, 2 to 5 percent slopes, is classified as a hydric soil by the NRCS.**

5.3.4 *Botella clay, 2 to 9 percent slopes*

Botella soils are moderately well drained and well drained soils on alluvial fans and flood plains. These soils are formed in alluvium from sedimentary rock. Slopes are 0 to 9 percent. Elevation ranges from 300 to 700 feet. The average annual rainfall is 15 to 25 inches. These soils are dry from June to mid-October and are moist from late in December to May in most years. Vegetation is grasses, forbs, and some oak and sycamore near creeks. This soil is mainly used for homesites and some for dryland walnuts, pasture, and volunteer hay. **Botella clay, 2 to 9 percent slopes, is not classified as a hydric soil by the NRCS.**

5.3.5 *Alo clay, 15 to 30 percent slopes*

Alo soils are well drained soils underlain by soft sandstone and shale. These soils are on uplands. Slopes are 15 to 75 percent. Elevation ranges from 500 to 1,500 feet. The average annual rainfall is 14 to 25 inches. These soils are moist from December to May and are dry from June to mid-October in most years. Vegetation is annual grasses, forbs, and scattered oaks. This soil is mainly used for range. **Alo clay, 15 to 30 percent slopes, is classified as a hydric soil by the NRCS.**

5.3.6 *Pescadero clay loam, 0 to 6 percent slopes*

Pescadero soils are nearly level, somewhat poorly drained soils that have a saline-alkali subsoil. These soils are in basins. They formed in alluvium derived from sedimentary rocks. The vegetation is salt-tolerant plants. Elevation ranges from 25 to 100 feet. Permeability is slow in the subsoil. Available water capacity is 7 to 8 inches. This soil is used mostly for native pasture. It is also used for irrigated pasture, wildlife habitat and recreation. **Pescadero clay loam, 0 to 6 percent slopes, is classified as a hydric soil by the NRCS.**



5.3.7 Los Osos clay loam, 15 to 30 percent slopes

Los Oso soils are well drained soils underlain by soft, fine-grained sandstone and shale. Slopes are 15 to 75 percent. Elevation ranges from 100 to 2,500 feet. The average annual rainfall is 14 to 25 inches. These soils are moist from December to April and are dry from June to December in most years. Vegetation is annual grasses, forbs, and oaks. This soil is mainly used for range, wildlife habitat, watershed, and urban structures. **Los Osos clay loam, 15 to 30 percent slopes, is not classified as a hydric soil by the NRCS.**

5.3.8 Garretson loam, 0 to 2 percent slopes

Garretson soils are well drained soils on alluvial fans and flood plains of small creeks. These soils formed in alluvium from sedimentary rock. Slopes are 0 to 5 percent. Elevation ranges from 100 to 500 feet. The average annual rainfall is 14 to 20 inches. These soils are moist to a depth of 36 inches from December to June and are dry from June to November in most years. Vegetation is annual grasses, forbs, and a few scattered oaks. This soil is used for homesites and recreation areas. **Garretson loam, 0 to 2 percent slopes, is not classified as a hydric soil by the NRCS.**

5.3.9 Clear lake clay, 0 to 15 percent slopes

Clear Lake soils are poorly-drained soils found in basins and old alluvial fans. They are underlain formed from fine-textured alluvium derived from sedimentary rock. The vegetation is annual grasses and forbs with scattered oaks. Elevation ranges from 100 to 1,000 feet. Permeability is moderately slow, and the available water capacity is 8 to 10 inches. Clear Lake soils are used for homesites, dryland small grain, and for volunteer hay. **Clear lake clay, 0 to 15 percent slopes, is classified as a hydric soil by the NRCS.**

5.3.10 Tierra loam, 2 to 9 percent slopes and 9 to 15 percent slopes

Tierra soils consist of moderately well drained soils that formed in material weathered from sedimentary terrace deposits. Elevation ranges from 150 to 1,200 feet. The average annual rainfall is 12 to 25 inches. These soils are dry from June to October and moist from December to June in most years. The vegetation is annual grasses, forbs and scattered oaks. Permeability is slow and the available water capacity is 3 to 6 inches. Some water available to plants perches above the clay subsoil. Runoff is medium and the hazard of erosion is moderate where the soil is bare. This soil is used mainly for range and home sites, as well as orchards and agriculture. **Tierra loam, 2 to 9 percent slopes and 9 to 15 percent slopes, is not classified as a hydric soil by the NRCS.**



5.4 Potentially Jurisdictional Waters on the Project Site

Aquatic resources identified on the project site during the February 2022 preliminary hydrology analysis likely fall into three categories: (1) Ephemeral Drainages ;(2) Intermittent/Perennial Drainages; and, (3) Seasonal Wetlands, as discussed below. It should be noted, a formal wetland delineation would be required to identify if these features meet the criteria necessary to be considered waters of the United States and/or State.

5.4.1 Ephemeral Drainages

Ephemeral drainages flow following precipitation events primarily during the wet season. These features convey water resulting from vertical precipitation, and as topographic depressions within valley systems gather water from upland areas via sheet flow. Drainages were identified as ephemeral when: (1) surface water was absent during the survey; (2) ordinary high water mark (OHWM) indicators observed in the field were not indicative of sustained flow typical of intermittent or perennial hydrology, and consisted primarily of scour, bed/banks, and sediment deposition; and/or (3) background sources (the NWI, National Hydrography Dataset [NHD 2022], U.S. Geological Survey [USGS] topographic maps, and other sources) did not indicate intermittent or perennial flow during a typical year.

Due to the ephemeral nature and seasonality of the drainages on the project site, the plant species composition within these features was comprised of a mix of hydrophytic and upland species consistent with the surrounding non-native annual grassland and ruderal/developed communities. During the dry summer months, upland species such as wild oat (*Avena barbata*) inhabit the drainages, while emergent and hydrophytic species (e.g., cattail [*Typha* spp.]) are dominant during the wet season.

On the project site, ephemeral drainages likely occur in Sub Areas 1 and 3 (Appendix B).

5.4.2 Intermittent/Perennial Drainages

Drainages were considered perennial when: (1) flowing surface water was observed in the channel(s) during the survey; (2) field indicators suggested perennial hydrology; and/or (3) background sources (the NWI, NHD, USGS topographic maps, and other sources) indicated perennial flow. Drainages were considered intermittent when: (1) channels had some ponded or flowing water that appeared to be the result of recent rains and not perennial hydrology; (2) channels were dry during the survey but significant OHWM indicators were present (such as shelving, sediment sorting, scour, deposition, destruction of terrestrial vegetation, and wracking) to indicate seasonal flow; and/or (3) background sources (the NWI, NHD, USGS topographic maps, and other sources) indicated seasonal flow.

Dominant vegetation observed within these drainages included Italian ryegrass (*Festuca perennis*), curly dock (*Rumex crispus*), cattail, and willow (*Salix exigua*, *S. laevigata*, *S. lasiolepis*). During the February 2022 survey, these intermittent and perennial drainages were inundated and/or saturated at the soil surface.



On the project site, intermittent/perennial drainages likely occur in Sub Areas 1, 2, 5, 6, and 7 (Appendix B).

5.4.3 Seasonal Wetlands

Seasonal wetlands primarily occur on hillside seeps and adjacent swales, channels, and ditches that appear to receive hydrologic input from direct precipitation, groundwater discharge, and/or surface runoff from the adjacent slope or contributing drainages.

Seasonal wetlands, generally classified as Freshwater Emergent Wetlands in the Cowardin Classification System/NWI (USFWS 2022), are dominated by wetland-classified shrubs and herbaceous species, including Italian ryegrass, spring vetch (*Vicia sativa*), clover (*Trifolium* sp.), English plantain (*Plantago lanceolata*), tall flatsedge (*Cyperus eragrostis*), and Himalayan blackberry (*Rubus armeniacus*).

On the project site, season wetlands likely occur within Sub Areas 3, 5, and 6 (Appendix B).

6. LIMITATIONS AND SUMMARY

This Aquatic Resources Technical Report provides information regarding the aquatic resources found within the Town of Danville 2023-2031 Housing Element Update Project site. Aquatic resources were identified within Sub Areas 1, 2, 3, 5, 6, and 7.

Regulatory agencies, including the USACE, Regional Water Quality Control Board and/or State Water Resources Control Board, and CDFW, make the final determination regarding the location and extent of their jurisdiction for these aquatic features and any associated riparian vegetation. This Aquatic Resources Technical Report provides preliminary information about the type and location of potentially jurisdictional aquatic resources on the project site and baseline information to inform future focused aquatic resource surveys and/or formal wetland delineation. This Aquatic Resources Technical Report does not constitute authorization to conduct the project, and all necessary permits and approvals should be obtained from regulatory agencies prior to project implementation.



7. REFERENCES

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Appendix A

Sites

Town of Danville Housing Element Update Candidate

Location	Assessor's Parcel Number (APN)	Existing Land Use	Acreage
Sub Area 1			
510 La Gonda Way	200131005	Office	2.27
520 La Gonda Way	200052004	Office	0.74
530 La Gonda Way	200260002	Office	0.02
530 La Gonda Way	200260003	Office	0.02
530 La Gonda Way	200260004	Office	0.02
530 La Gonda Way	200260010	Office	0.58
481 La Gonda Way	200152004	SF Residence	1.14
485 La Gonda Way	200152005	SF Residence	0.55
455 La Gonda Way	200152008	St. Isador's Parking/Field	6.87
425 El Pintado	200040012	Office	3.20
108 Charles Ln	196201002	SF Residence	0.24
104 Charles Ln	196201003	SF Residence	0.24
100 Charles Ln	196201004	SF Residence	0.25
417 Ilo Ln	196201005	SF Residence	0.25
441 Ilo Ln	196201006	SF Residence	0.24
457 Ilo Ln	196201007	SF Residence	0.24
465 Ilo Ln	196201008	Vacant	0.02
465 Ilo Ln	196201009	SF Residence	0.31
464 Ilo Ln	196201010	SF Residence	0.30
456 Ilo Ln	196201011	SF Residence	0.28
448 Ilo Ln	196201012	SF Residence	0.23
440 Ilo Ln	196201013	SF Residence	0.23
101 Charles Ln	196201030	SF Residence	0.23
105 Charles Ln	196201031	SF Residence	0.23
109 Charles Ln	196201032	SF Residence	0.36
112 Charles Ln	196201033	SF Residence	0.19
120 Charles Ln	196201033	SF Residence	0.53
939 El Pintado	200020010	Child Care	1.63
400 El Cerro Blvd	200140016	Office	1.26
300 El Cerro	200270006	Office	0.67
300 El Cerro	200270001	Office	0.05
300 El Cerro	200270002	Office	0.05

Location	Assessor's Parcel Number (APN)	Existing Land Use	Acreage
300 El Cerro	200270003	Office	0.05
300 El Cerro	200270007	Office	0.05
300 El Cerro	200270008	Office	0.05
Common Area – Westbriar Knolls	200070006	Open Space	4.82
Sub Area 2			
Hartz/Railroad	199330067	Parking Lot	0.28
115 Hartz	199330035	Commercial	0.34
127 Hartz	199330064	Commercial	0.22
Railroad Ave	199330055	Commercial	0.13
145 Hartz	199033058	Commercial	0.72
171 Hartz	199330063	Commercial	0.28
179 Hartz	199330065	Commercial	0.11
80 Railroad	199330009	Commercial	0.13
195 Hartz	199330010	Commercial	0.32
112 W. Linda Mesa	199330027	Commercial	0.06
100 Hartz	200190024	Commercial	0.21
110 Hartz	200190023	Commercial	0.15
120 Hartz	200190028	Commercial	0.30
130 Hartz	200190018	Commercial	0.26
Hartz Ave	200190010	Commercial	0.33
150 Hartz	200190017	Commercial	0.41
180 Hartz	200190021	Commercial	0.21
360 Rose	200200011	Commercial	0.18
344 Rose	200200017	Commercial	0.40
155 Diablo	208110023	Bev & More	1.01
600 Hartz Ave	208022041	FAZ Restaurant	1.19
Front St	216120029	Parking/Creek	0.20
185 Front St	208022036	Commercial	0.70
156 Diablo Rd	200211028	Office	0.64
315 Diablo Rd	216120042	Parking/Creek	0.45
319 Diablo Rd	216120043	Office	1
268 Front St	200211005	Commercial	0.12
199 E. Linda Mesa	200211007	Commercial	0.18

Location	Assessor's Parcel Number (APN)	Existing Land Use	Acreage
254 Rose Ave	200211016	Commercial	0.27
67 Front St	200122017	Commercial	0.07
77 Front St	200211018	Commercial	0.18
85 Front St	200211027	Commercial	0.27
290 Rose Ave	200211025	Commercial	0.11
486 SRVB	216101001	Commercial	1.78
480 SRVB	216101002	Commercial	1.37
533 SRVB	208043020	Auto	0.16
SRVB	208043021	Auto	0.07
509 SRVB	208043022	Auto	0.07
511 SRVB	208043024	Restaurant	0.40
519 SRVB	208043025	Commercial	0.26
20 Oak Ct	216090003	Office	0.55
30 Oak Ct	216090004	Office	0.36
40 Oak Ct	216090005	Office	0.32
50 Oak Ct	216090006	Office	0.95
55 Oak Ct	216090007	Office	0.42
65 Oak Ct	216090008	Office	0.37
75 Oak Ct	216090009	Office	0.32
85 Oak Ct	216090010	Office	0.50
600 SRVB	216090017	Office	0.75
544 SRVB	216090017	Commercial	0.61
588 SRVB	216090023	Commercial	0.84
571 SRVB	208044015	Commercial	0.32
551 SRVB	208044017	Commercial	0.35
555 SRVB	208044018	Commercial	0.29
577 SRVB	208051009	Commercial	0.29
10 Town & Country Dr	208051011	Commercial	0.10
589 SRVB	208060029	Wells Fargo Bank	0.69
609 SRVB	208060055	Pet Food/Walgreens	0.65
615 SRVB	208060056	City Bank/Various	0.21
607 SRVB	208060057	Fitness	0.05
589 SRVB	208060058	McCaulous	0.40
SRVB	208060059	Parking Lot	3.40

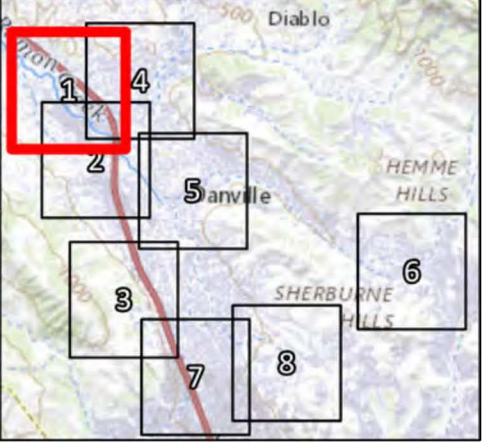
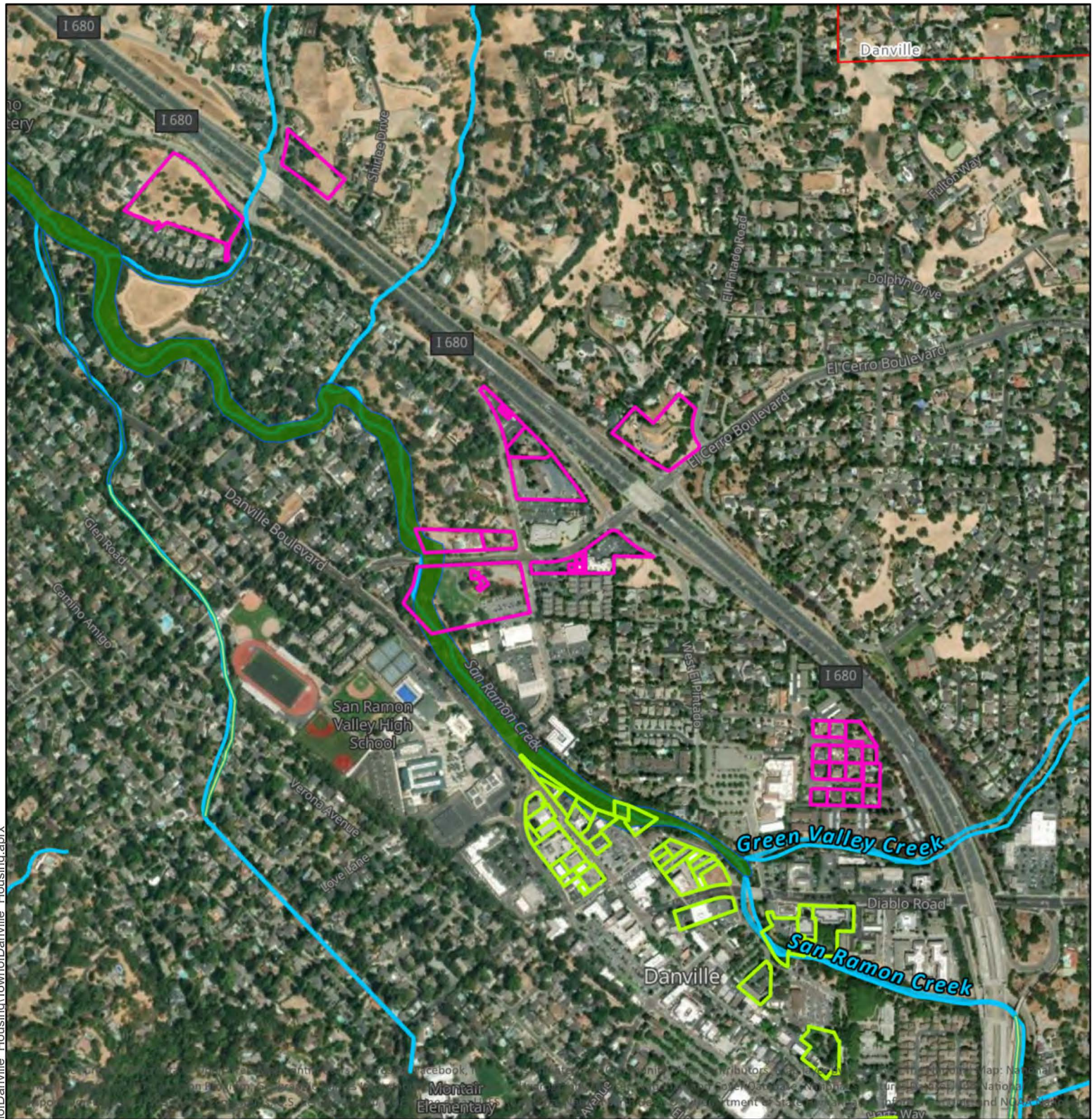
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107 Town & Country Dr	208060053	Commercial	3.89
135 Town and Country Dr	208060054	Office	1.40
Town and Country Dr	208060062	Office	0.45
140 Town and Country Dr	208060063	Office	0.71
Boone Ct	216080004	Commercial	0.32
200 Boone Ct	216080072	Commercial	1.30
744 SRVB	207012001	Office	0.57
760 SRVB	207012007	Office	0.42
770 SRVB	207012008	Office	0.37
780 SRVB	207012009	Office	0.38
Sub Area 3			
1435 SRVB	208230047	Single Family Residence	1.38
1453 SRVB	208230011	Child Care	0.69
1895 Ridgeland CL	208612007	HOA Facilities	6.31
Elworthy	208230044	Open Space	6
Sub Area 4			
828 Diablo Rd	196270029	Nursery	2.70
Sub Area 5			
699 Old Orchard	216220008	Office	3.77
Sub Area 6			
2900 Camino Tassajara	217040021	Woodranch	8
Camino Tass/Liverpool	218010047	Open Space	2.3
Sub Area 7			
3020 Fostoria Way	218090031	Borel	10
3420 Fostoria Way	218040043	Office	1.71
Fostoria Way	218090032	Town Owned	1.11
Sub Area 8			
CC Country Club	218660001	Open Space	5
TOTAL ACREAGE			115.48



Appendix B

Town of Danville 2023-2031 Housing Element Update Mapbooks


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 Danville City Limits
sub areas

 1
 2

Wetland Type (NWI)

 Freshwater
Emergent Wetland

 Freshwater
Forest/Shrub
Wetland
 Riverine
 Cal Streams (NHD)

0 250 500 1,000
Feet
0 75 150 300
Meters



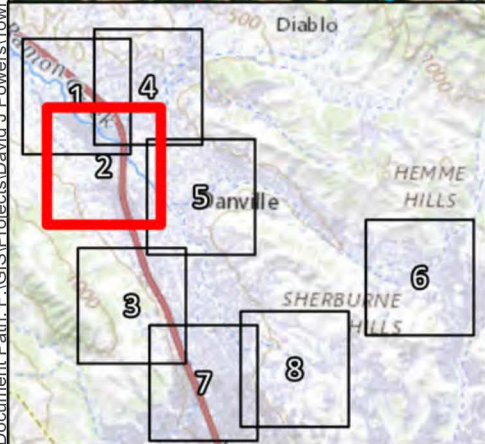
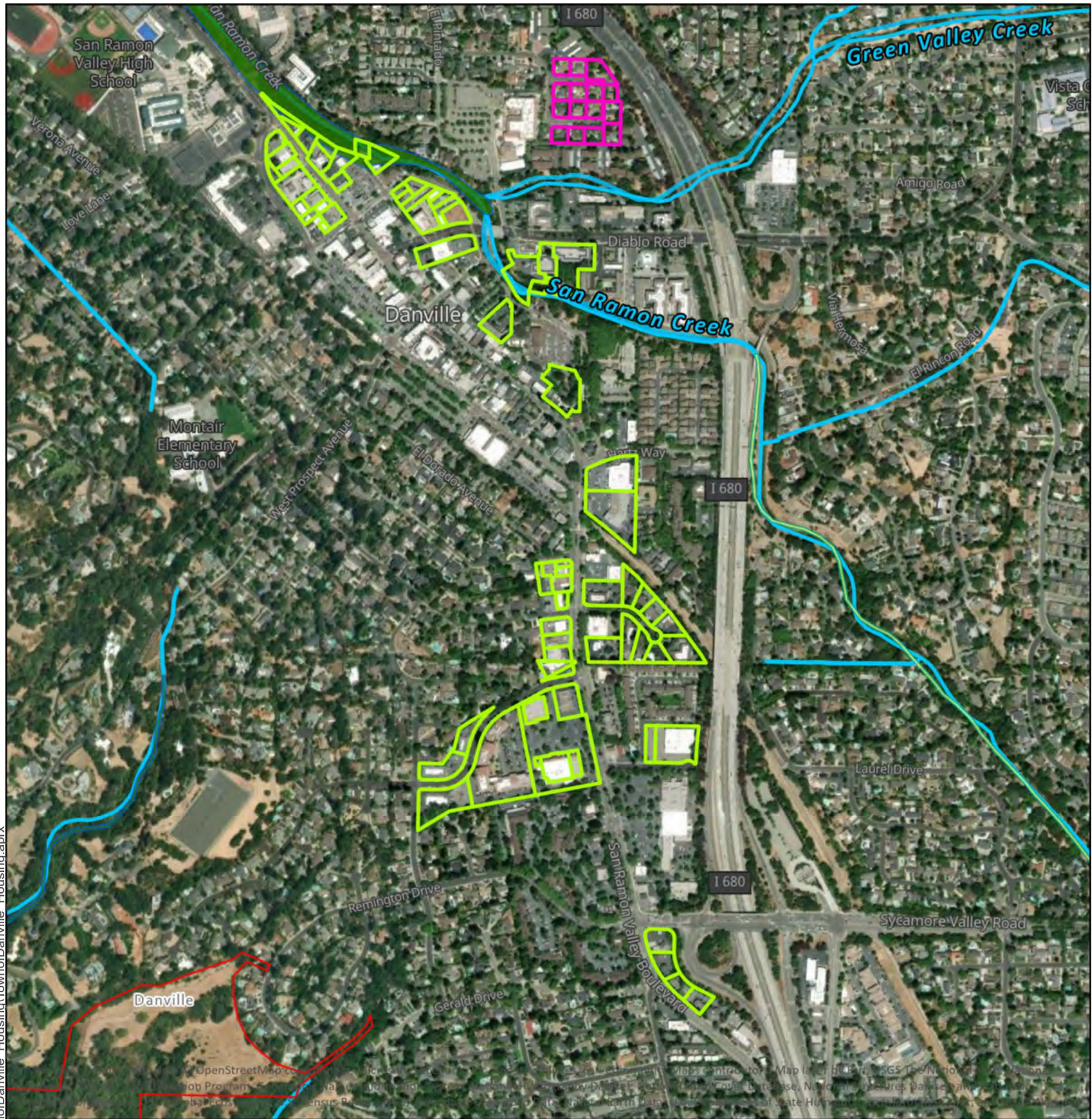
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Danville City Limits
sub areas

1
2

Wetland Type (NWI)

Freshwater
Emergent Wetland

Freshwater
Forested/Shrub
Wetland
Riverine
Cal Streams (NHD)

0 250 500 1,000
Feet
0 75 150 300
Meters



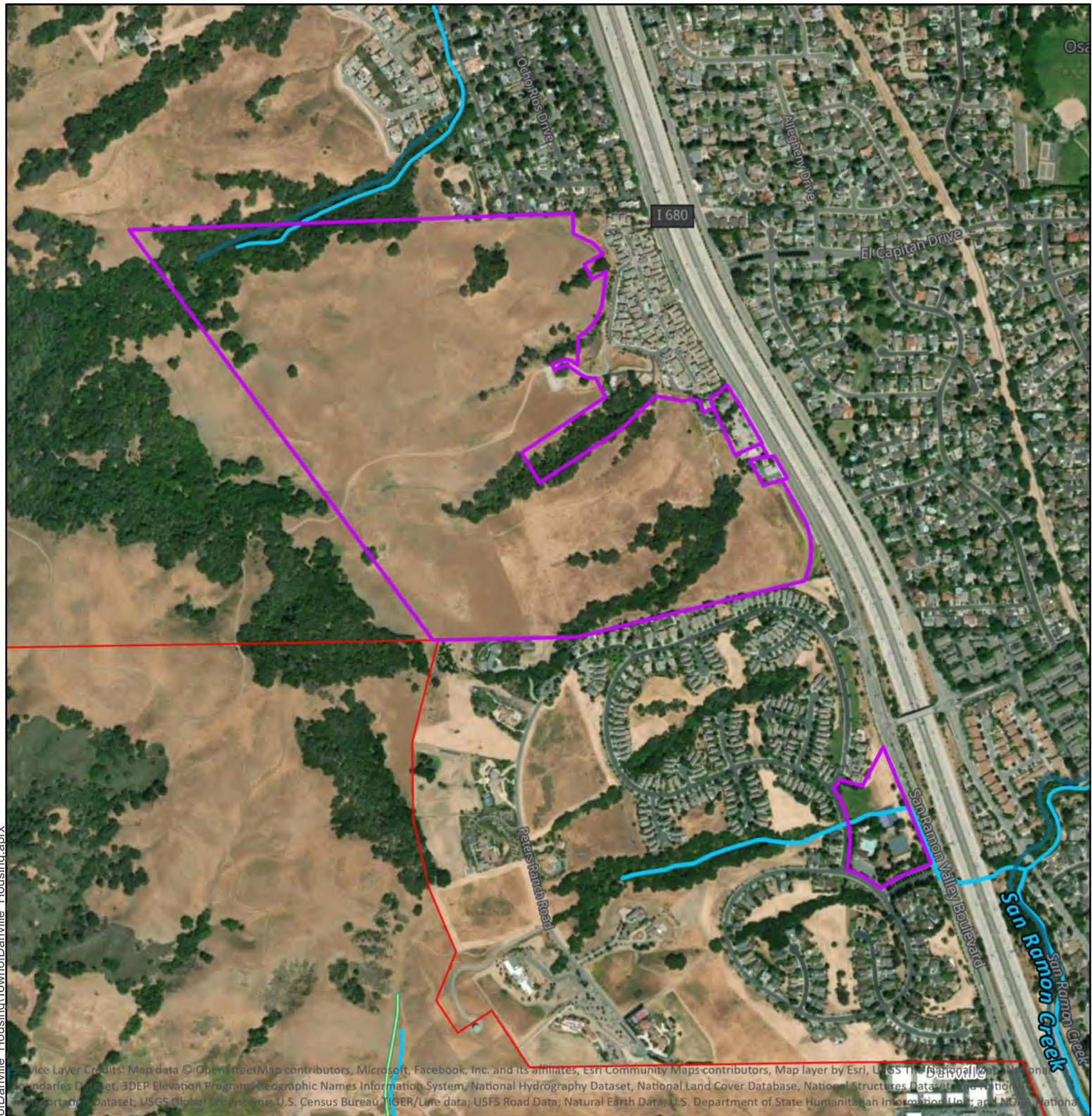
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Danville City Limits
sub areas

3

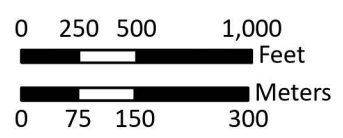
Wetland Type (NWI)


Freshwater
Emergent Wetland

Freshwater
Forested/Shrub
Wetland

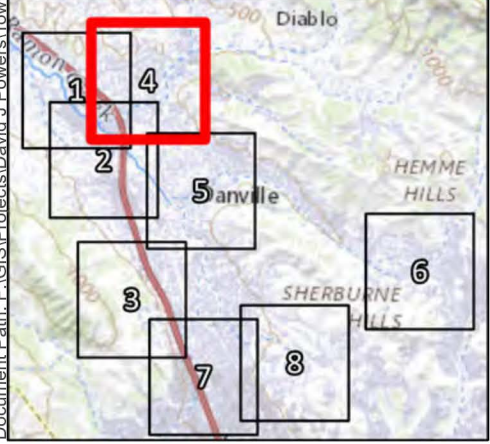
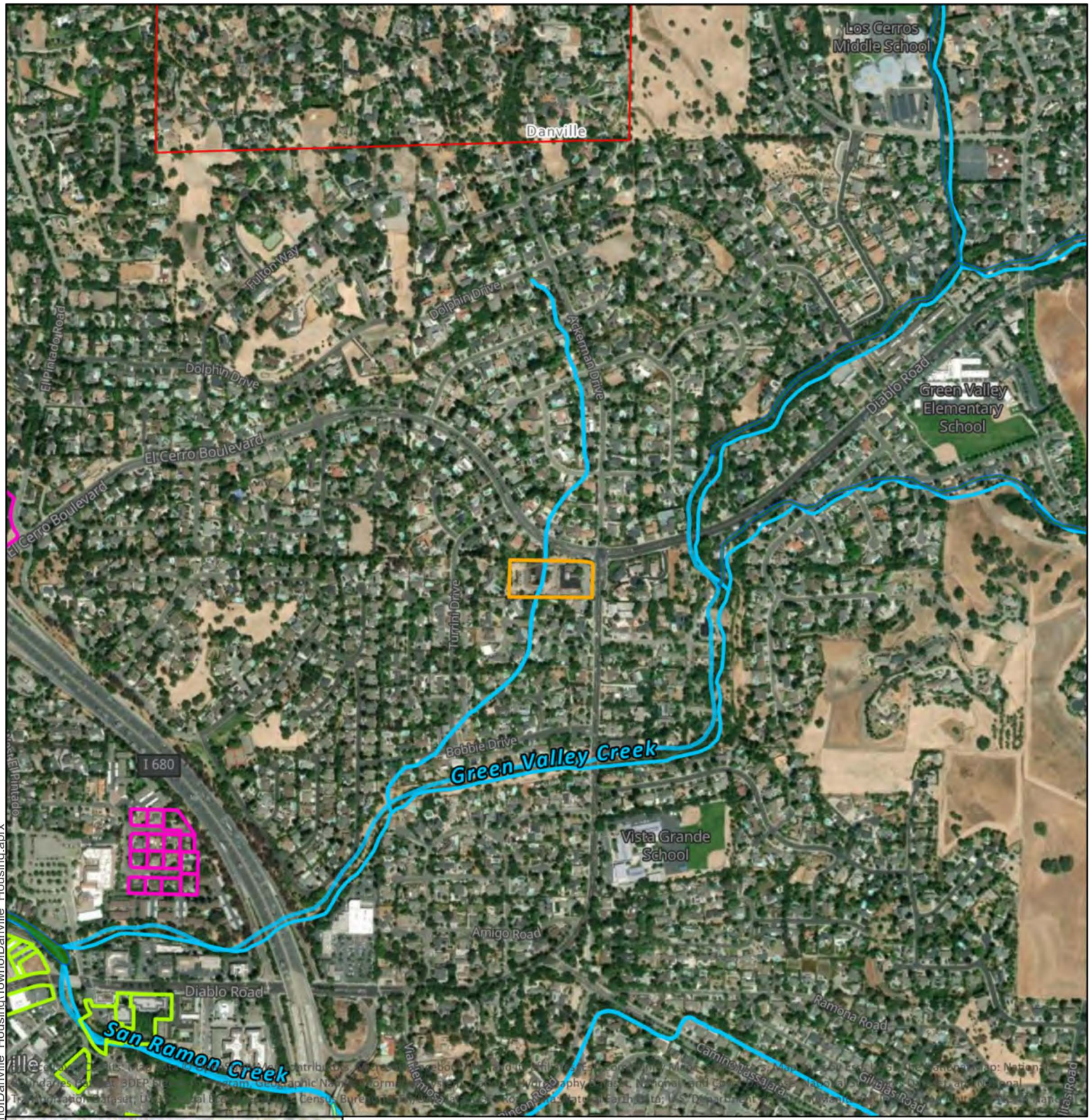
Riverine

Cal Streams (NHD)



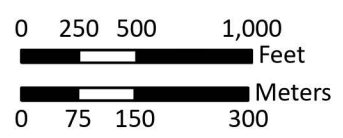
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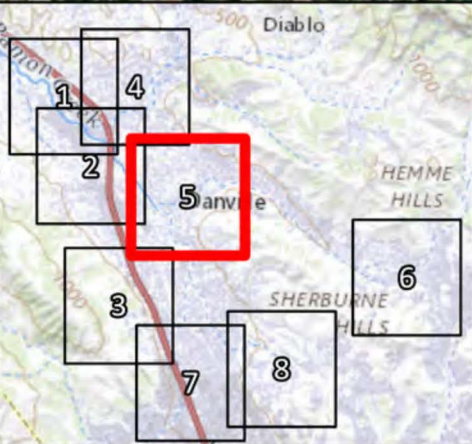
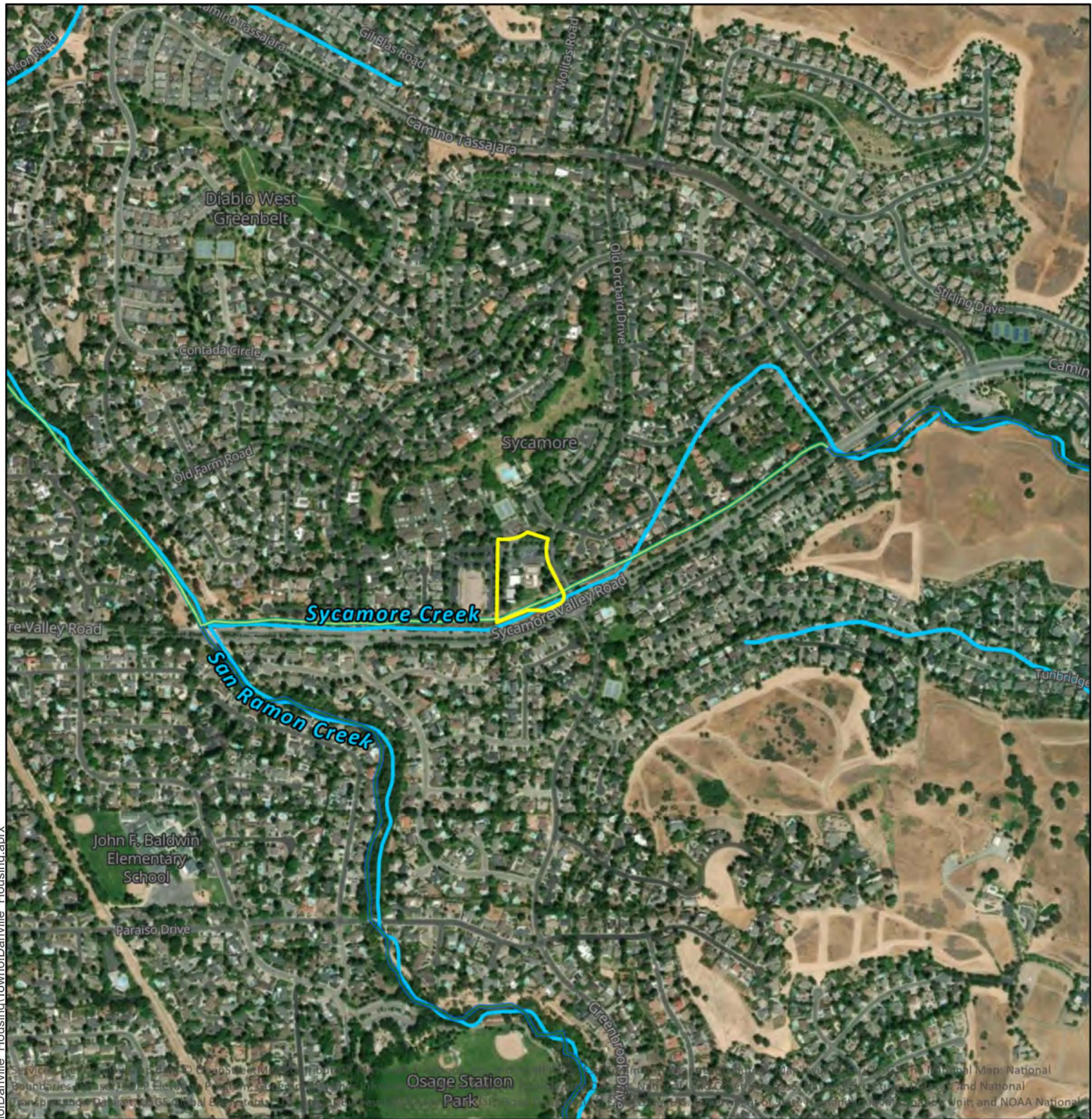
- Danville City Limits
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- Wetland Type (NWI)**
- Freshwater Emergent Wetland
 - Forested/Shrub Wetland
 - Riverine
 - Cal Streams (NHD)



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Danville City Limits sub areas

5

Wetland Type (NWI)

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Riverine

Cal Streams (NHD)

0 250 500 1,000 Feet

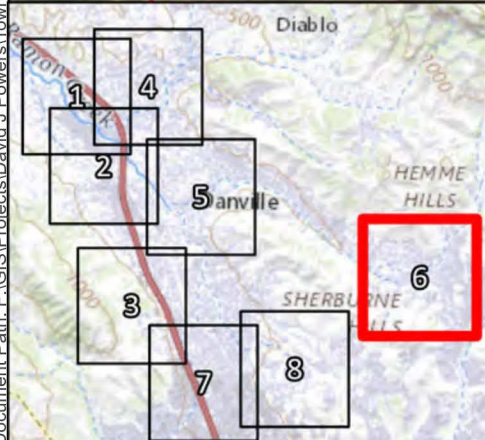
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 Danville City Limits
sub areas

□ 6

Wetland Type (NWI)

 Freshwater
Emergent Wetland

Freshwater

 Forested/Shrub
Wetland

 Freshwater Pond Riverine

— Cal Streams (NHD)



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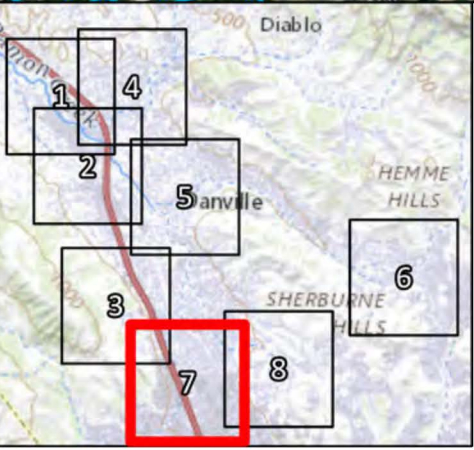
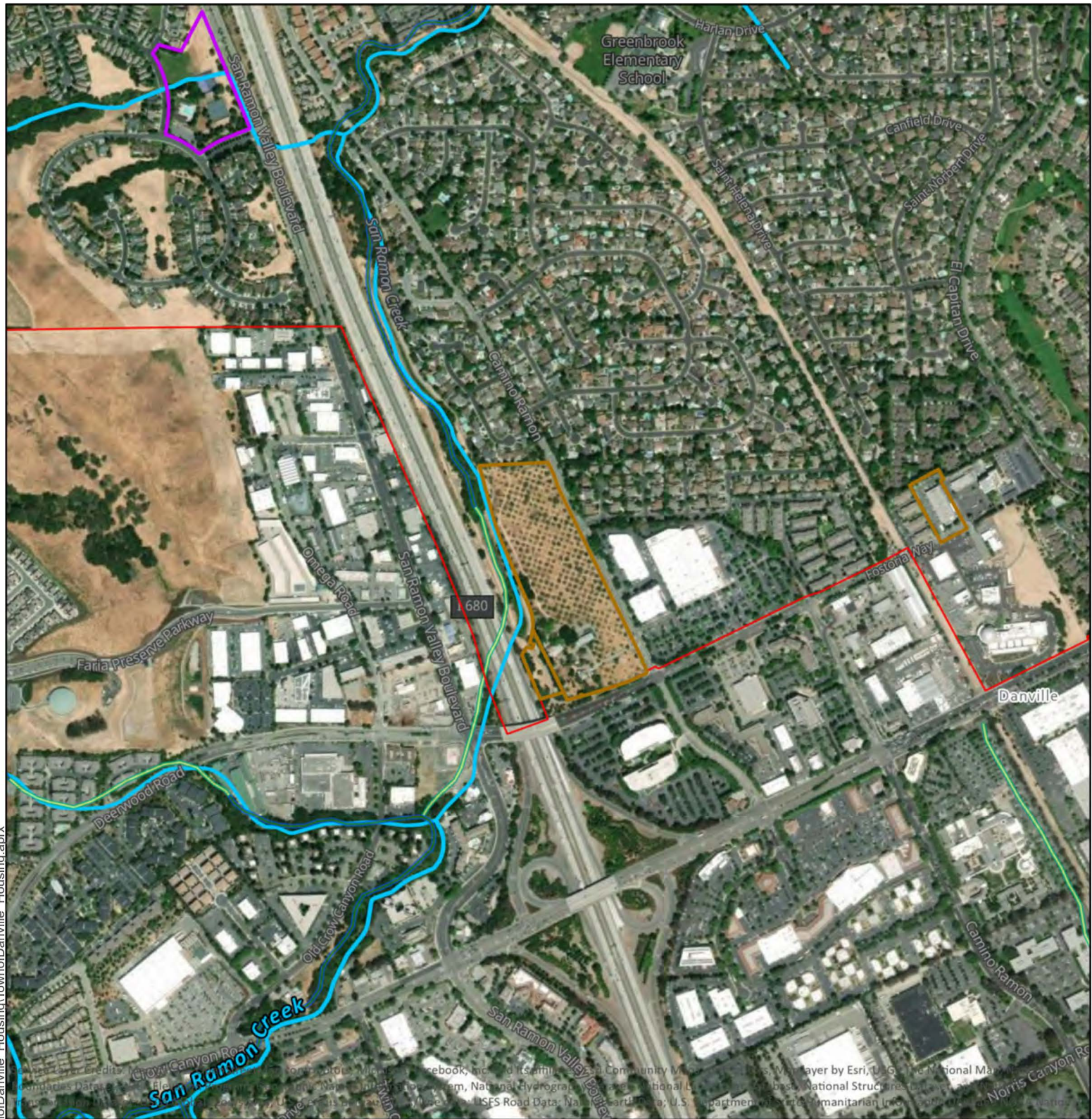
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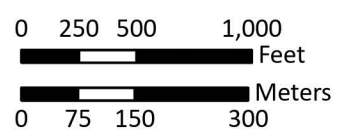
Danville City Limits
sub areas

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- 7

Wetland Type (NWI)

- Freshwater Emergent Wetland

- Freshwater Forested/Shrub Wetland
- Riverine
- Cal Streams (NHD)



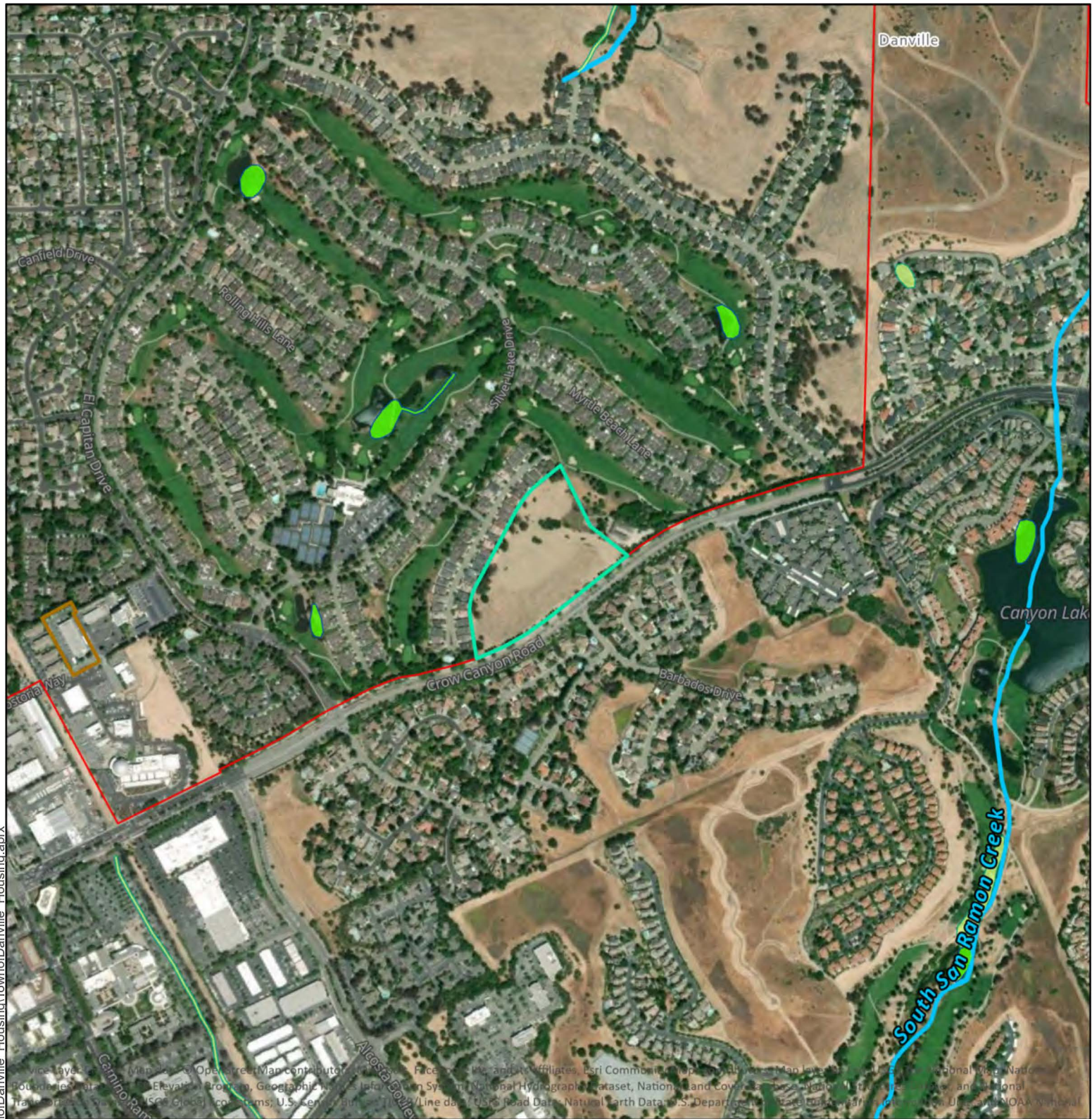
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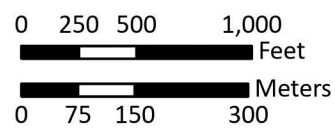



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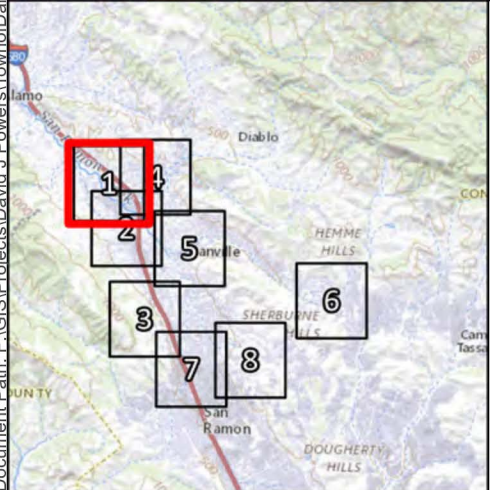
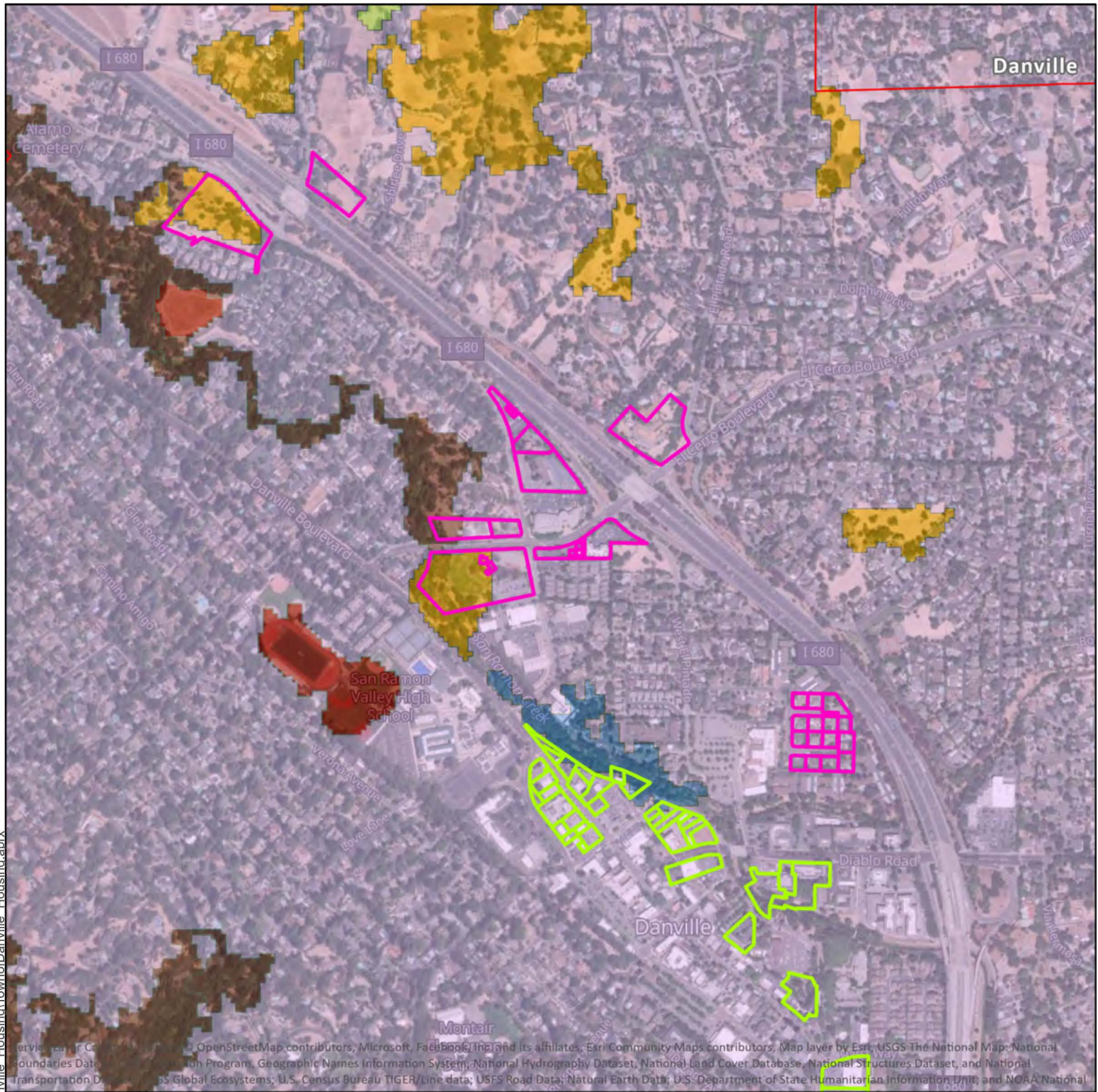


- Danville City Limits
- sub areas
- 7
- 8

- Wetland Type (NWI)**
- Freshwater
 - Emergent Wetland
 - Freshwater Pond
 - Riverine
 - Cal Streams (NHD)



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Danville City Limits

sub areas

1

2

Calveg Type

Annual Grasses/
Forbs

Non-native/
Ornamental Grass

Mixed Riparian
Hardwood

Coast Live Oak

Blue Oak

Urban

0 250 500 1,000

Feet

0 70 140 280

Meters

N

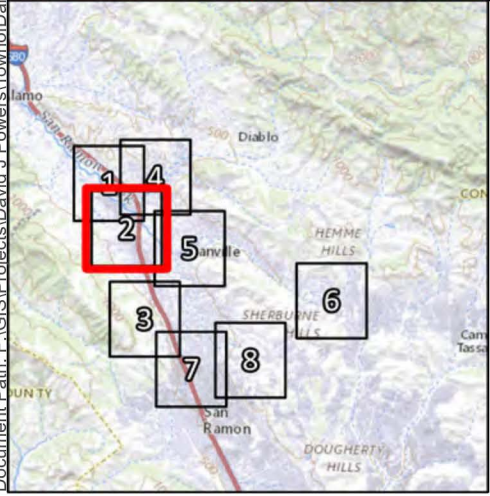
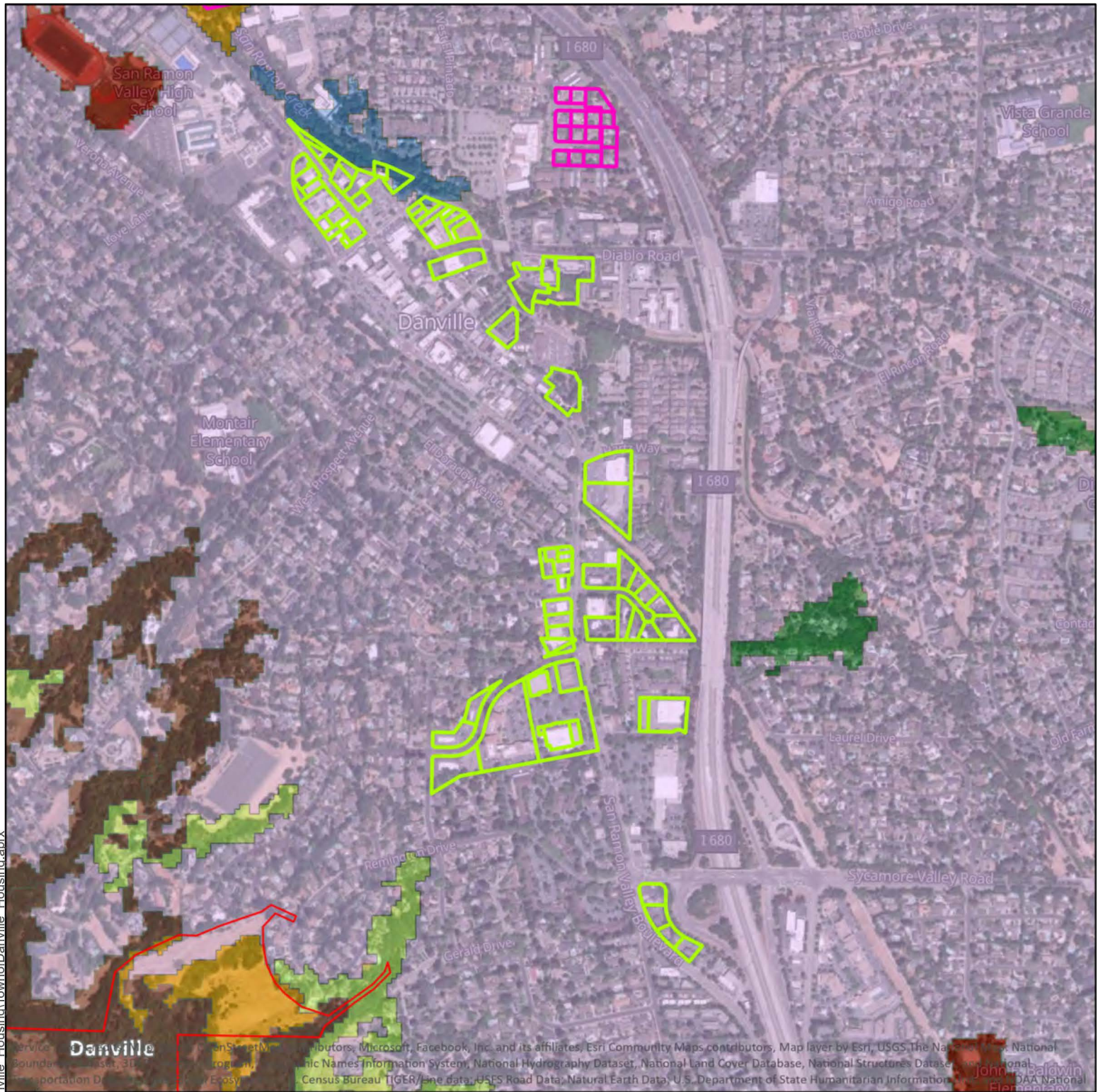
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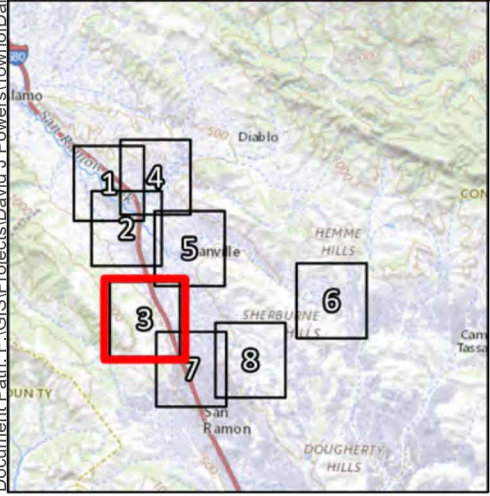
- Danville City Limits**
- sub areas**
- 1
 - 2
- Calveg Type**
- Annual Grasses/Forbs
 - Non-native/Ornamental Grass
- Non-native/Ornamental Hardwood**
- Mixed Riparian Hardwood**
- Coast Live Oak**
- Blue Oak**
- Urban**

0 250 500 1,000 Feet
0 70 140 280 Meters



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Danville City Limits

sub areas

3

Calveg Type

Chamise

Annual Grasses/Forbs

Non-native/Ornamental Grass

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StatePlane California III FIPS 0403 Ft US

Non-native/Ornamental Con/Hwd Mixture

Mixed Riparian Hardwood

Coast Live Oak

Blue Oak

Valley Oak

Urban

0 250 500 1,000 Feet

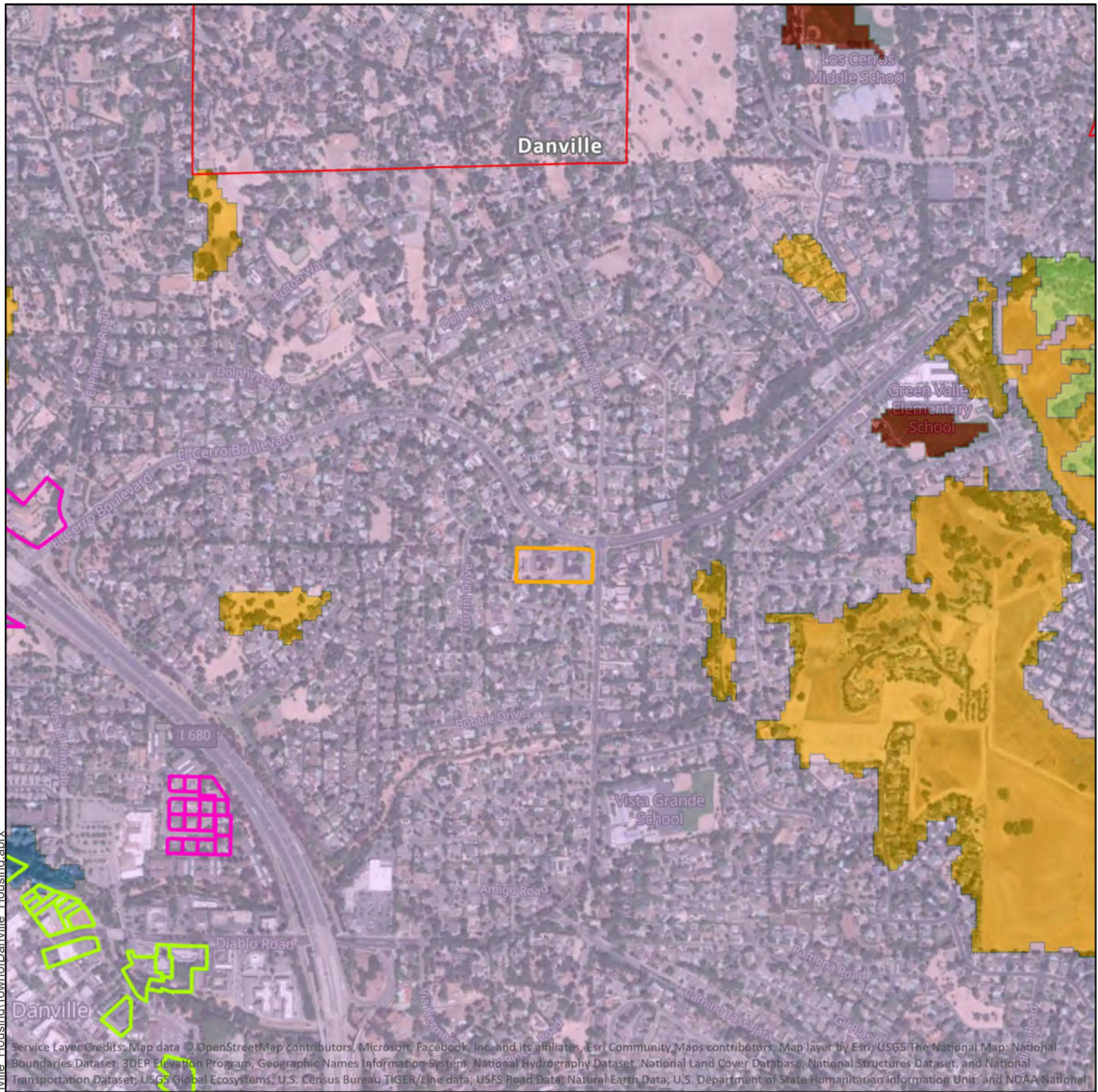
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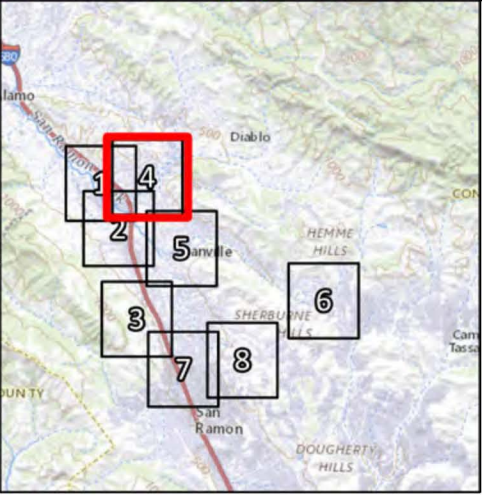
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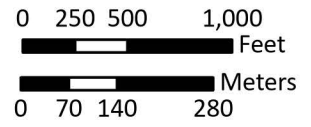
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- Danville City Limits**
- sub areas**
- 1
 - 2
 - 4

- Calveg Type**
- Annual Grasses/ Forbs

- Non-native/ Ornamental Grass
- Mixed Riparian Hardwood
- Blue Oak
- Urban



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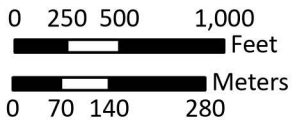




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- Danville City Limits
- sub areas**
- 5
- Calveg Type**
- Annual Grasses/ Forbs
- Non-native/ Ornamental Grass

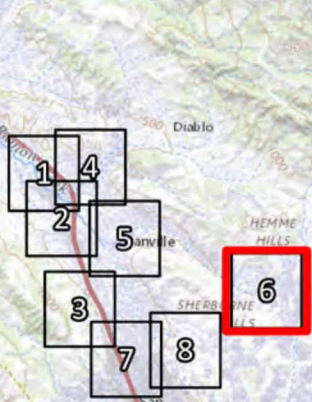
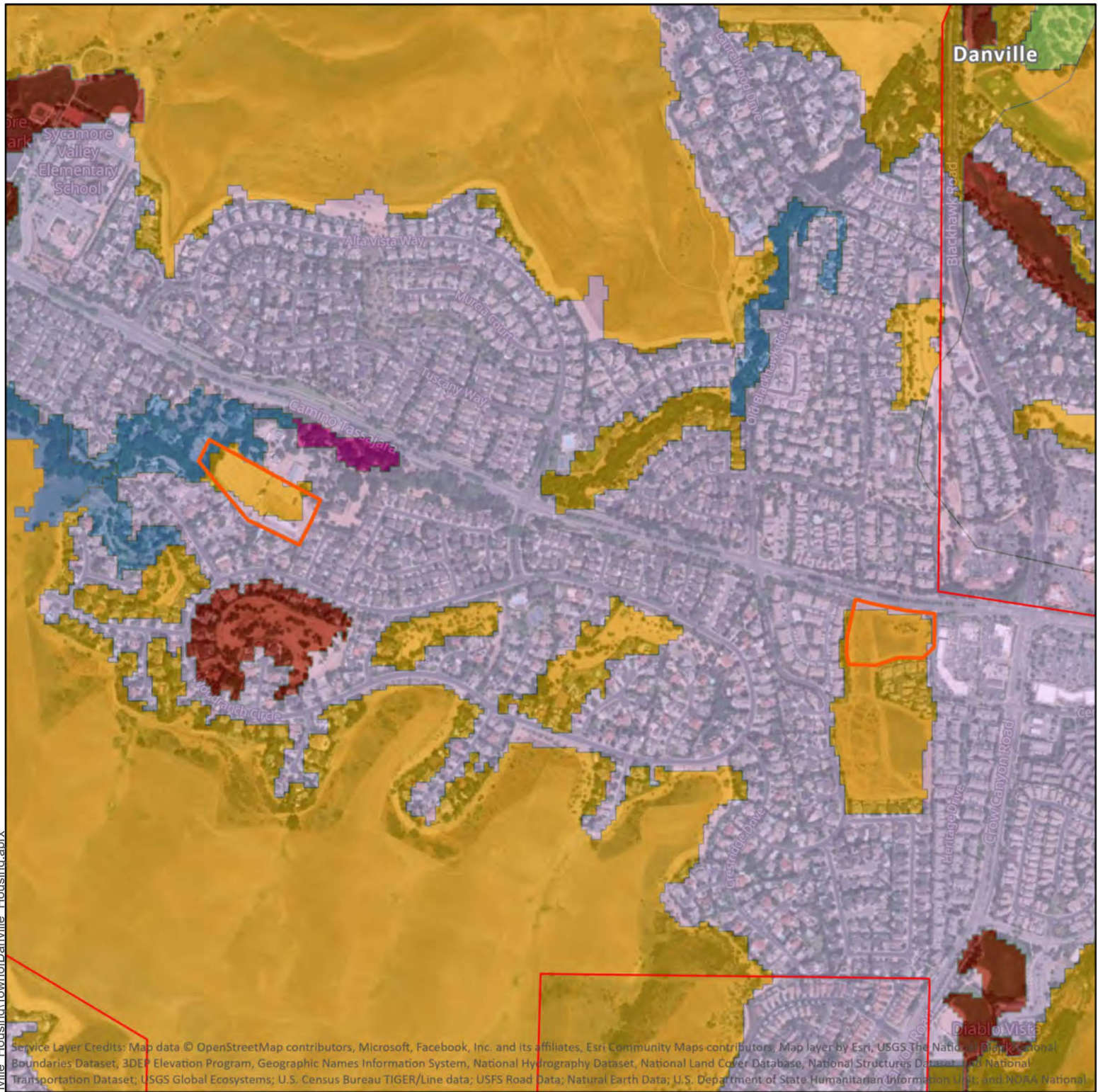
- Non-native/ Ornamental Hardwood
- Mixed Riparian Hardwood
- Blue Oak
- Urban



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Author: AurelieMuckenhirn
Coordinate System: NAD 1983 2011
StatePlane California III FIPS 0403 Ft US






☐ Danville City Limits

sub areas

6

Calveg Type

 Annual Grasses/
Forbs

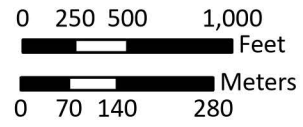
 Non-native/
Ornamental Grass

 Mixed Riparian
Hardwood

 Blue Oak

Valley Oak

 Urban



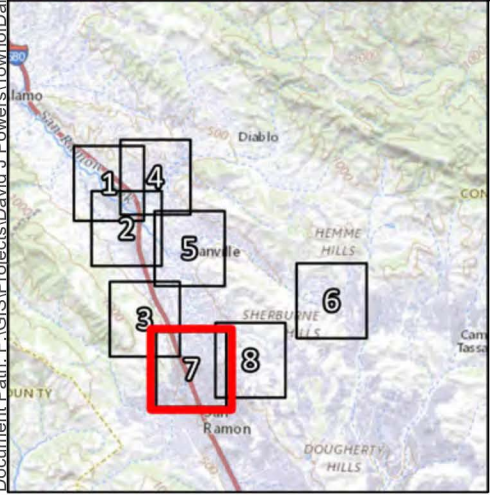
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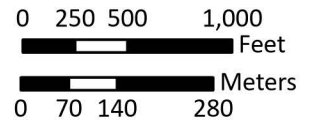
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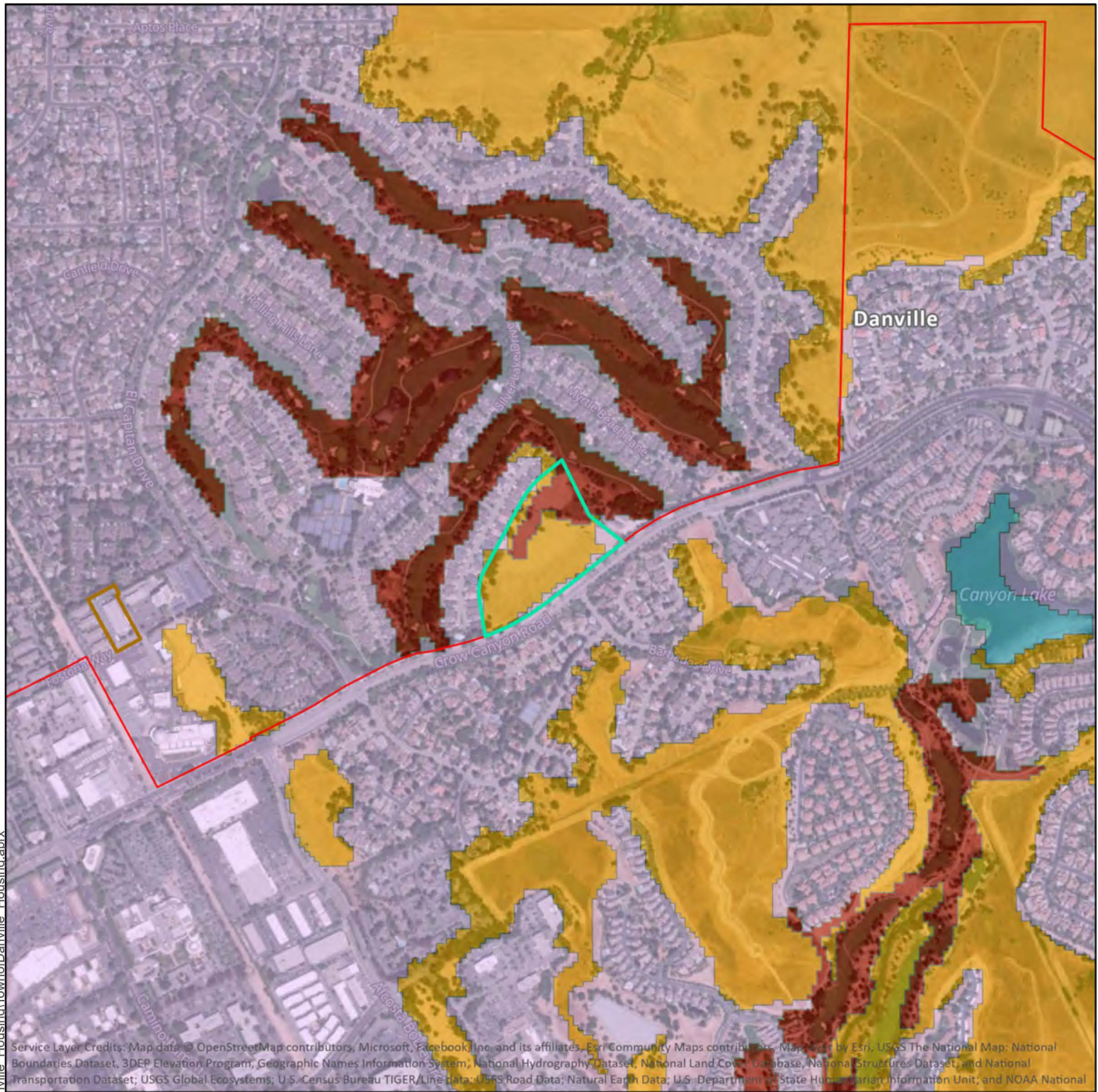
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- | | |
|--|--|
| Danville City Limits | Non-native/
Ornamental Con/
Hwd Mixture |
| sub areas | Mixed Riparian
Hardwood |
| 3 | Coast Live Oak |
| 7 | Blue Oak |
| Calveg Type | Valley Oak |
| Agriculture | Urban |
| Annual Grasses/
Forbs | |
| Non-native/
Ornamental Grass | |



1:11,000



Service Layer Credits: Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Mapbox by Esri, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National


 Danville City Limits


sub areas

 7

 8

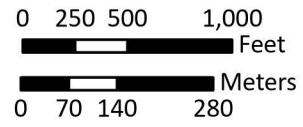
Calveg Type

 Annual Grasses/
Forbs

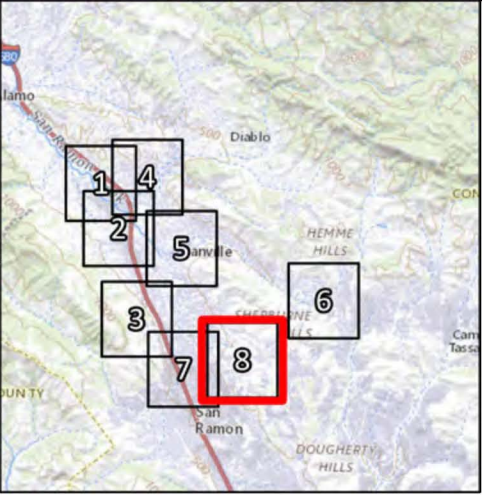
 Non-native/
Ornamental Grass

 Urban

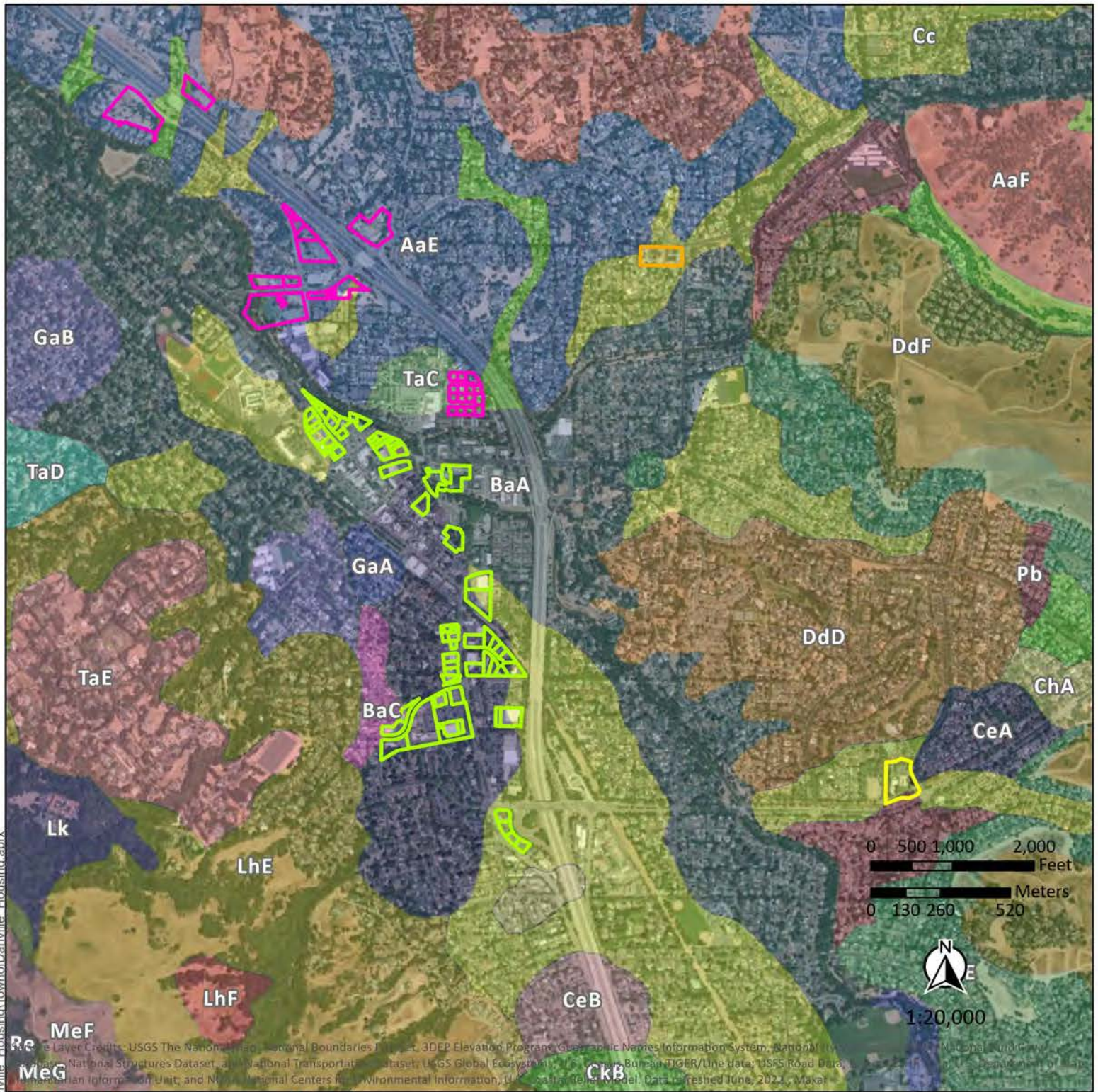
 Water



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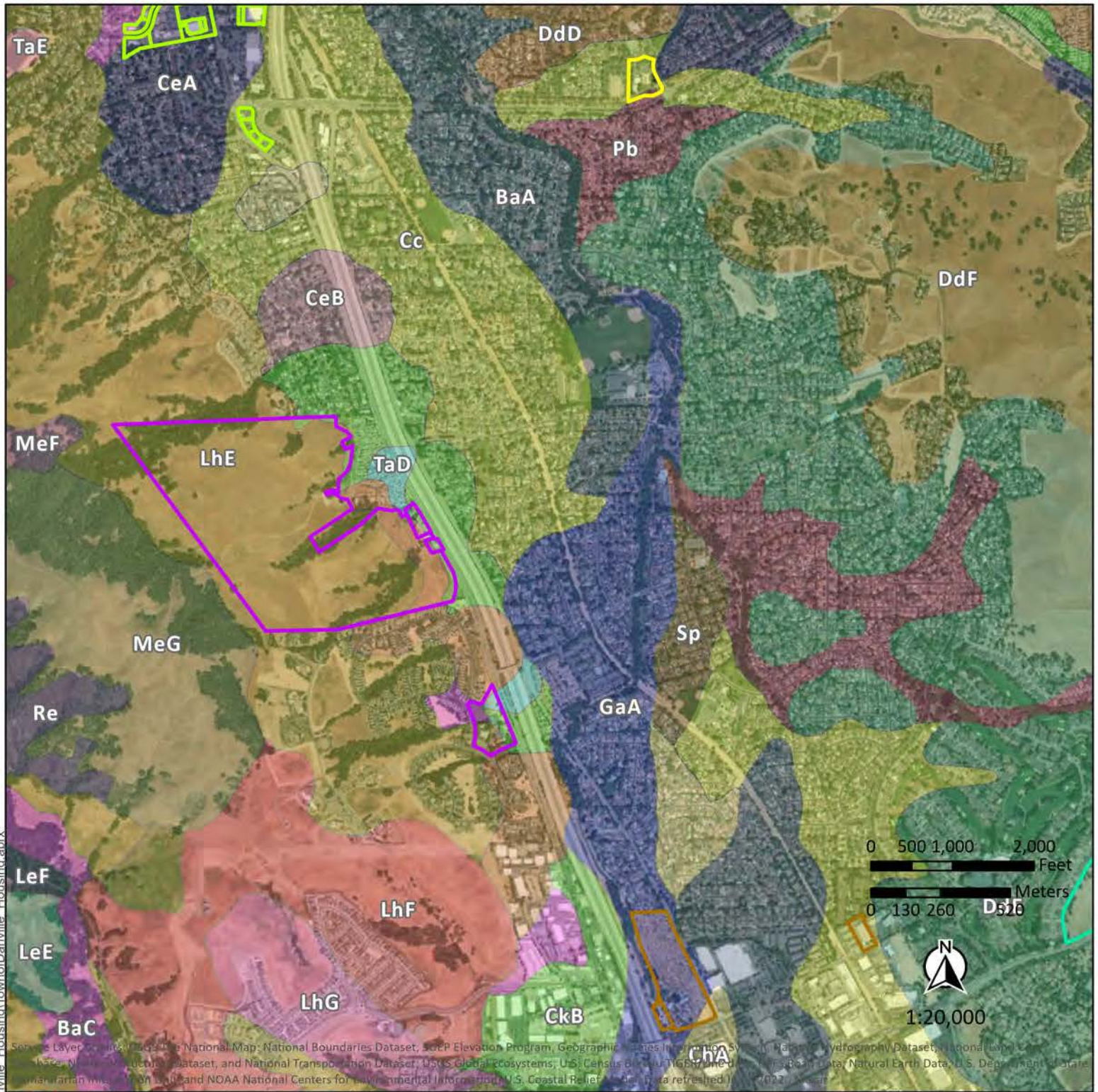


Author: AurelieMuckenhirn
Coordinate System: NAD 1983 2011
StatePlane California III FIPS 0403 Ft US



sub areas 1 2 4 5	MUSYM, Mapunit Name AaE, Alo clay, 15 to 30 percent slopes AaF, Alo clay, 30 to 50 percent slopes, MLRA 15 BaA, Botella clay loam, 0 to 2 percent slopes, MLRA 14 BaC, Botella clay loam, 2 to 5 percent slopes Cc, Clear Lake clay, 0 to 3 percent slopes, MLRA 14 CeA, Conejo clay loam, 0 to 2 percent slopes, MLRA 14 CeB, Conejo clay loam, 2 to 5 percent slopes ChA, Conejo clay loam, clay substratum, 0 to 2 percent slopes CkB, Cropley clay, 2 to 5 percent slopes DdD, Diablo clay, 5 to 25 percent slopes, MLRA 15 DdE, Diablo clay, 15 to 30 percent slopes, MLRA 15 DdF, Diablo clay, 30 to 50 percent slopes, MLRA 15 GaA, Garretson loam, 0 to 2 percent slopes GaB, Garretson loam, 2 to 5 percent slopes LhE, Los Osos clay loam, 15 to 30 percent slopes LhF, Los Osos clay loam, 30 to 50 percent slopes MeF, Millsholm loam, 15 to 50 percent slopes, moist, MLRA 15 MeG, Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15 Pb, Pescadero clay loam, 0 to 6 percent slopes, MLRA 14 Re, Rock outcrop-Xerorthents association TaC, Tierra loam, 2 to 9 percent slopes, MLRA 14 TaD, Tierra loam, 9 to 15 percent slopes, MLRA 14 TaE, Tierra loam, 15 to 30 percent slopes, MLRA 14	Cc, Clear Lake clay, 0 to 3 percent slopes, MLRA 14 CeA, Conejo clay loam, 0 to 2 percent slopes, MLRA 14 CeB, Conejo clay loam, 2 to 5 percent slopes ChA, Conejo clay loam, clay substratum, 0 to 2 percent slopes CkB, Cropley clay, 2 to 5 percent slopes DdD, Diablo clay, 5 to 25 percent slopes, MLRA 15 DdE, Diablo clay, 15 to 30 percent slopes, MLRA 15 DdF, Diablo clay, 30 to 50 percent slopes, MLRA 15 GaA, Garretson loam, 0 to 2 percent slopes GaB, Garretson loam, 2 to 5 percent slopes LhE, Los Osos clay loam, 15 to 30 percent slopes LhF, Los Osos clay loam, 30 to 50 percent slopes MeF, Millsholm loam, 15 to 50 percent slopes, moist, MLRA 15 MeG, Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15 Pb, Pescadero clay loam, 0 to 6 percent slopes, MLRA 14 Re, Rock outcrop-Xerorthents association TaC, Tierra loam, 2 to 9 percent slopes, MLRA 14 TaD, Tierra loam, 9 to 15 percent slopes, MLRA 14 TaE, Tierra loam, 15 to 30 percent slopes, MLRA 14
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Author: AurelieMuckenhirn
 Coordinate System: NAD 1983 2011
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Sources: Layer 1: National Map; National Boundaries Dataset, SDEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Wetlands Inventory, National Wetlands Dataset, and National Transportation Dataset; USGS Global Ecosystems; US Census Bureau TigerLine Data; USGS Bathymetry Data; Natural Earth Data; U.S. Department of State; National Oceanic and Atmospheric Administration; NOAA National Centers for Environmental Information; U.S. Coastal Relief Data. Data refreshed 1/1/2022.



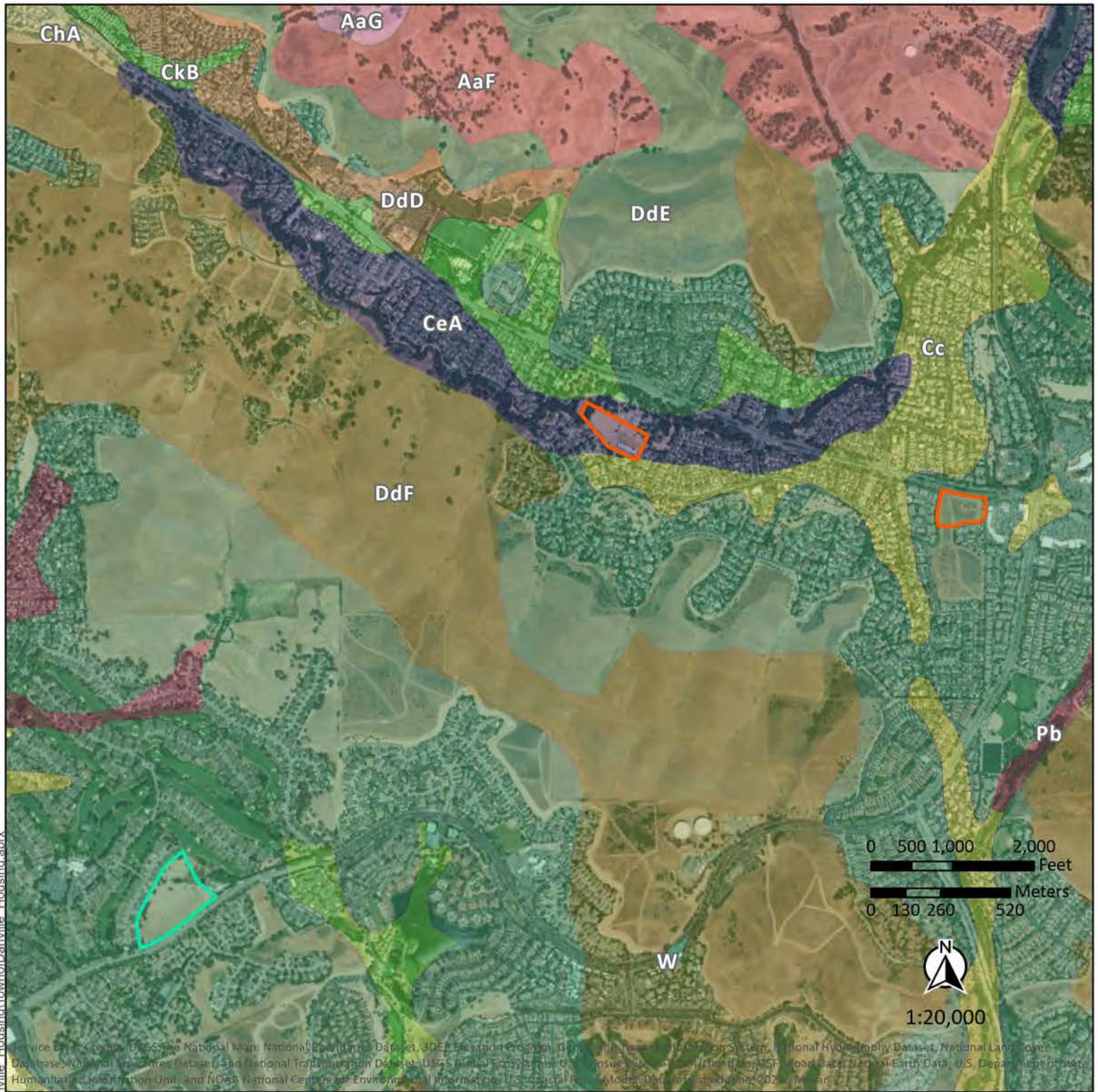
sub areas 2 3 5 7 8	Cc, Clear Lake clay, 0 to 3 percent slopes, MLRA 14 CeA, Conejo clay loam, 0 to 2 percent slopes, MLRA 14 CeB, Conejo clay loam, 2 to 5 percent slopes ChA, Conejo clay loam, clay substratum, 0 to 2 percent slopes CkB, Cropley clay, 2 to 5 percent slopes	DdD, Diablo clay, 5 to 25 percent slopes, MLRA 15 DdE, Diablo clay, 15 to 30 percent slopes, MLRA 15 DdF, Diablo clay, 30 to 50 percent slopes, MLRA 15 GaA, Garretson loam, 0 to 2 percent slopes LeE, Los Gatos loam, 15 to 30 percent slopes LeF, Los Gatos loam, 30 to 50 percent slopes	LhE, Los Osos clay loam, 15 to 30 percent slopes LhF, Los Osos clay loam, 30 to 50 percent slopes LhG, Los Osos clay loam, 50 to 75 percent slopes MeG, Millsholm loam, 15 to 50 percent slopes, moist, MLRA 15 MeF, Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15	Pb, Pescadero clay loam, 0 to 6 percent slopes, MLRA 14 Re, Rock outcrop-Xerorhents association Sp, Sycamore silty clay loam, clay substratum TaD, Tierra loam, 9 to 15 percent slopes, MLRA 14 TaE, Tierra loam, 15 to 30 percent slopes, MLRA 14
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MUSYM, Mapunit Name
BaA, Botella clay loam, 0 to 2 percent slopes, MLRA 14
BaC, Botella clay loam, 2 to 9 percent slopes, MLRA 14

Author: Aurelie Muckenhirn
 Coordinate System: NAD 1983 2011
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Service Data is derived from the National Map: National Boundaries Dataset, 3DEP Elevation Program, 3DEP Hydrography Dataset, National Hydrography Dataset, National Land Cover Database, National Wetlands Inventory, and National Transportation Dataset. USGS National Wetlands Inventory, USGS National Hydrography Dataset, National Land Cover Database, National Wetlands Inventory, and National Transportation Dataset. USGS National Wetlands Inventory, USGS National Hydrography Dataset, National Land Cover Database, National Wetlands Inventory, and National Transportation Dataset. USGS National Wetlands Inventory, USGS National Hydrography Dataset, National Land Cover Database, National Wetlands Inventory, and National Transportation Dataset.



sub areas

- 6
- 8

MUSYM, Mapunit Name

- AaF,Alo clay, 30 to 50 percent slopes, MLRA 15
- AaG,Alo clay, 50 to 75 percent slopes
- Cc,Clear Lake clay, 0 to 3 percent slopes, MLRA 14

- CeA,Conejo clay loam, 0 to 2 percent slopes, MLRA 14
- ChA,Conejo clay loam, clay substratum, 0 to 2 percent slopes
- CkB,Cropley clay, 2 to 5 percent slopes
- DdD,Diablo clay, 5 to 25 percent slopes, MLRA 15

- DdE,Diablo clay, 15 to 30 percent slopes, MLRA 15
- DdF,Diablo clay, 30 to 50 percent slopes, MLRA 15
- Pb,Pescadero clay loam, 0 to 6 percent slopes, MLRA 14
- W,Water

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 Coordinate System: NAD 1983 2011
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