

Merkel & Associates, Inc.

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February 17, 2023

M&A #22-092-01

Mr. Tom Cartier
University City Fire Safe Council

**Re: Brush Management Assessment on Government Land
Conducted for the University City Fire Safe Council,
City of San Diego, San Diego County**

Dear Tom:

INTRODUCTION:

Many homes in the University City (UC) area are located immediately adjacent to the Rose Canyon and San Clemente Canyon tributary watersheds that border government owned lands including City of San Diego (City) designated Open Space and Caltrans right of way. Open Space is dedicated City parkland including canyons that is free from development and reflects natural environmental characteristics with various types of dense vegetation, including brush, shrubs, and trees. There is also considerable natural or naturalized vegetation in this area that occurs within private ownership.

State and local codes require a 100-foot defensible space between natural canyon brush and man-made habitable structures. Defensible space is the area where decreased amounts of combustible vegetation reduce the fire propagation potential between canyon brush and habitable structures. Citizens may not be permitted to manage brush in Open Space or Caltrans right of way. As per City code, brush management is required to conform to the City's adapted Brush Management Requirements (SDMC Section 142.0412). **Bulletin #1: Brush Management Guide** found in the City's Brush Management Regulations provides specific management techniques for managing vegetation. This guide (<https://www.sandiego.gov/sites/default/files/legacy/fire/pdf/brushpdf.pdf>) was used as a metric of the brush density evaluation conducted by Merkel & Associates (M&A).

METHODS

An assessment of vegetation occurring on government owned land that occurs within 100 feet of privately owned habitable structures was conducted by M&A. The survey focused on areas specified by the University City Fire Council. These areas included east-facing chaparral and/or coastal sage scrub dominated slopes that are susceptible to westerly Santa Ana wind conditions which have been shown to exacerbate fire conditions. Most of the study consisted of a desktop GIS analysis using the most current aerial imagery that is available (Maxar 2022). Areas within 100 feet of habitable structures abutting government (i.e., City, Caltrans, San Diego Unified School District) owned land were analyzed based on density of vegetation and subsequent fire threat severity. Mapping was then field-truthed by using high powered binoculars (8 x 42) from accessible viewing locations. In areas that could not be accessed for viewing, the 2022 aerial imagery was the only source used for mapping.

RESULTS

Maps for the investigated areas are attached with an overview (Overview Figure), followed by seven enlargement figures (Figures A-G). Maps display property lines between private and municipal property (SanGIS 2023). Areas of vegetation supporting the highest shrub/tree density were mapped as Severe Density. These areas were often dominated by dense phase coastal sage scrub or southern mixed chaparral which included relatively high fuel load species such as lemonade berry (*Rhus integrifolia*), toyon (*Heteromeles arbutifolia*), and common chamise (*Adenostoma fasciculatum*). In addition, these areas may also include native trees such as coast live oak (*Quercus agrifolia*), or non-native trees such as pine (*Pinus* spp.) and eucalyptus (*Eucalyptus* spp.). In some cases, coastal sage scrub dominated by coastal sagebrush (*Artemisia californica*) and flat-top buckwheat (*Eriogonum fasciculatum* var. *fasciculatum*) was included in this category where shrub density was high. Most areas mapped as Severe Density appear to exhibit conditions that exceed City brush management zone (BMZ) 2 standards which require no more than 50 percent cover of shrubs greater than 2 feet in height. Areas mapped as Moderate Density likely exceed BMZ 2 standards but are dominated by lower growing, less woody, and lower fuel load coastal sage scrub species such as coastal sagebrush, flat-top buckwheat, white sage (*Salvia apiana*), coast monkey flower (*Diplacus puniceus*), as well as similar structured non-native ornamental plants. Areas mapped as sparse density support the least shrub/tree density and are typically dominated by low growing grasses and forbs (native and non-native), invasive non-native succulents (i.e., hottentot fig), as well as occasional native and non-native shrubs. These areas most likely meet BMZ 2 requirements, but further on-site investigation would be required to make this determination.

It should be noted that it was evident in several areas that brush management activities had taken place. Vegetation had been properly thinned and pruned and expected regrowth was occurring. These areas were also mapped according to density.

If you have any questions regarding this letter, please do not hesitate to contact M&A biologist, Kyle Ince at kince@merkelinc.com or (858) 560-5465.

Sincerely,



Keith W. Merkel
Principal Consultant

REFERENCES

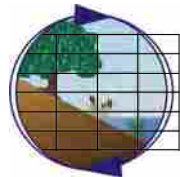
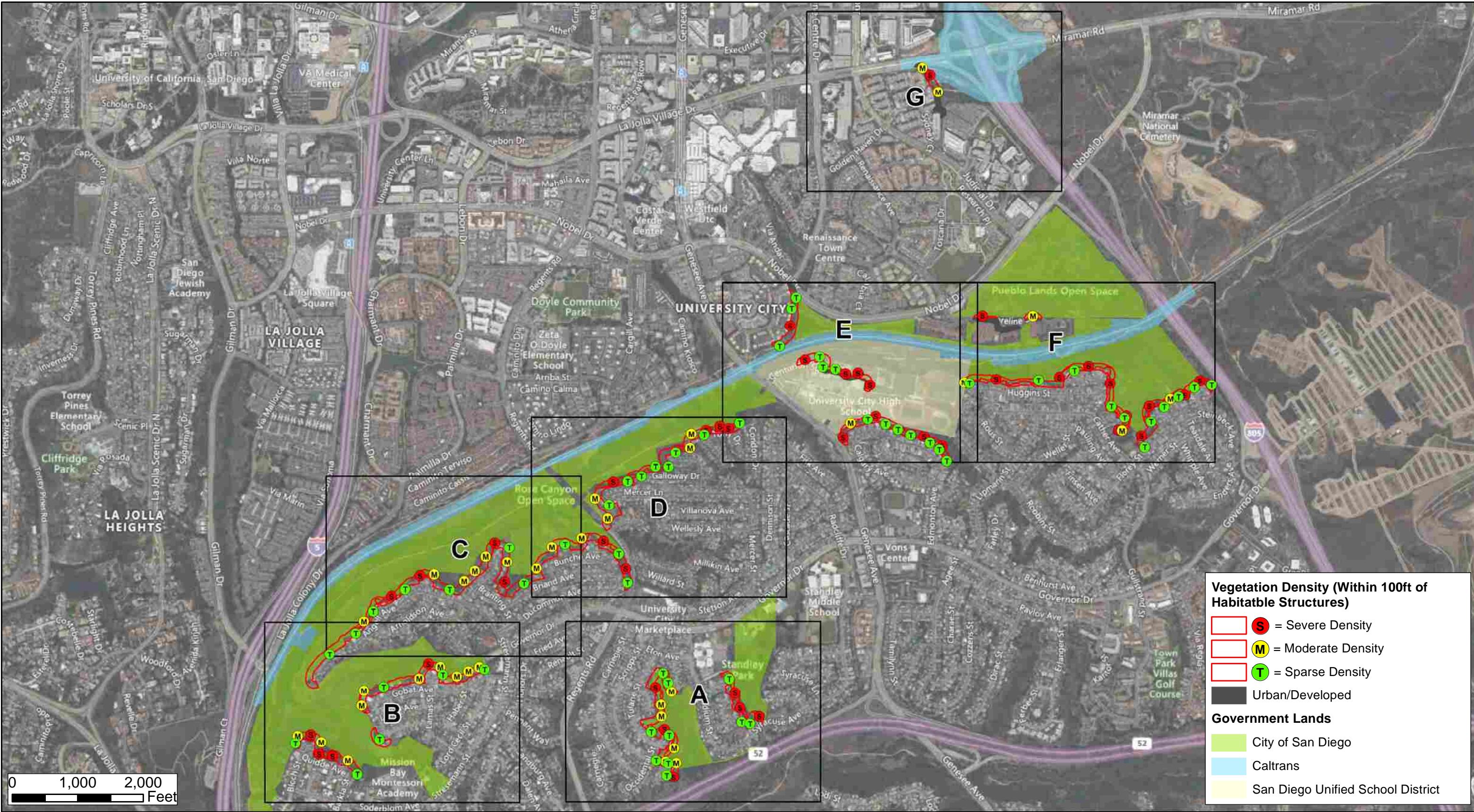
City of San Diego 2023. Brush Management on City-owned Open Space Land: City of San Diego Park and Recreation Department Brush Management Section, (619) 685-1350.

<http://www.sandiego.gov/park-and-recreation/Municipal Code:>

Maxar 2022. Aerial Imagery. Available from: <https://www.esri.com/en-us/home>

San Diego Geographic Information Source (SanGIS). 2023. Taxable Parcels in San Diego County. Taxable Parcel Download (zip) updated 02/06/23 [Internet]. Available from:

<http://www.sangis.org/>.

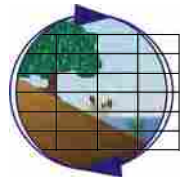


Aerial Source: Bing 2022

Vegetation Density
University City Fire Council Brush Management Assessment

**Overview
Figure**

Created on February 15, 2023

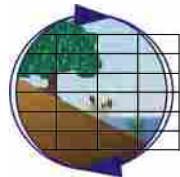


Aerial Source: ESRI 2022

Vegetation Density
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Created on February 15, 2023

Figure A

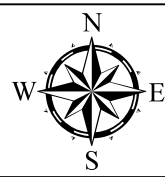
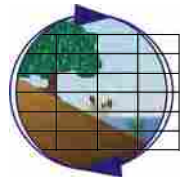
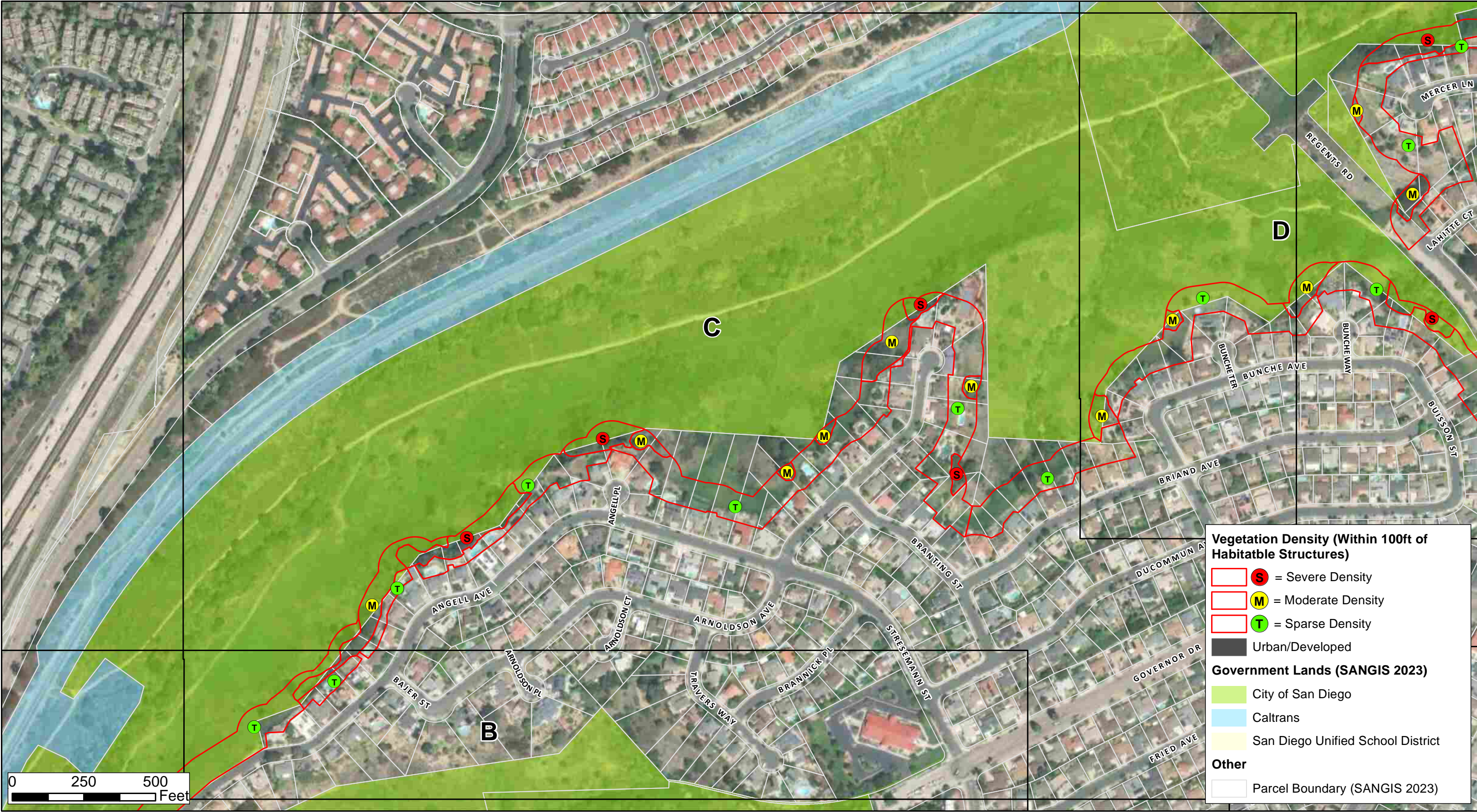


Aerial Source: ESRI 2022

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Figure B



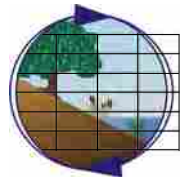
Aerial Source: ESRI 2022

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Figure C

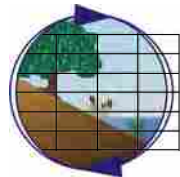


Aerial Source: ESRI 2022

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Figure D



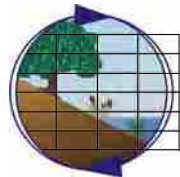
Aerial Source: ESRI 2022

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Figure E

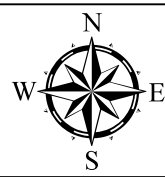
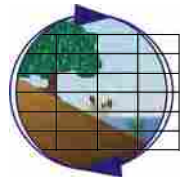


Aerial Source: ESRI 2022

Created on February 15, 2023

Vegetation Density
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Figure F



Aerial Source: ESRI 2022

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Figure G