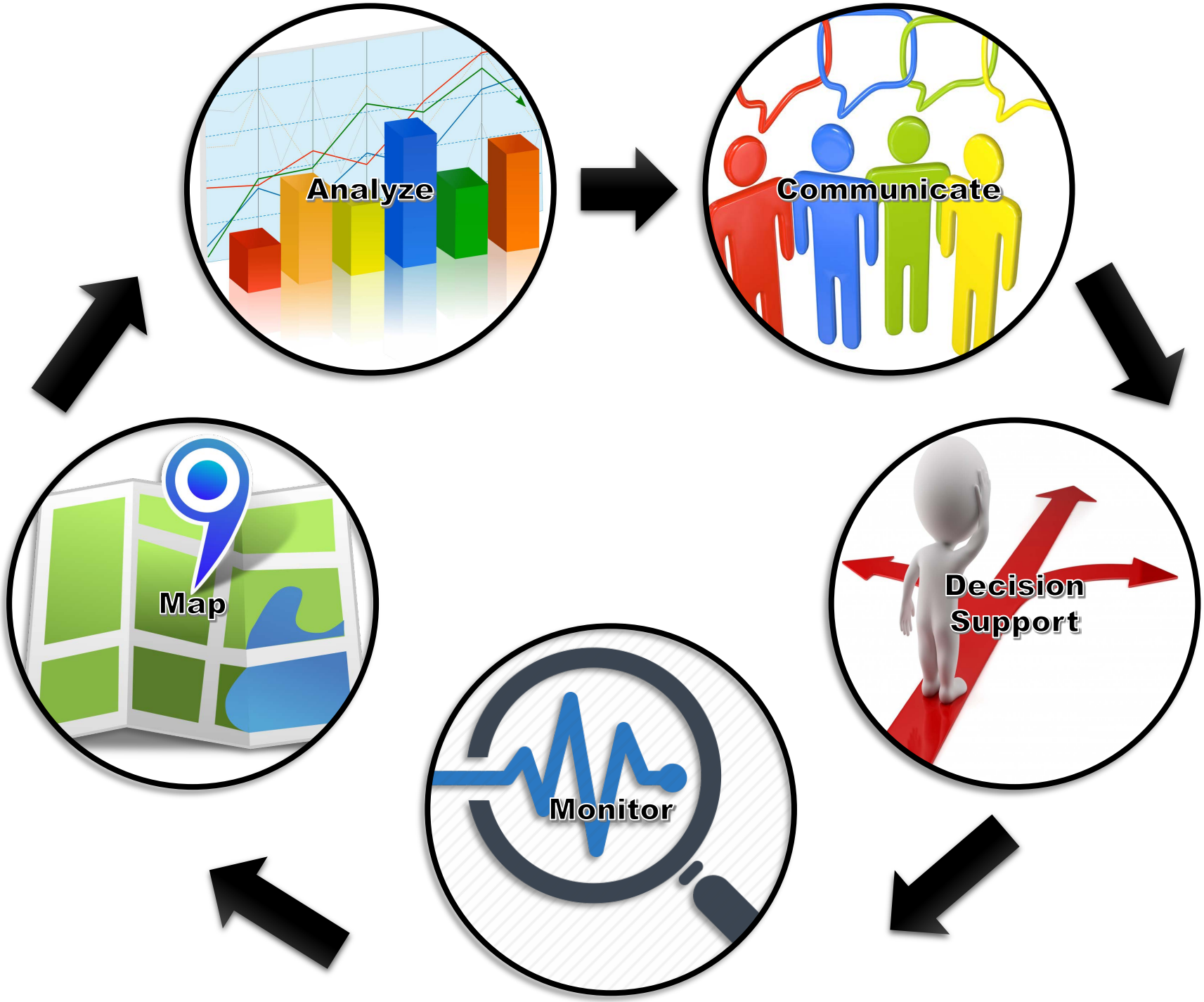
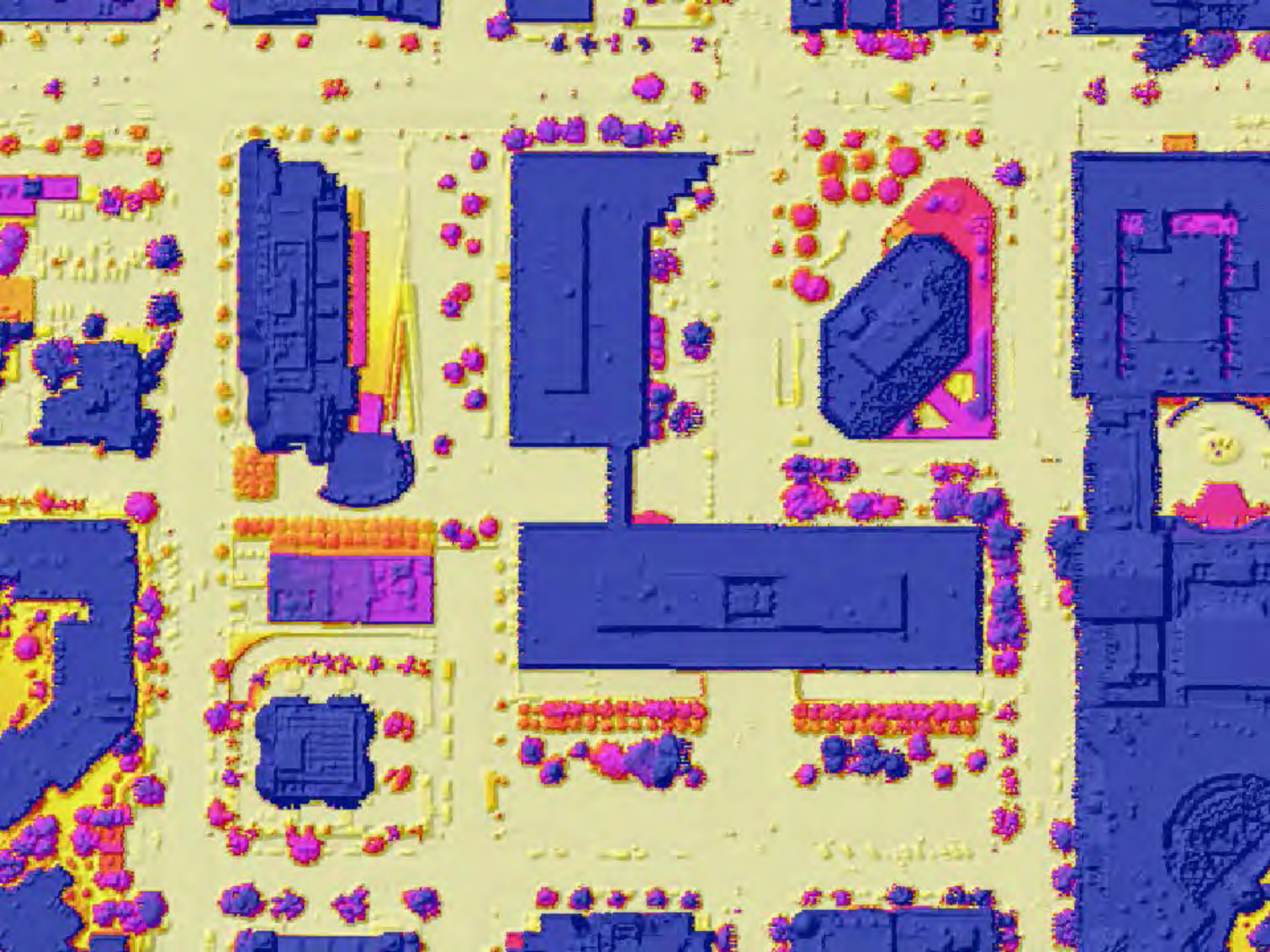
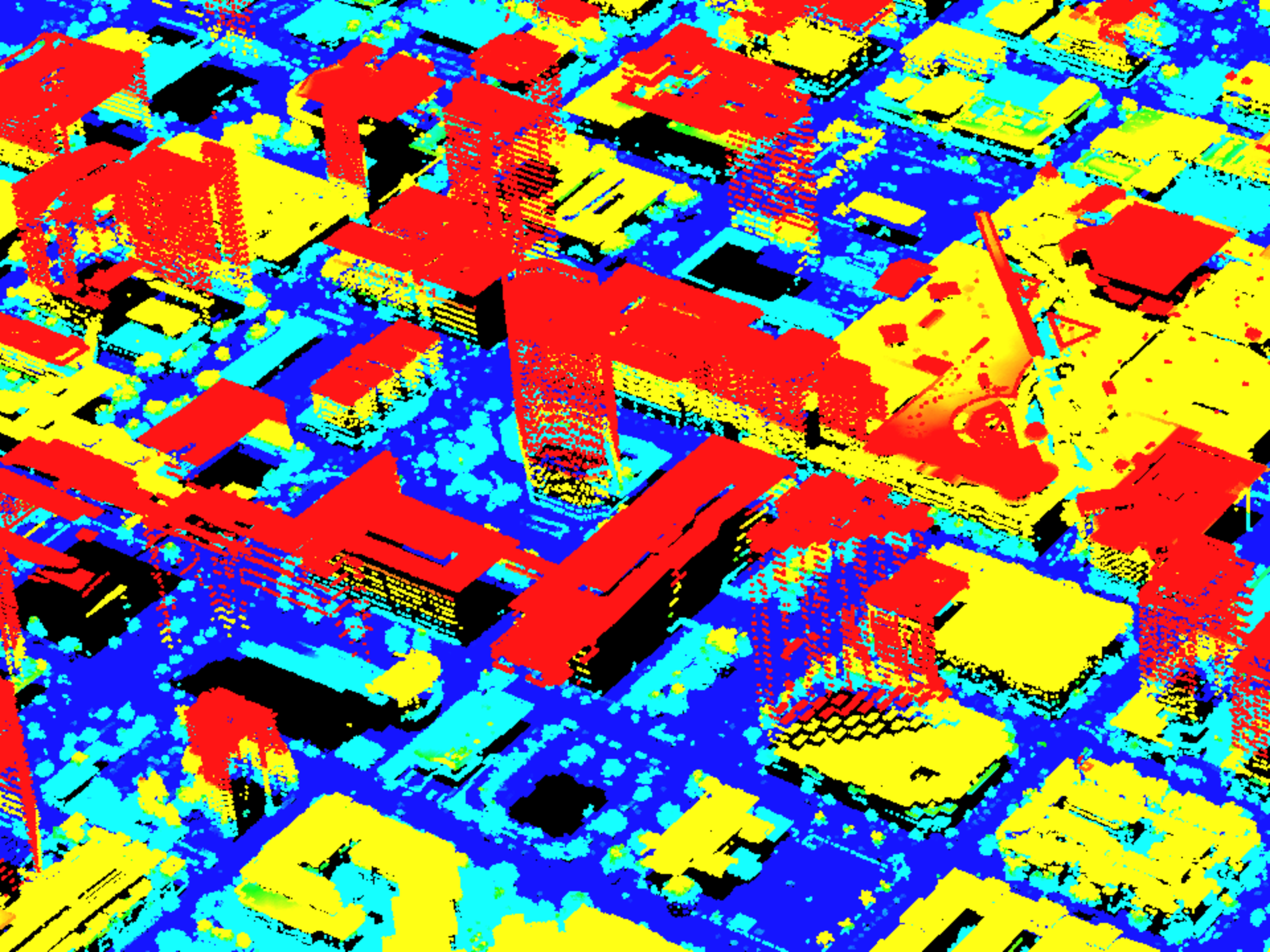
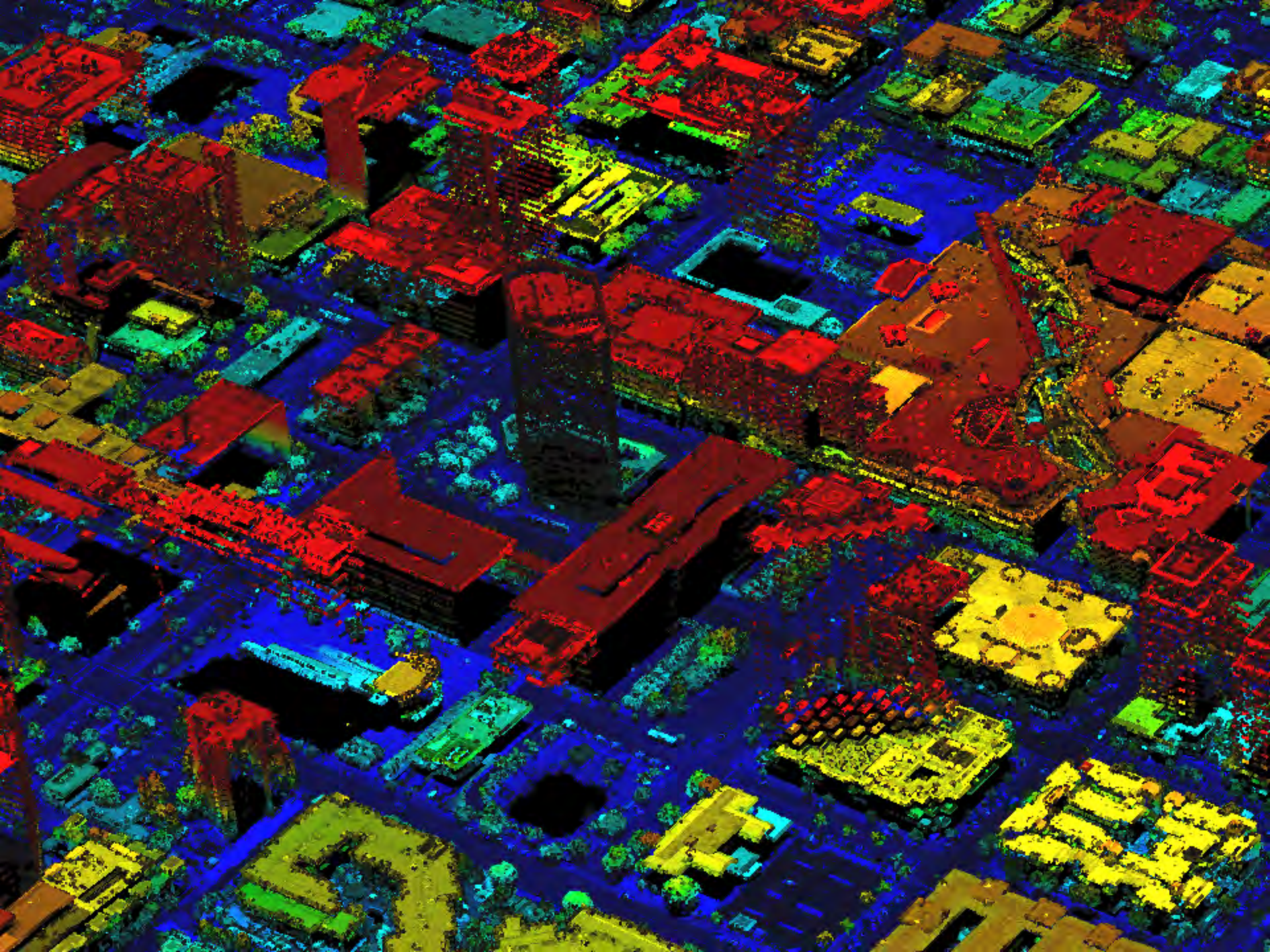
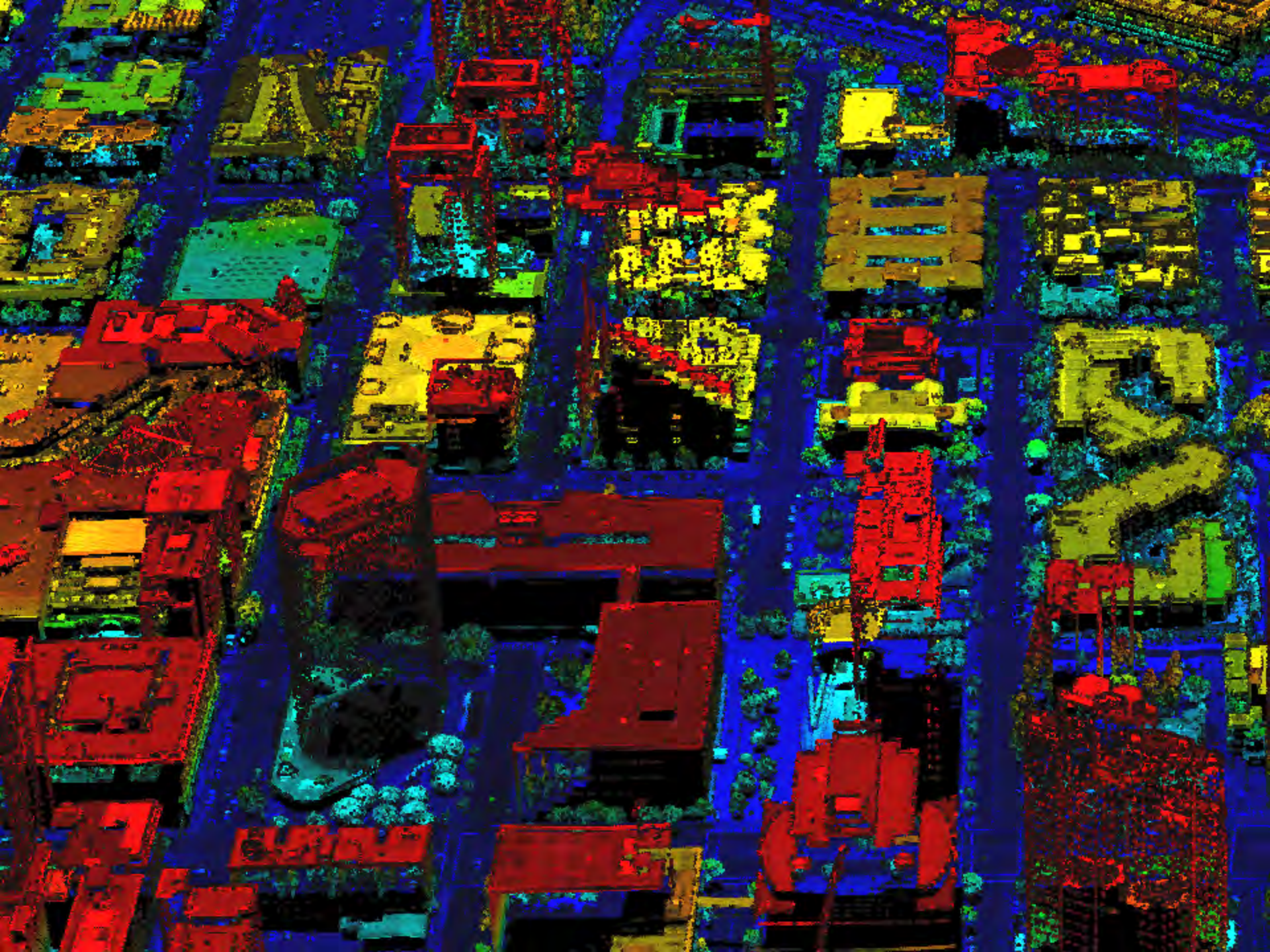
San Diego Tree Canopy Assessment

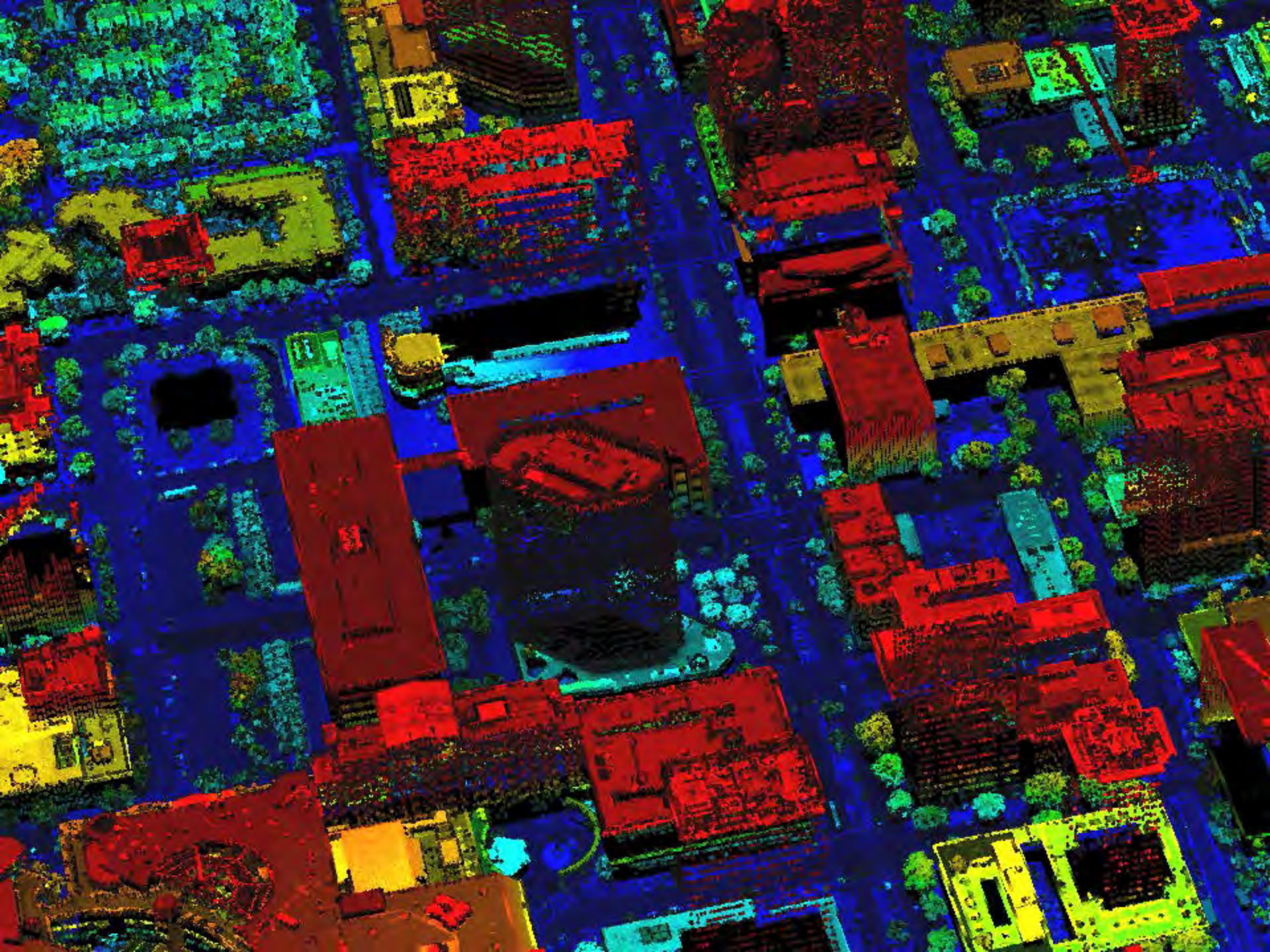

Analyze
Communicate
Decision Support
Monitor
Map

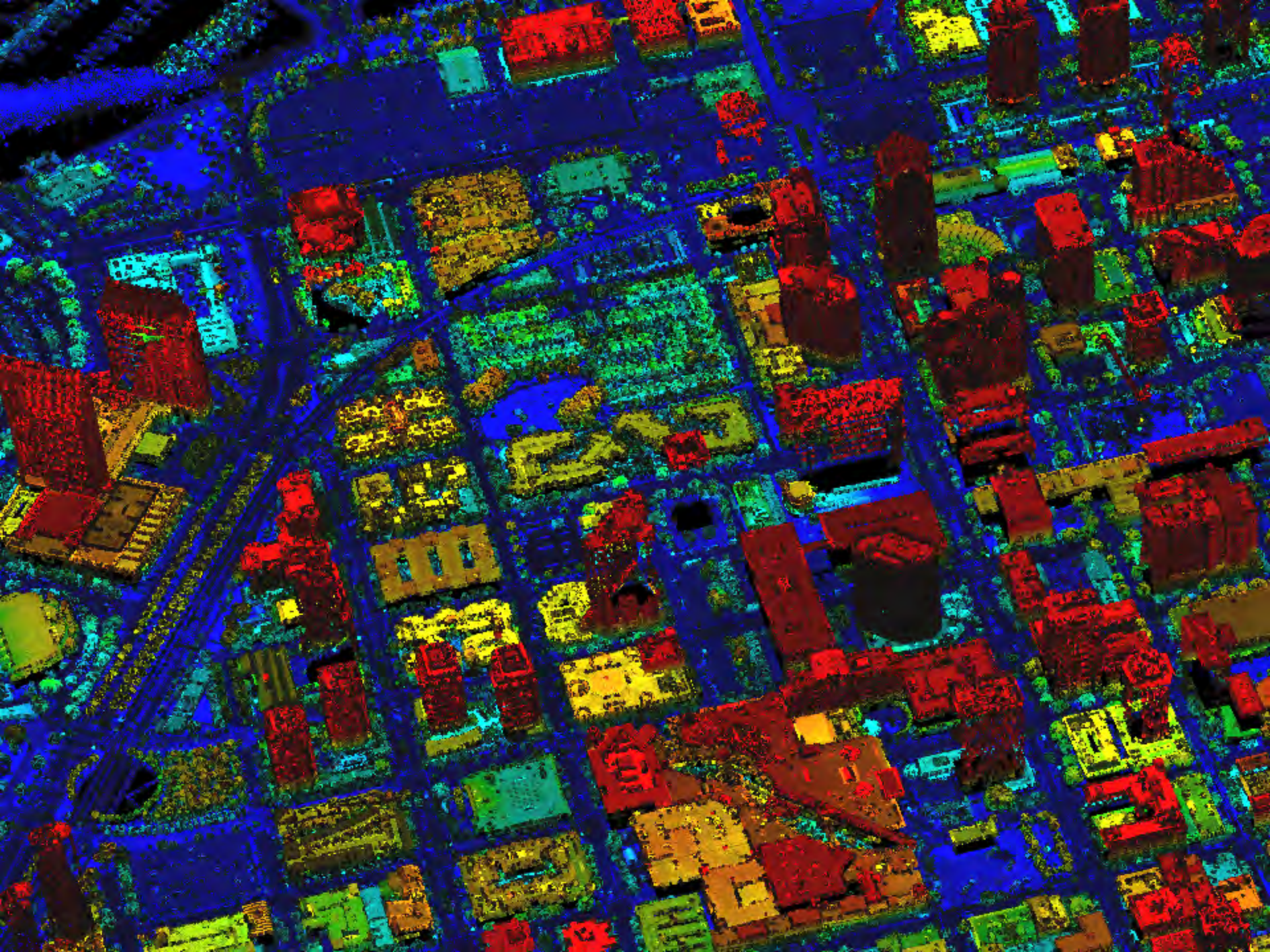


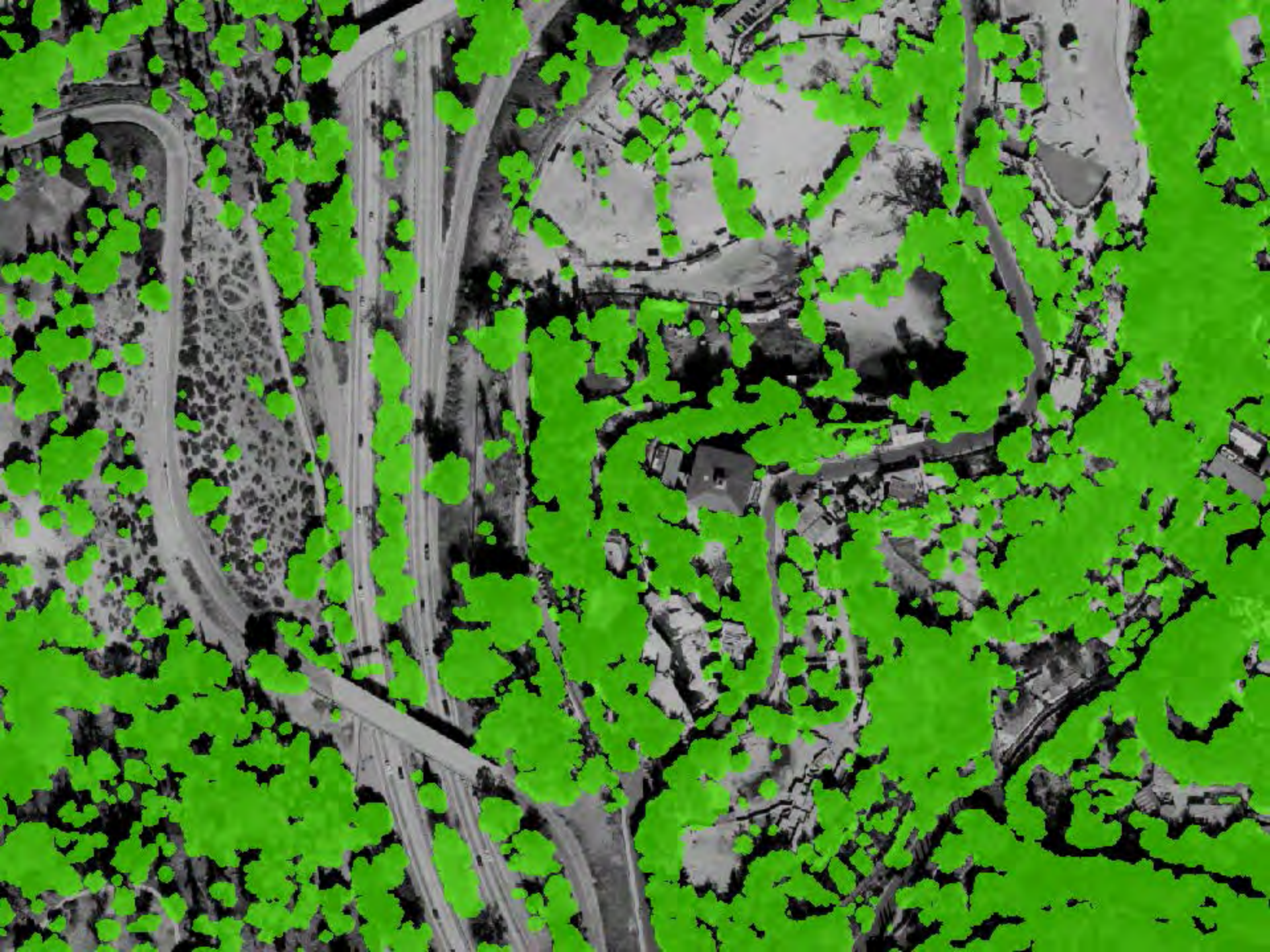




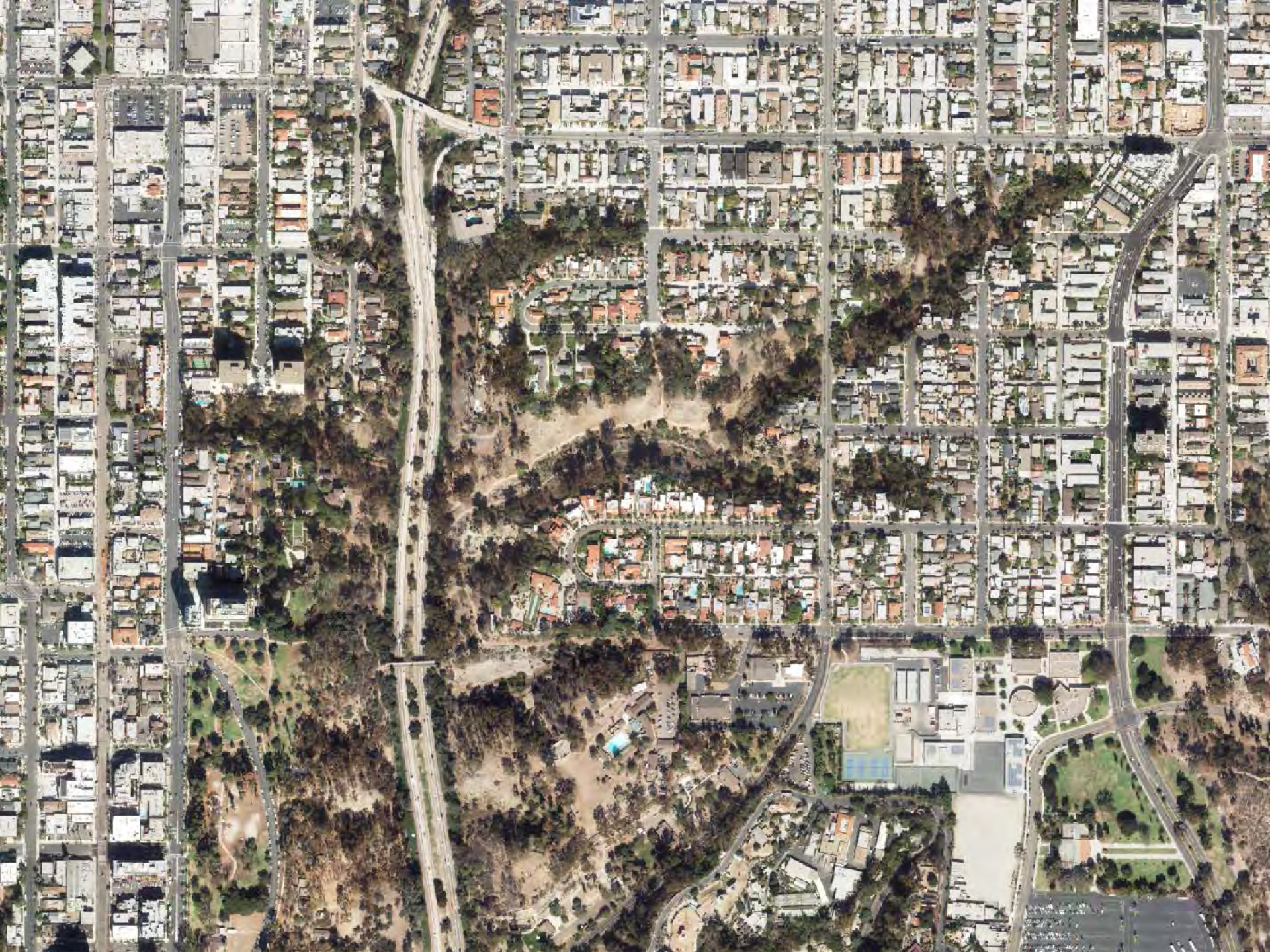


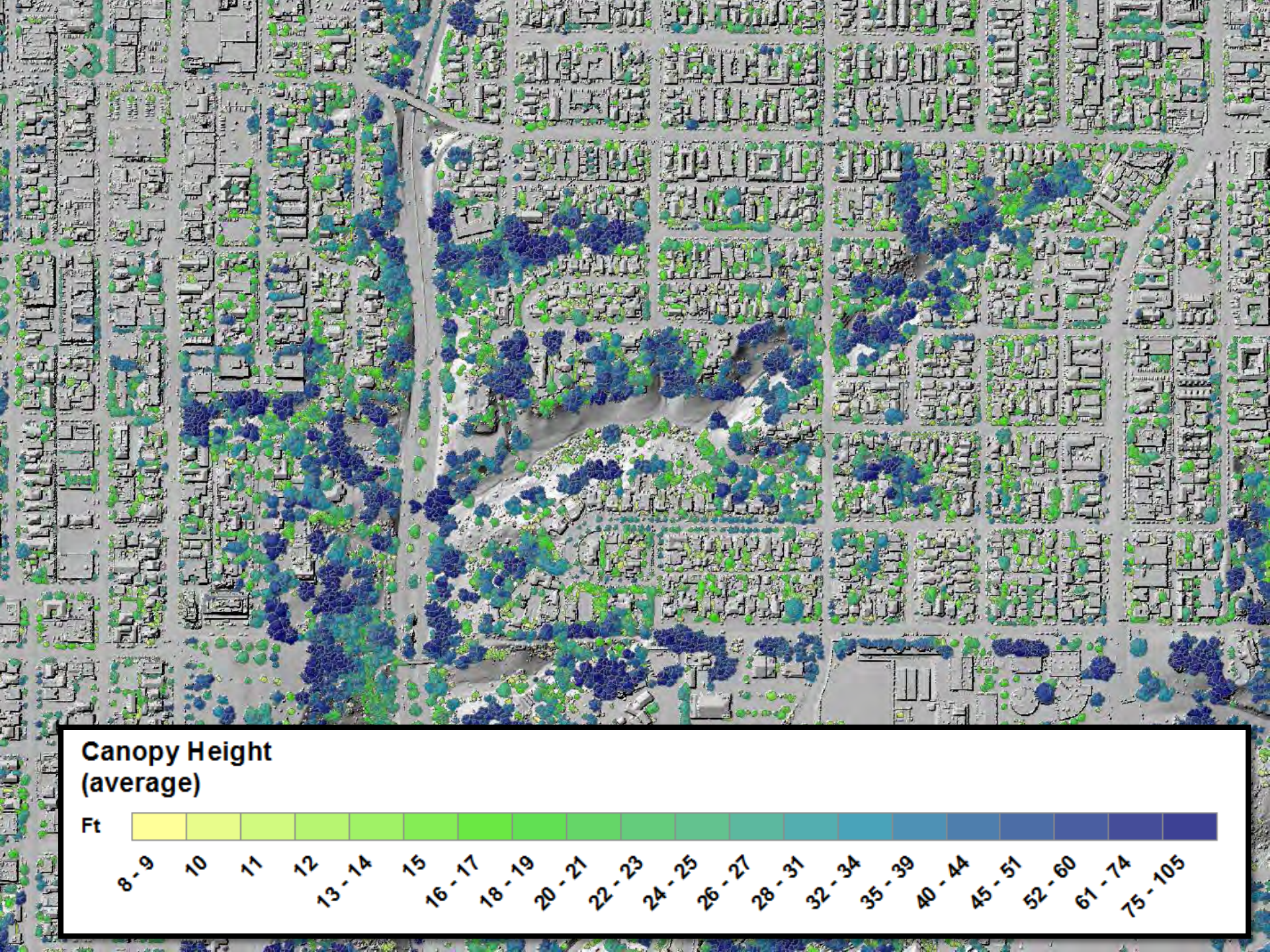


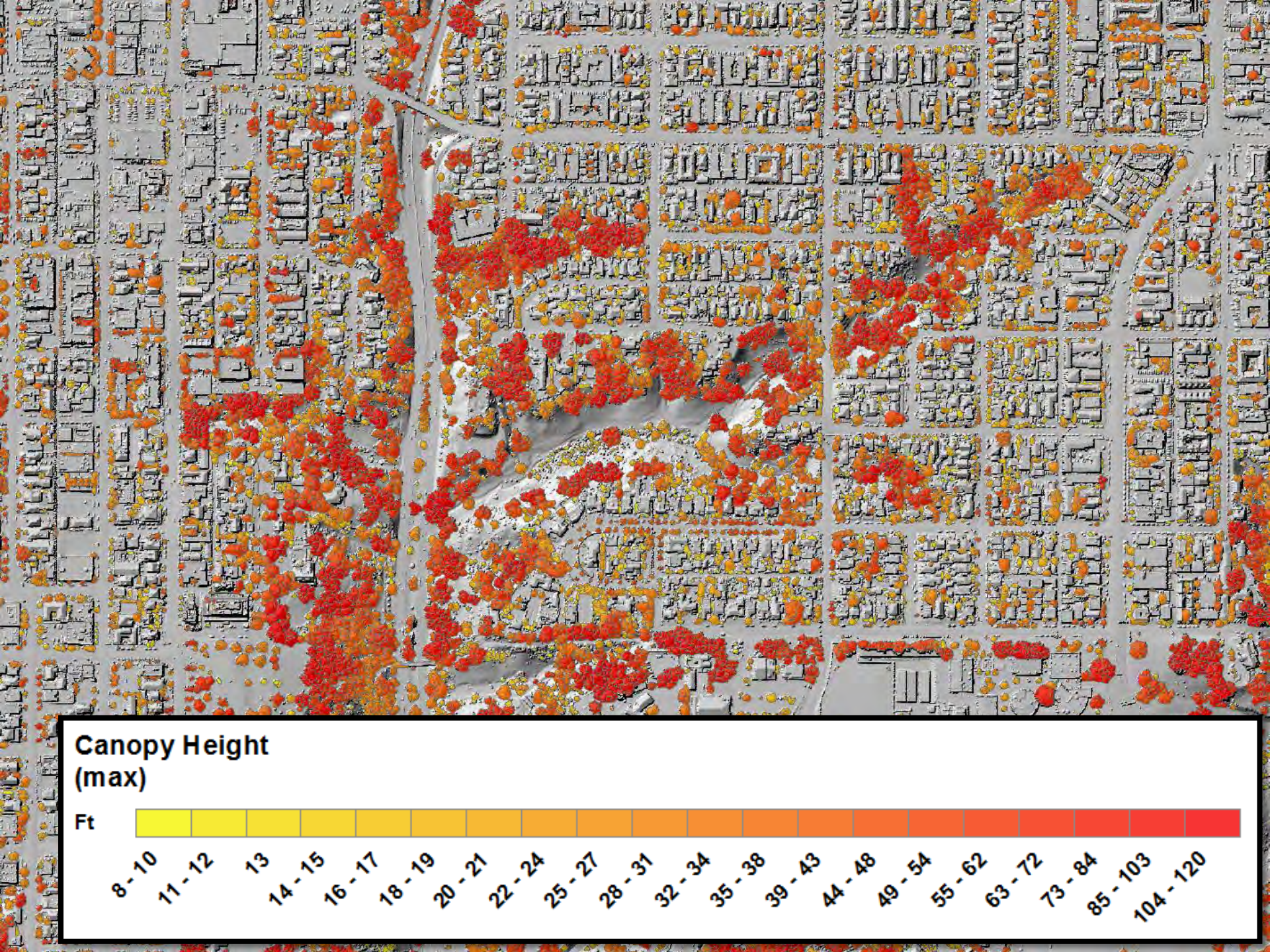




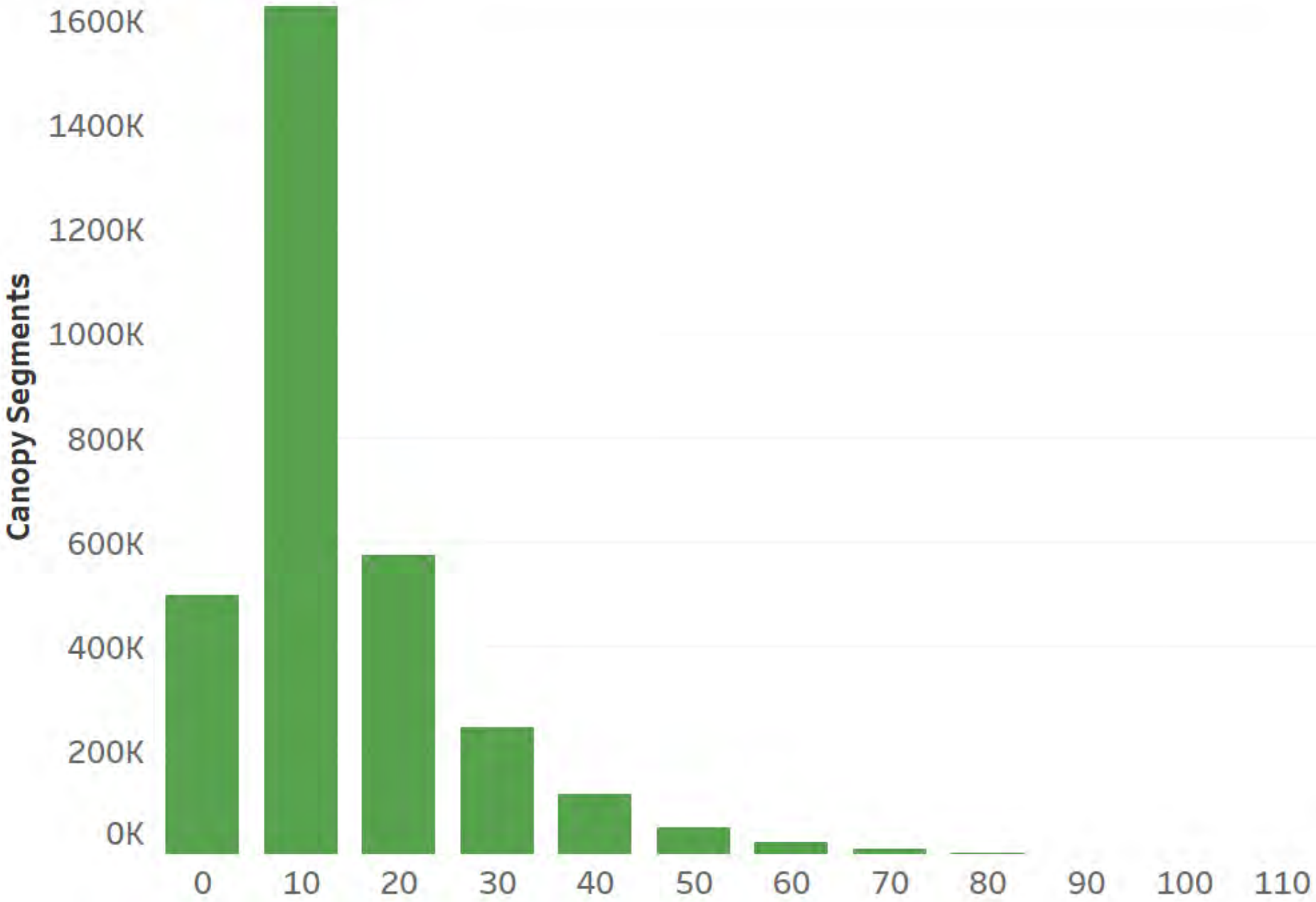
13%

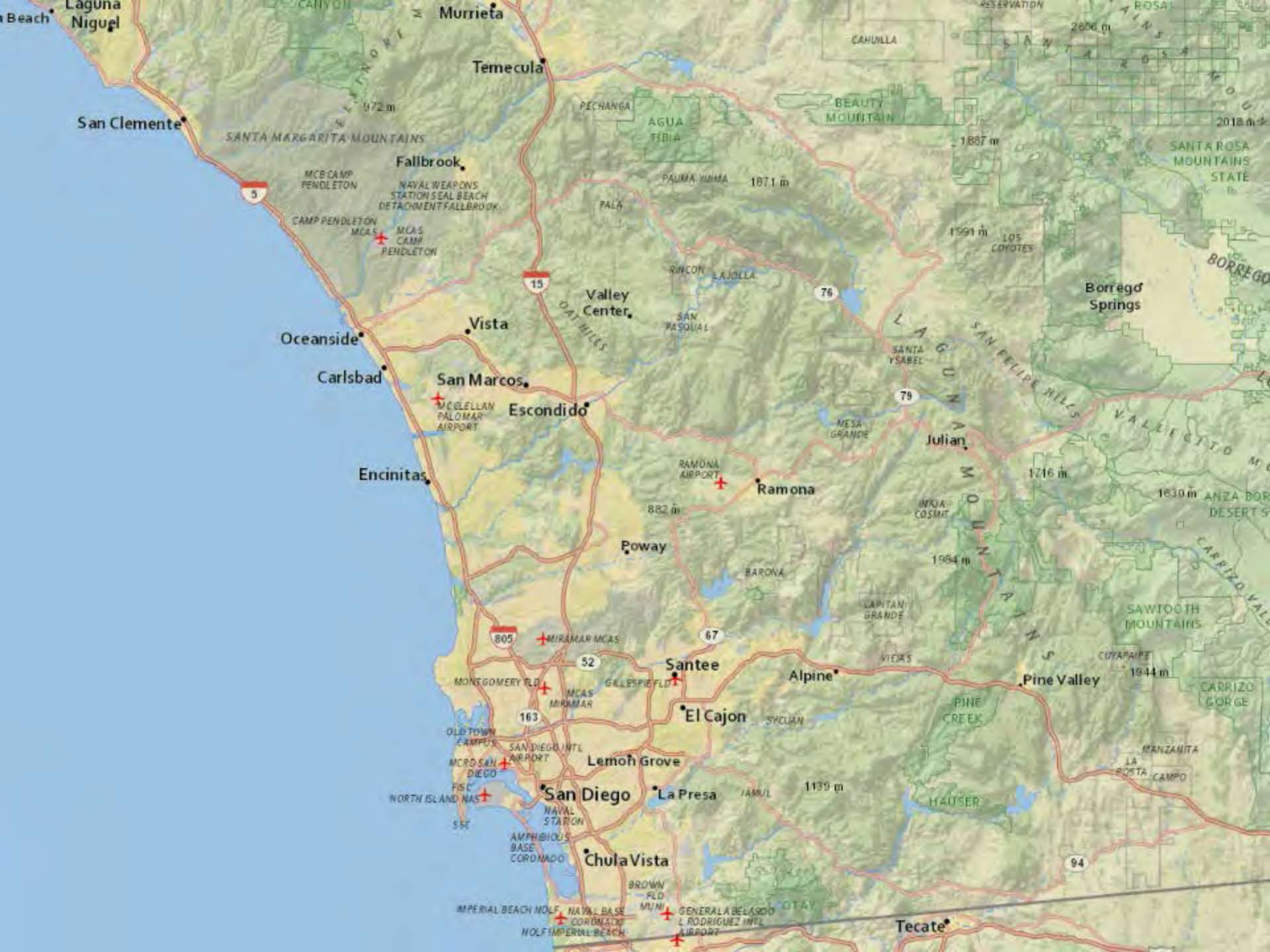


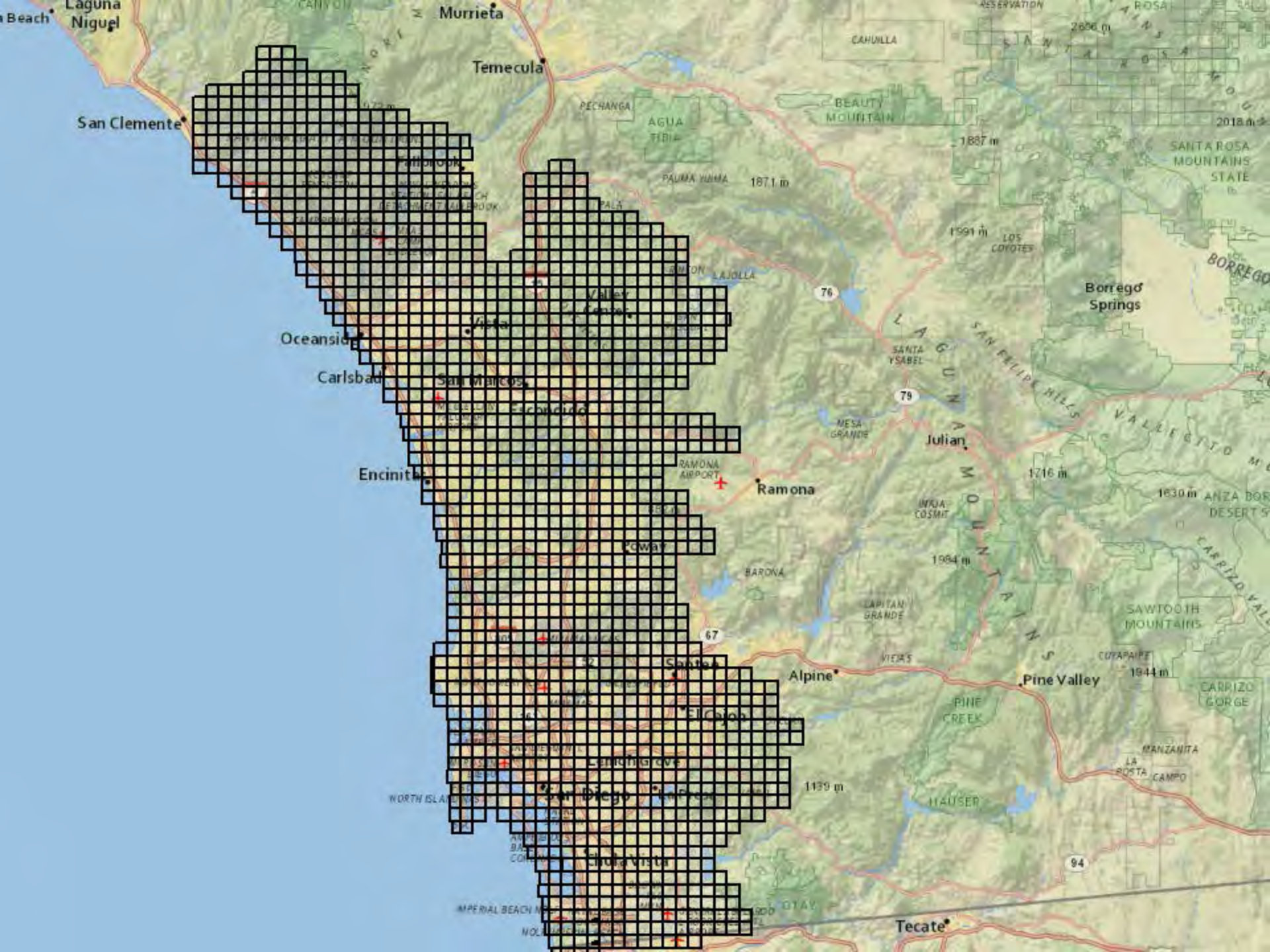

Canopy Height
(average)
Ft
8 - 9
10
11
12
13 - 14
15
16 - 17
18 - 19
20 - 21
22 - 23
24 - 25
26 - 27
28 - 31
32 - 34
35 - 39
40 - 44
45 - 51
52 - 60
61 - 74
75 - 105

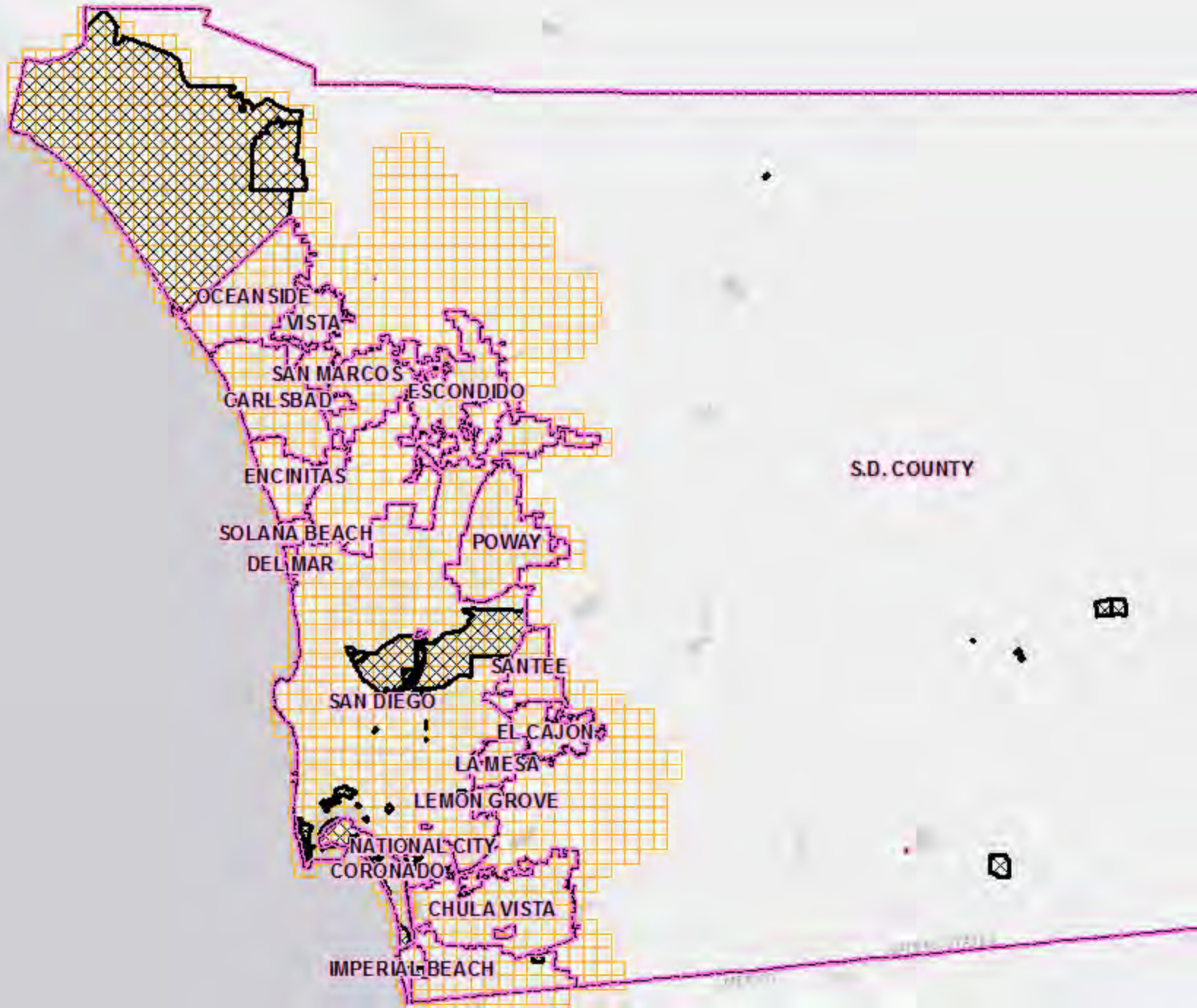

Canopy Height
(max)
Ft
8 - 10
11 - 12
13
14 - 15
16 - 17
18 - 19
20 - 21
22 - 24
25 - 27
28 - 31
32 - 34
35 - 38
39 - 43
44 - 48
49 - 54
55 - 62
63 - 72
73 - 84
85 - 103
104 - 120

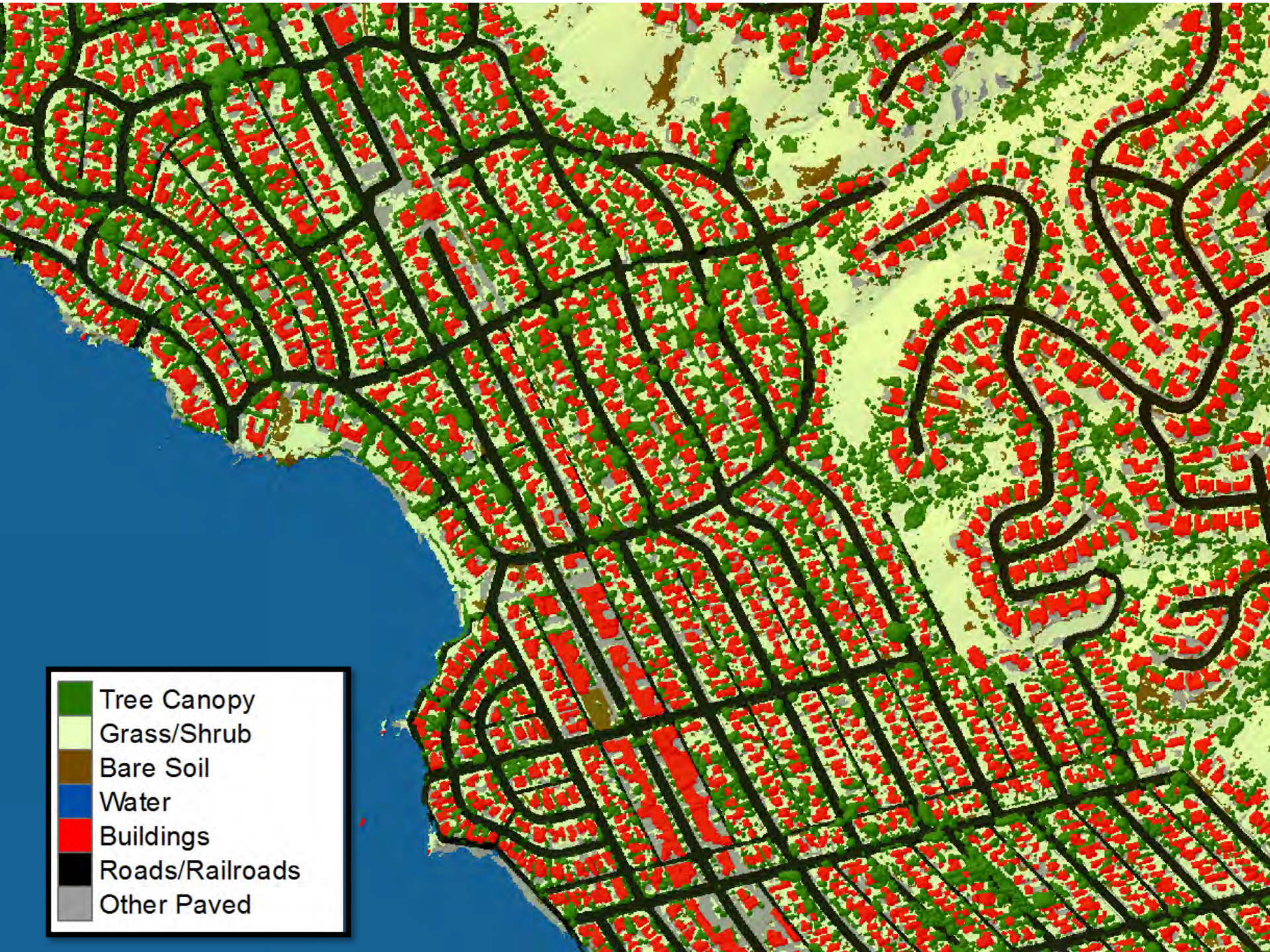
Canopy Height - avg




Laguna Niguel
Murrieta
Temecula
San Clemente
SANTA MARGARITA MOUNTAINS
Fallbrook
MCB CAMP PENDLETON
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT FALLBROOK
CAMP PENDLETON MCAS
MCAS CAMP PENDLETON
Valley Center
Vista
Oceanside
Carlsbad
San Marcos
MCCLELLAN PALOMAR AIRPORT
Escondido
Encinitas
Ramona
RAMONA AIRPORT
Poway
Julian
Borrego Springs
Santee
Alpine
Pine Valley
El Cajon
Lemon Grove
San Diego
La Presa
Chula Vista
Tecate
MIRAMAR MCAS
MONTGOMERY FLD
MCAS MIRAMAR
GILLESPIE FLD
SAN DIEGO INTL AIRPORT
MCRD SAN DIEGO
NORTH ISLAND NAS
NAVAL STATION
AMPHIBIOUS BASE CORONADO
BROWN FLD MUNI
IMPERIAL BEACH NOLF
NAVAL BASE CORONADO
NOLF IMPERIAL BEACH
GENERAL ABELARDO L RODRIGUEZ INTL AIRPORT
PECHANGA
AGUA TIBIA
PALA
RINCON
LA JOLLA
SAN PASQUAL
SANTA YSABEL
MESA GRANDE
BARONA
LAKE HENSHAW
LAKE CUYAMACA
LAKE JENNINGS
LAKE MORENA
LAKE HODGES
LAKE SAN VICENTE
LAKE SAN DIEGO
LAKE OTAY
LAKE HAUSER
BEAUTY MOUNTAIN
CAHUILLA
SANTA ROSA MOUNTAINS STATE
LOS COYOTES
SAWTOOTH MOUNTAINS
CARRIZO GORGE
MANZANITA
LA POSTA
CAMPO
OAT HILLS
SAN FELIPE HILLS
VALLECITO MOUNTAINS
ANZA BORREGO DESERT
CARRIZO VALLEY
5
15
76
79
67
52
163
805
94
2606 m
2018 m
1887 m
1871 m
1991 m
1716 m
1630 m
1984 m
1944 m
1139 m
972 m
882 m


Laguna Niguel
Murrieta
Temecula
San Clemente
Fallbrook
Vista
Oceanside
Carlsbad
San Marcos
Escondido
Encinitas
Ramona
Julian
Borrego Springs
Alpine
Pine Valley
Santee
El Cajon
Lemon Grove
San Diego
National City
Chula Vista
Imperial Beach
Tecate
CAHUILLA
BEAUTY MOUNTAIN
PECHANGA
AGUA TIBIA
PAUMA YUMA
LAJOLLA
SANTA YSABEL
MESA GRANDE
RAMONA AIRPORT
INKA COSMIT
BARONA
LAPITAN GRANDE
VIEJAS
PINE CREEK
HAUSER
LOS COYOTES
SANTA ROSA MOUNTAINS STATE
SAWTOOTH MOUNTAINS
CARRIZO GORGE
MANZANITA
LA POSTA
CAMPO
OTAY
NORTH ISLAND NAS
LAGUNA MOUNTAINS
SAN FELIPE HILLS
VALLECITO
ANZA BORREGO DESERT
76
79
67
94
2606 m
2018 m
1887 m
1871 m
1991 m
1716 m
1630 m
1984 m
1944 m
1139 m


OCEANSIDE
VISTA
SAN MARCOS
CARLSBAD
ESCONDIDO
ENCINITAS
S.D. COUNTY
SOLANA BEACH
POWAY
DEL MAR
SANTEE
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
NATIONAL CITY
CORONADO
CHULA VISTA
IMPERIAL BEACH


Tree Canopy
Grass/Shrub
Bare Soil
Water
Buildings
Roads/Railroads
Other Paved

HOW MUCH TREE CANOPY DO WE HAVE?

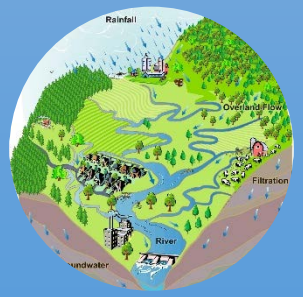
NOT SUITABLE

Parcel

Census

Neighborhood

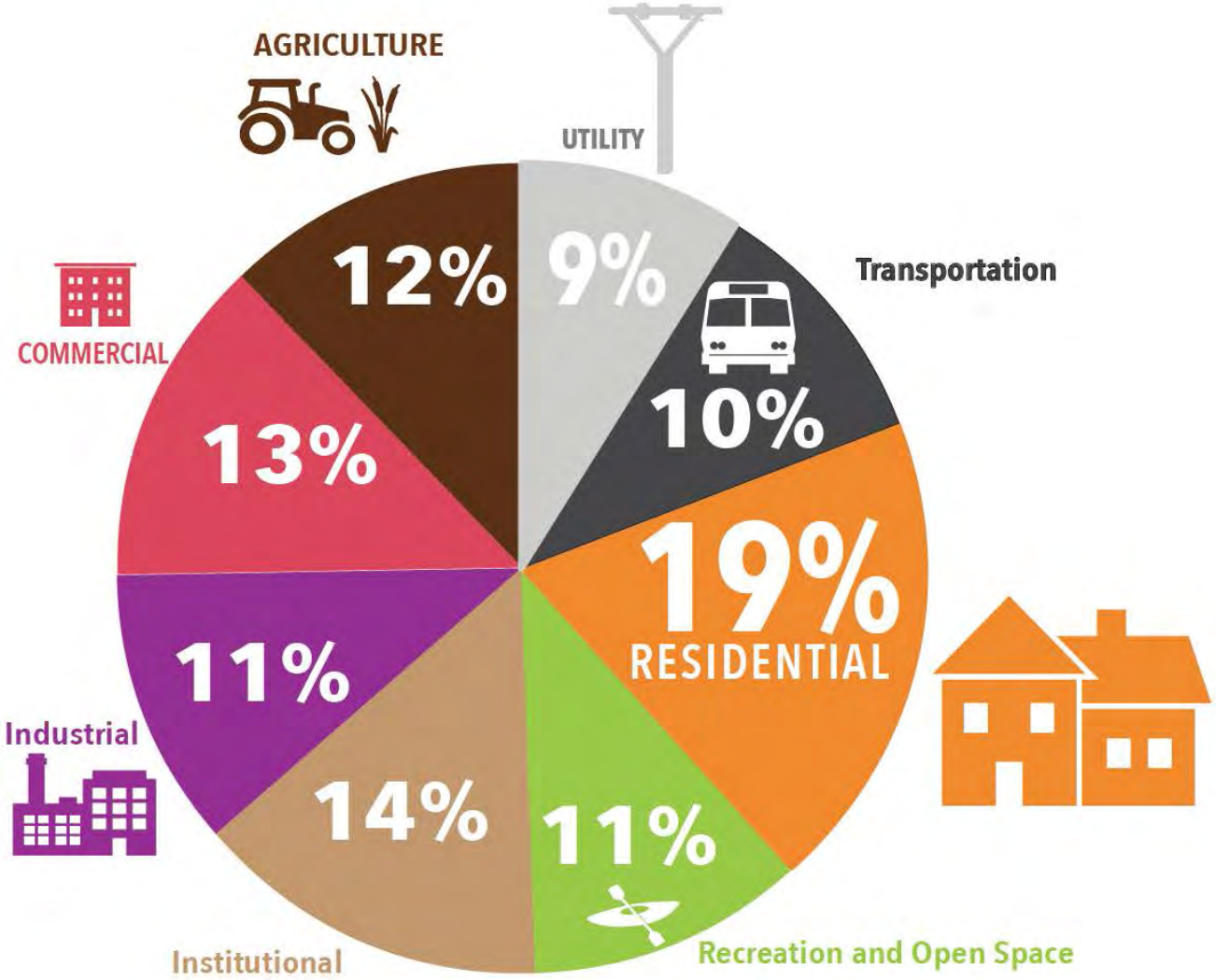
City



Watershed

WHO OWNS THE TREES?

DISTRIBUTION OF TREE CANOPY



WHERE CAN WE IMPROVE?

LAND AVAILABLE FOR NEW TREE CANOPY

ACRES

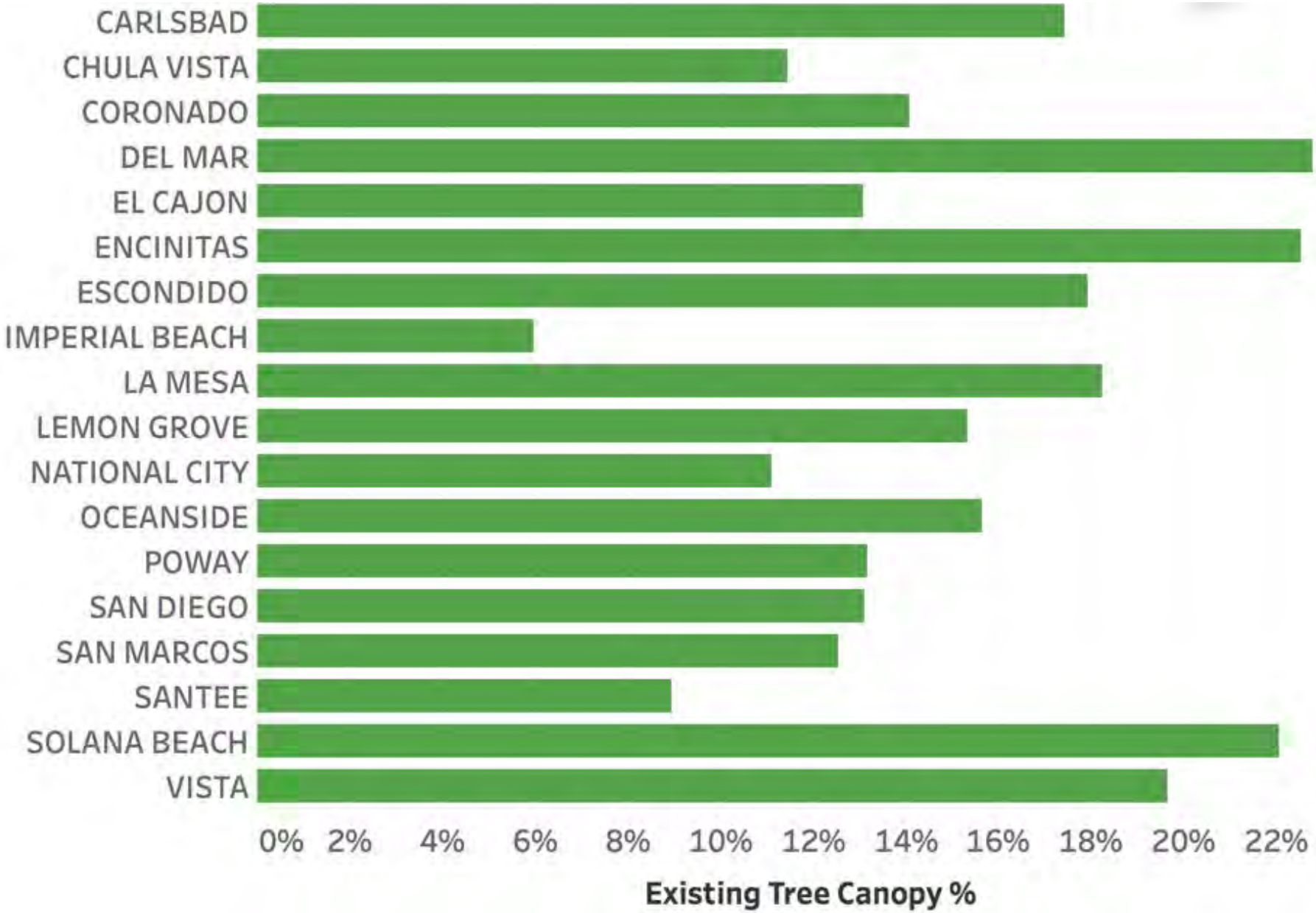
73357
Recreational & Open Space

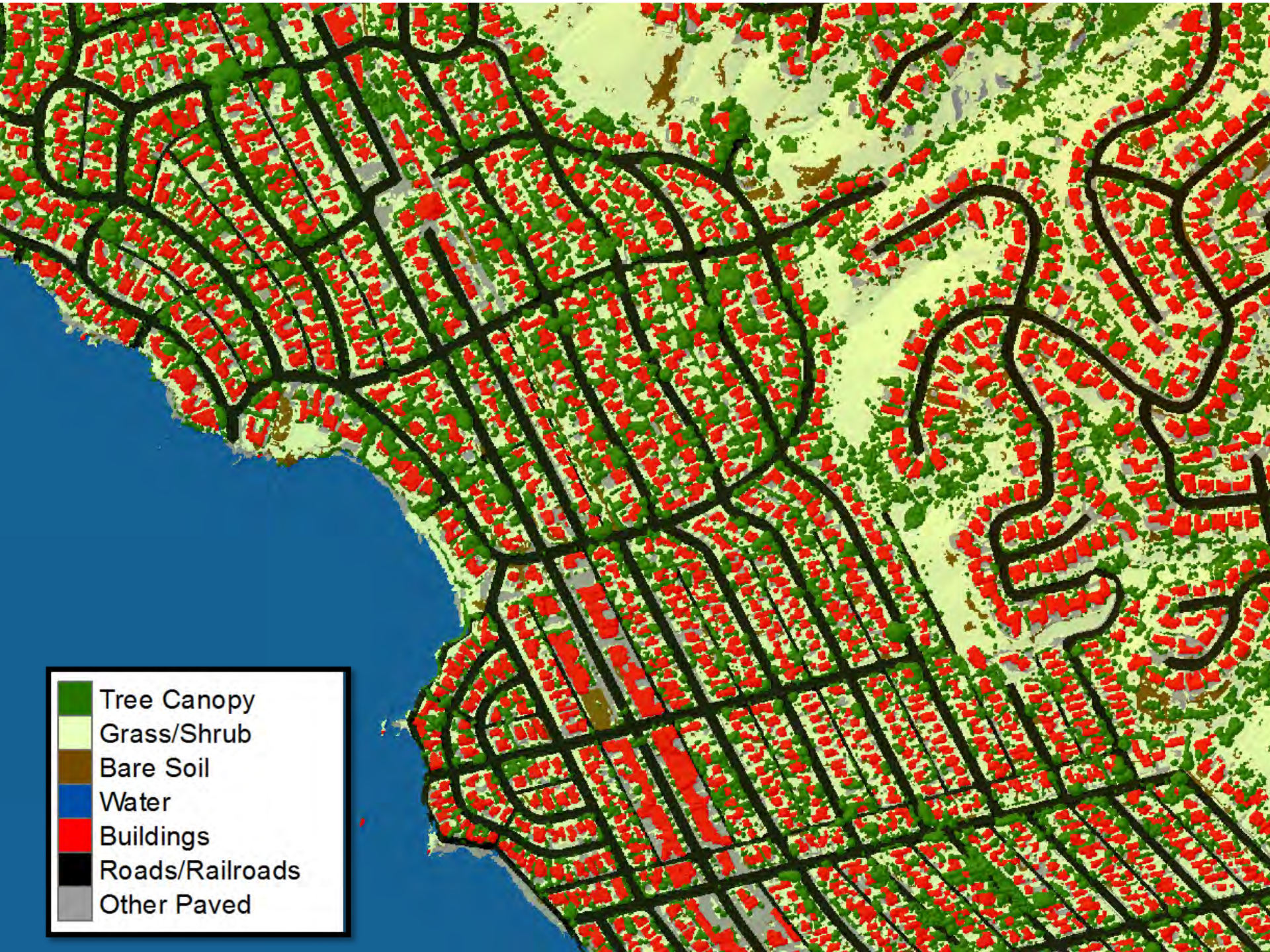
26623
Residential

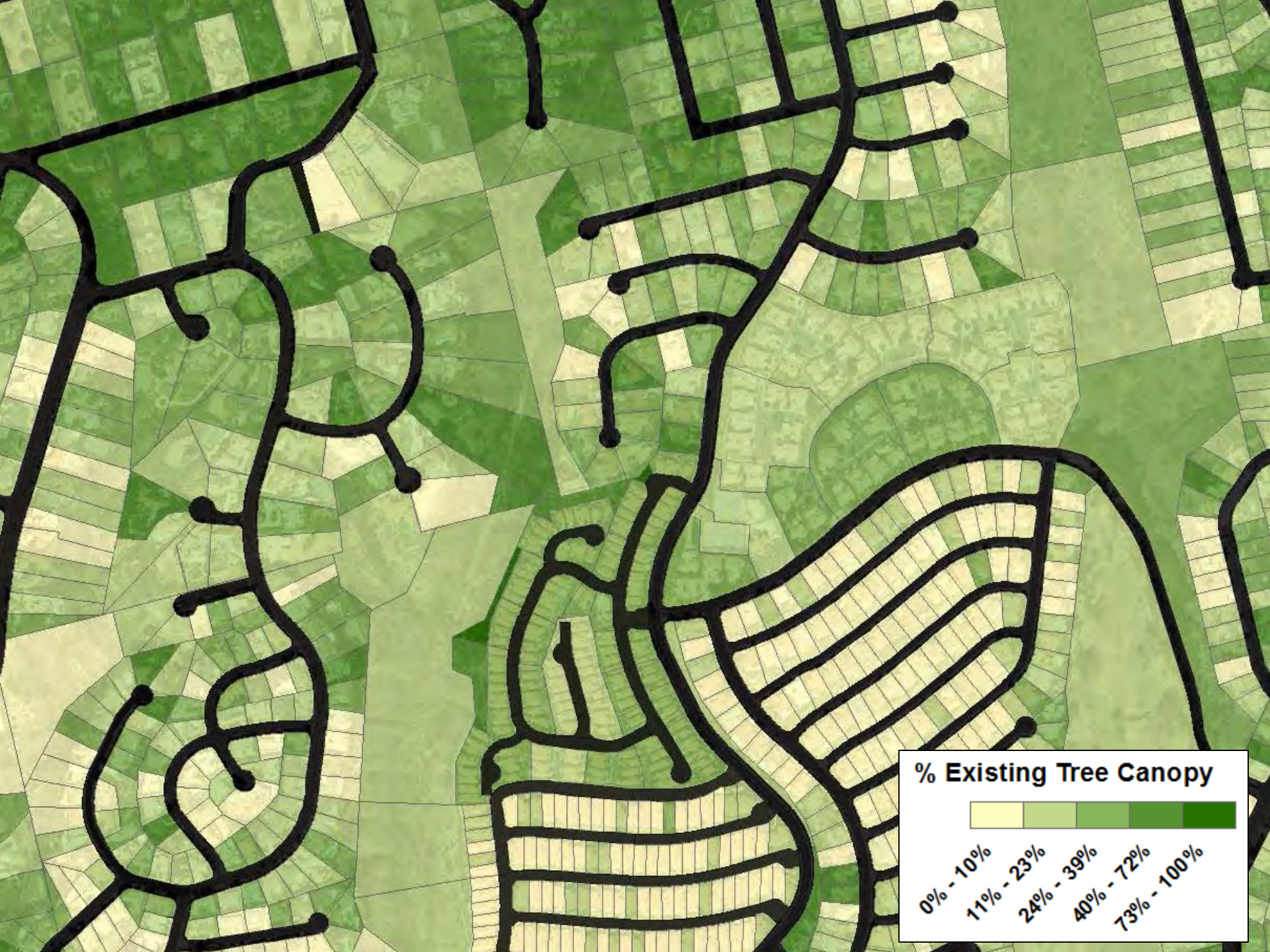
13444
Transportation

5975
Industrial

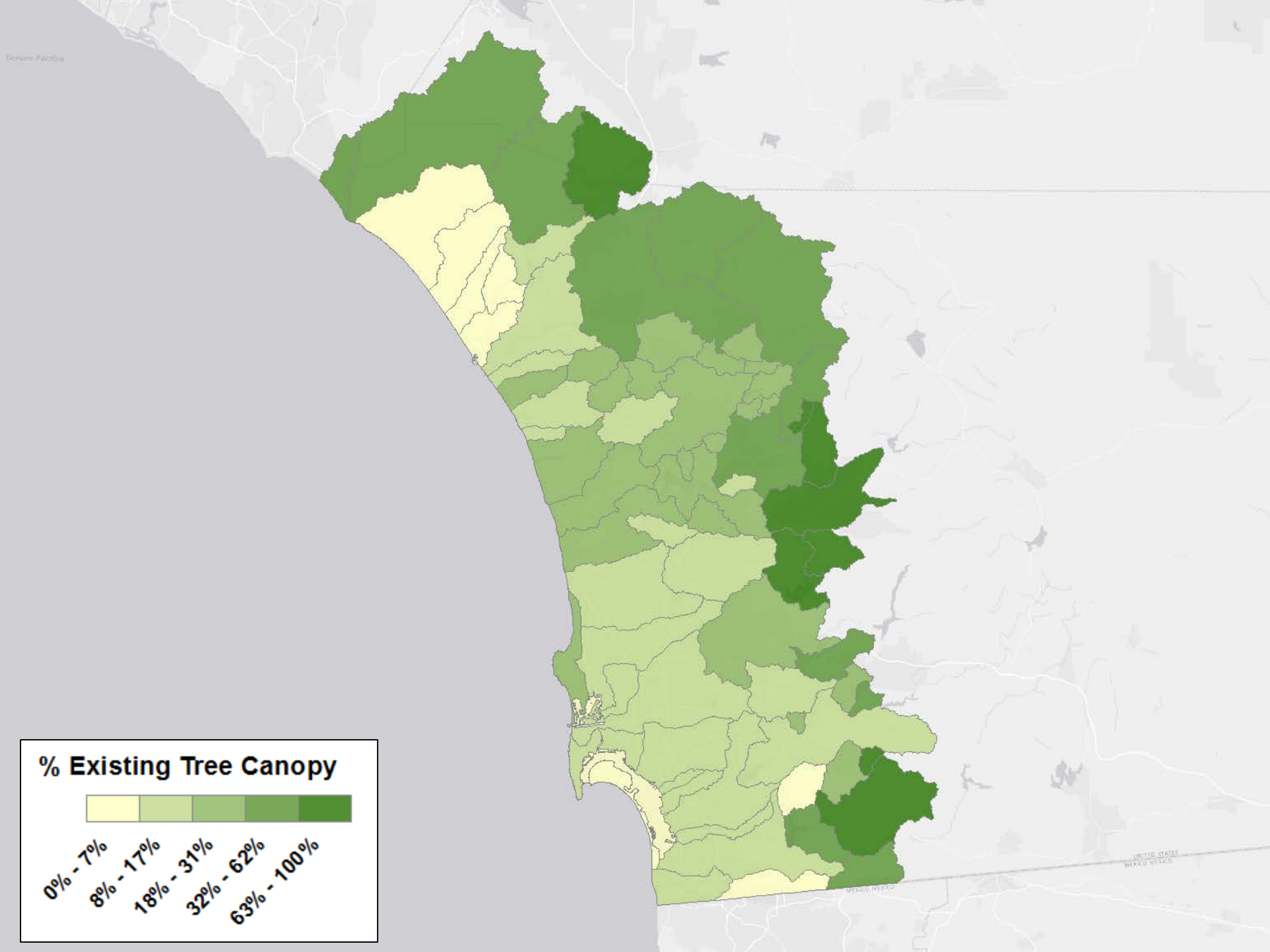
"Recreational & Open Space has the most area for establishing new tree canopy."

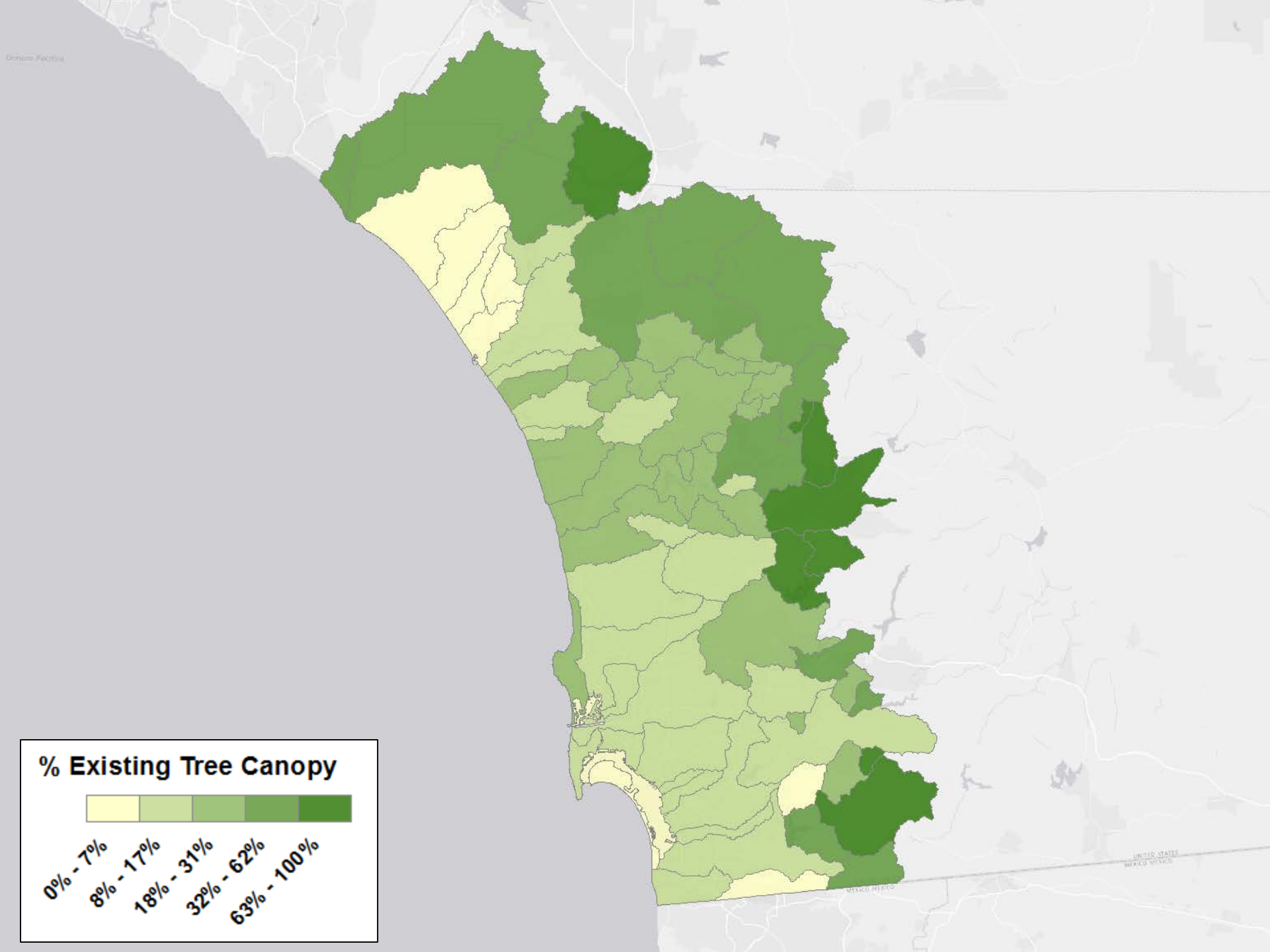

CARLSBAD
CHULA VISTA
CORONADO
DEL MAR
EL CAJON
ENCINITAS
ESCONDIDO
IMPERIAL BEACH
LA MESA
LEMON GROVE
NATIONAL CITY
OCEANSIDE
POWAY
SAN DIEGO
SAN MARCOS
SANTEE
SOLANA BEACH
VISTA
0%
2%
4%
6%
8%
10%
12%
14%
16%
18%
20%
22%
Existing Tree Canopy %

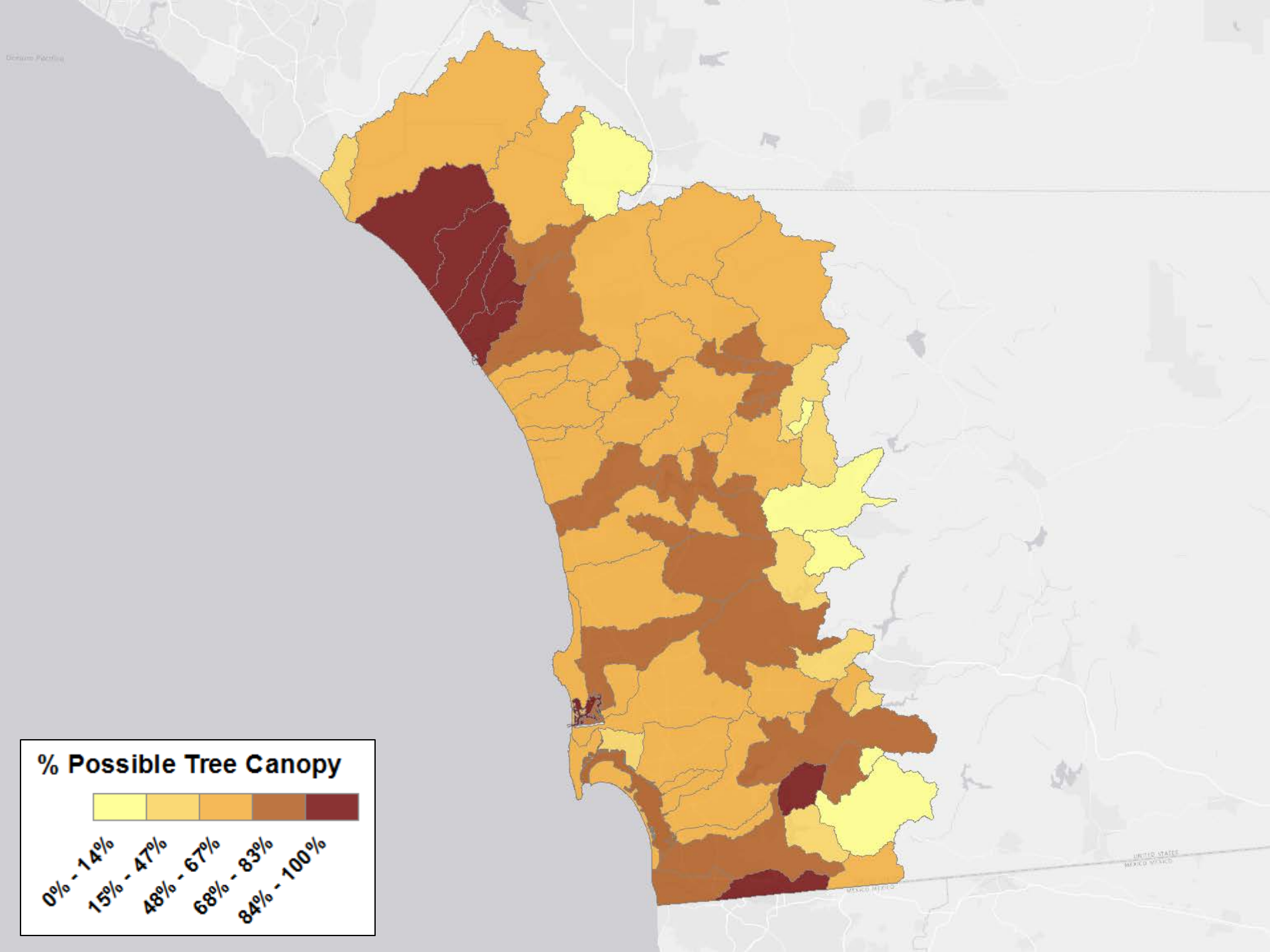

Tree Canopy
Grass/Shrub
Bare Soil
Water
Buildings
Roads/Railroads
Other Paved

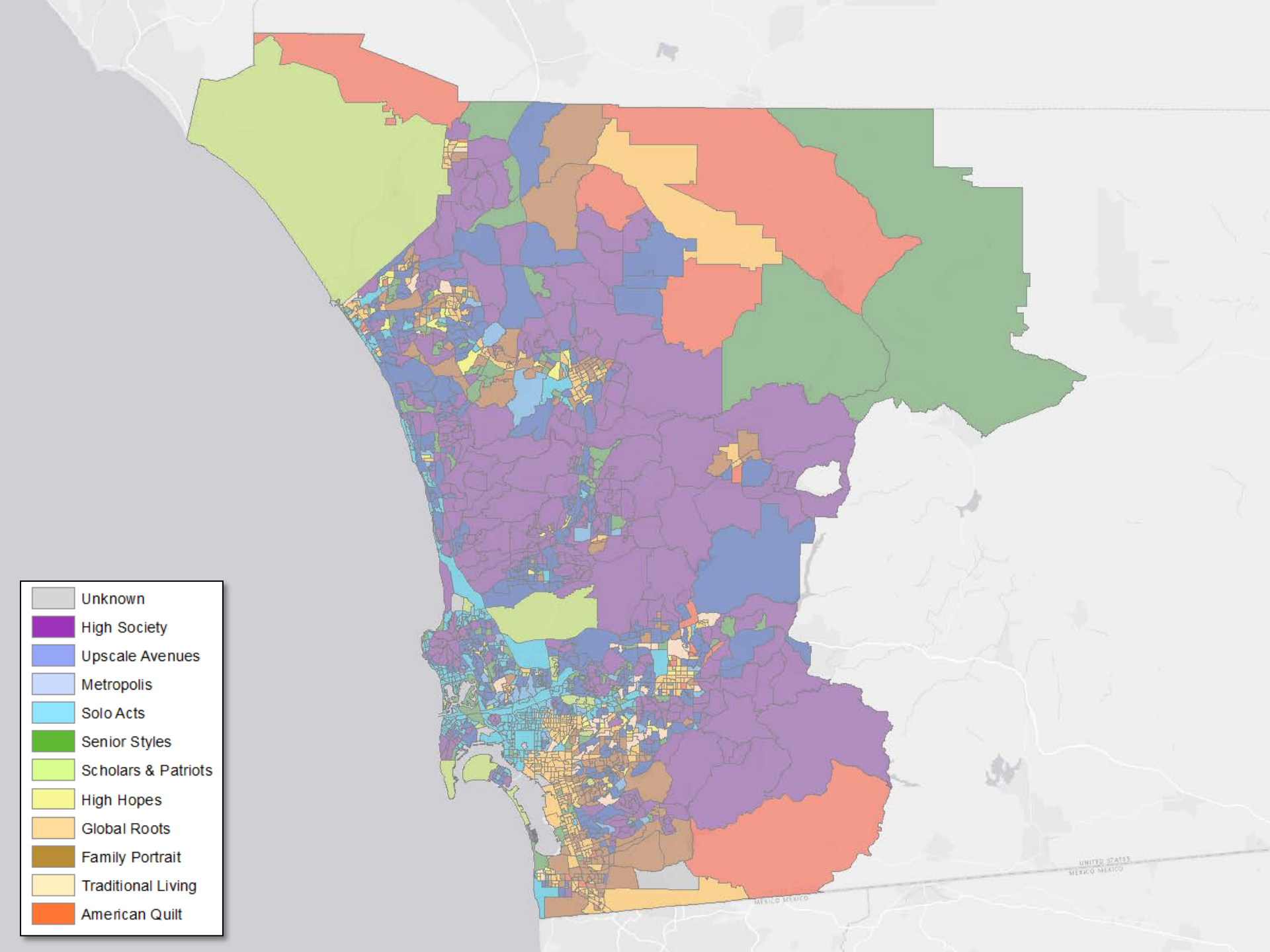

% Existing Tree Canopy
0% - 10%
11% - 23%
24% - 39%
40% - 72%
73% - 100%

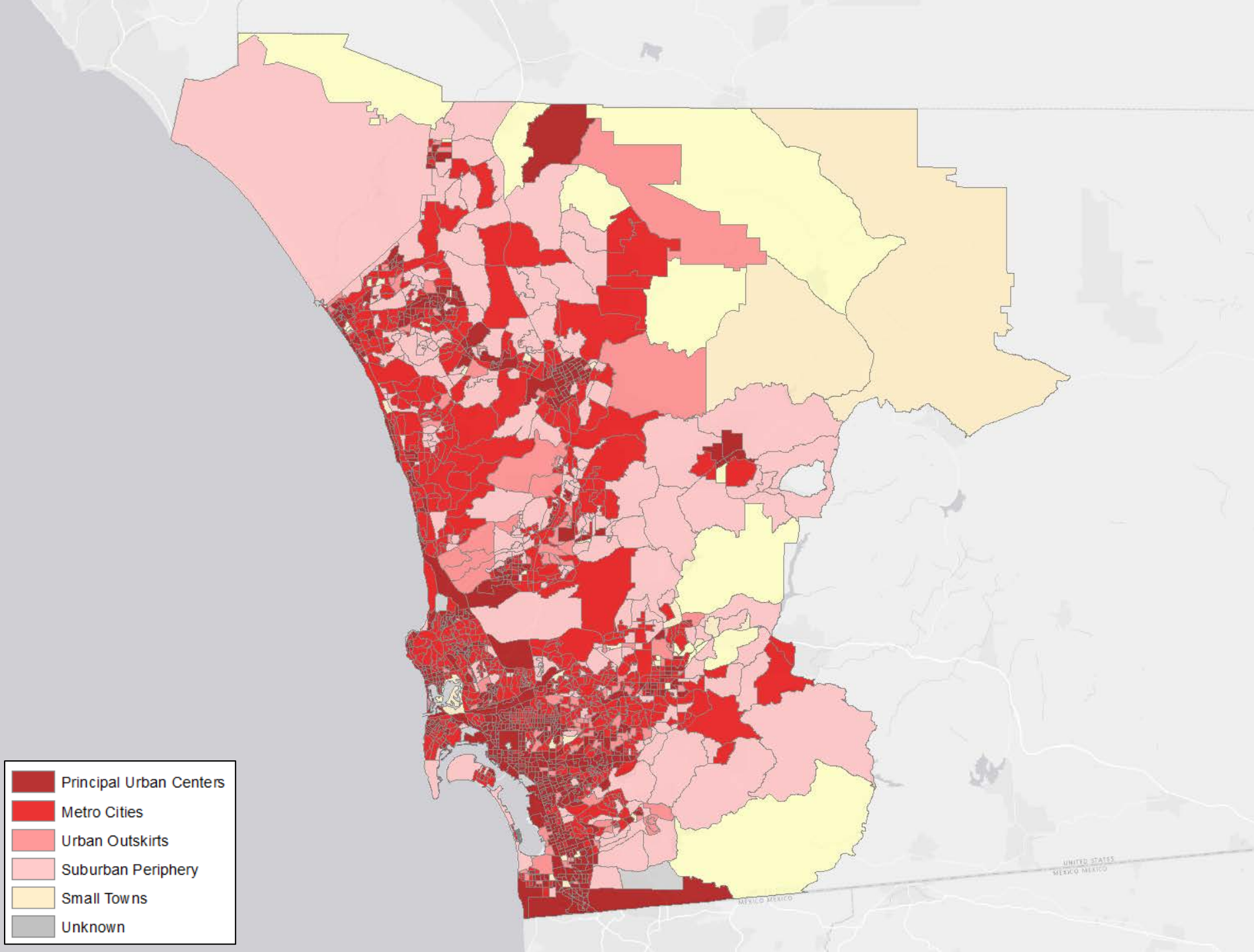
% Possible Tree Canopy
0% - 17%
18% - 39%
40% - 54%
55% - 72%
73% - 100%

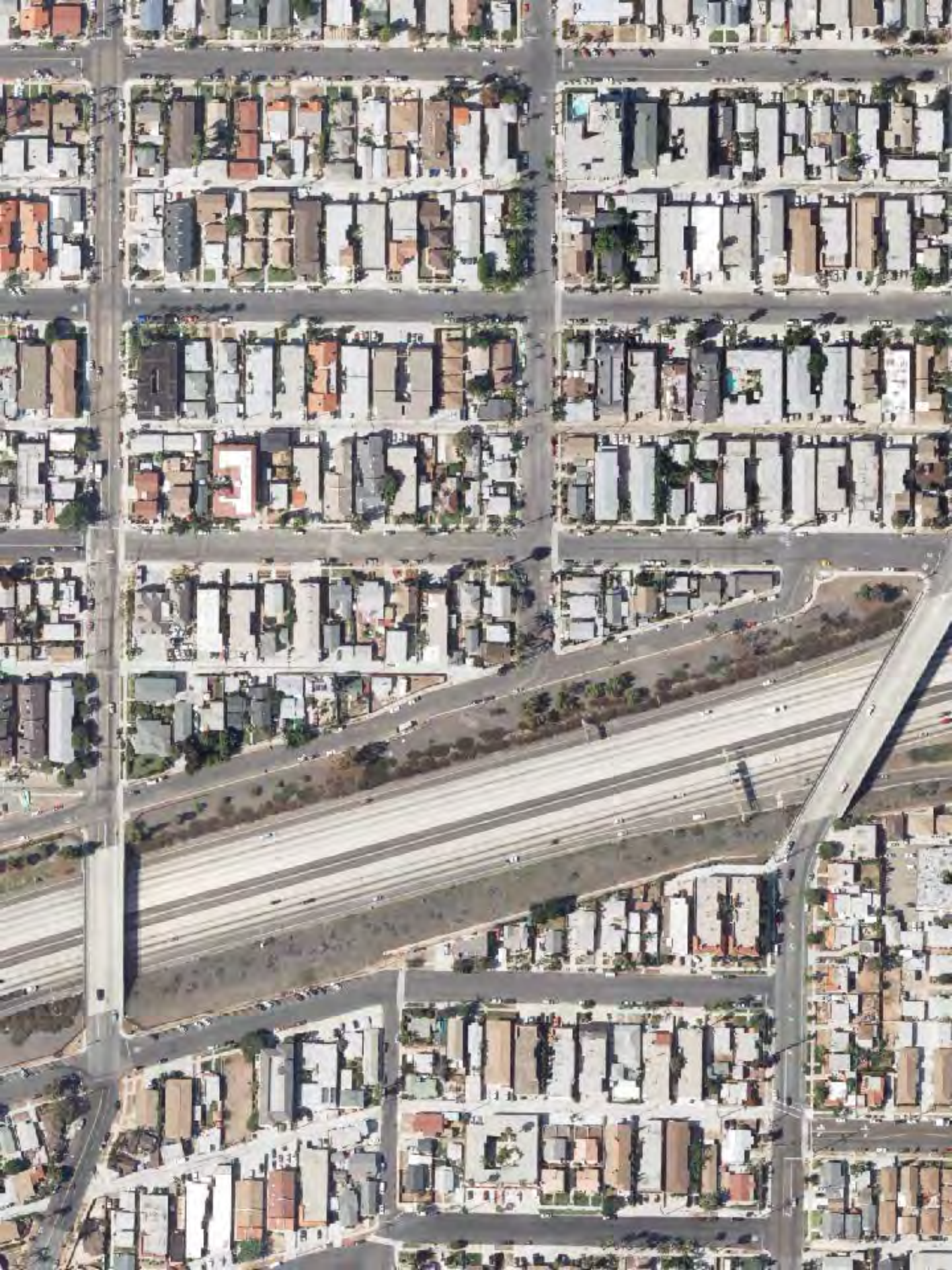

% Existing Tree Canopy
0% - 7%
8% - 17%
18% - 31%
32% - 62%
63% - 100%


% Existing Tree Canopy
0% - 7%
8% - 17%
18% - 31%
32% - 62%
63% - 100%

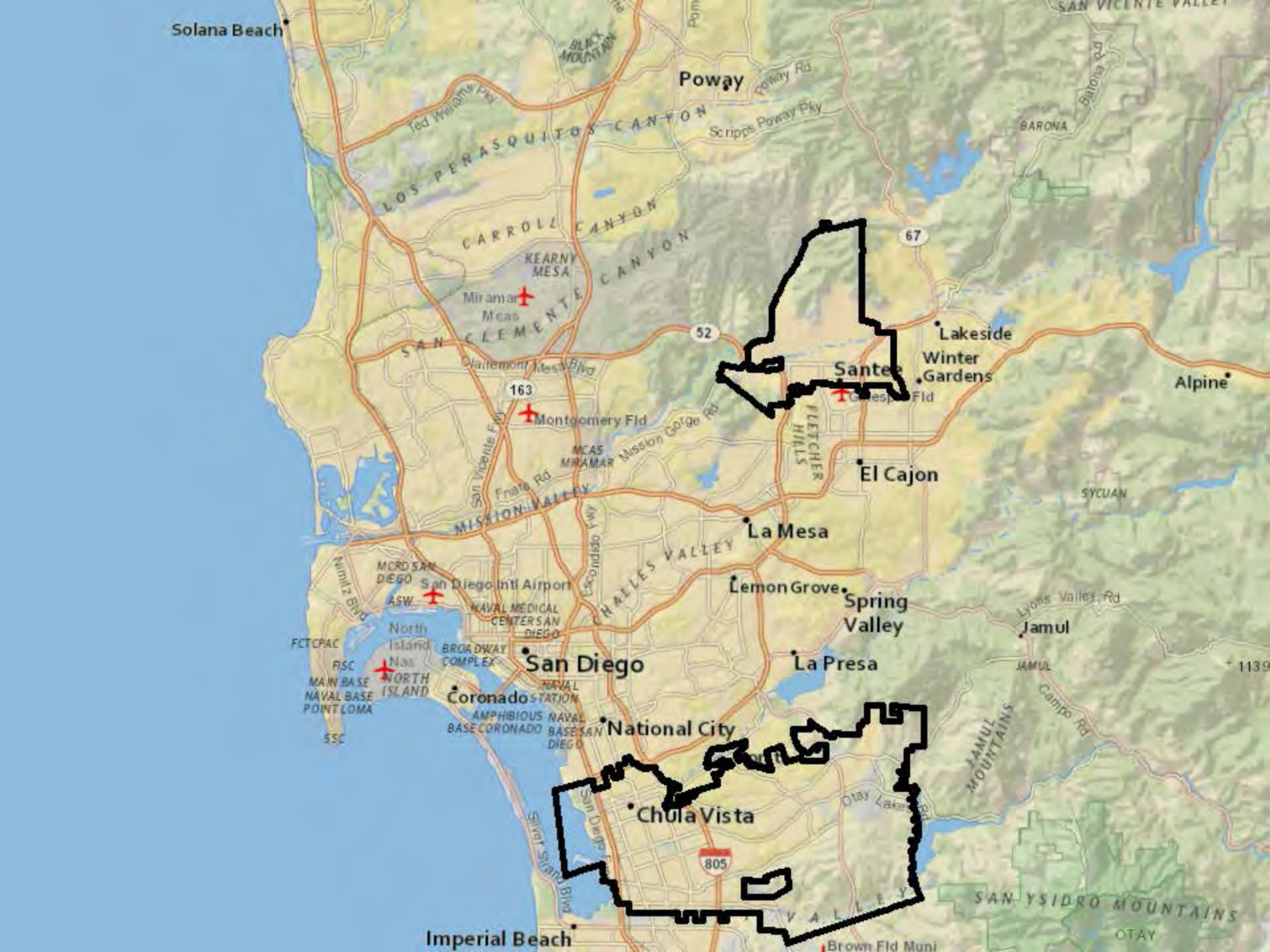

% Possible Tree Canopy
0% - 14%
15% - 47%
48% - 67%
68% - 83%
84% - 100%


Unknown
High Society
Upscale Avenues
Metropolis
Solo Acts
Senior Styles
Scholars & Patriots
High Hopes
Global Roots
Family Portrait
Traditional Living
American Quilt

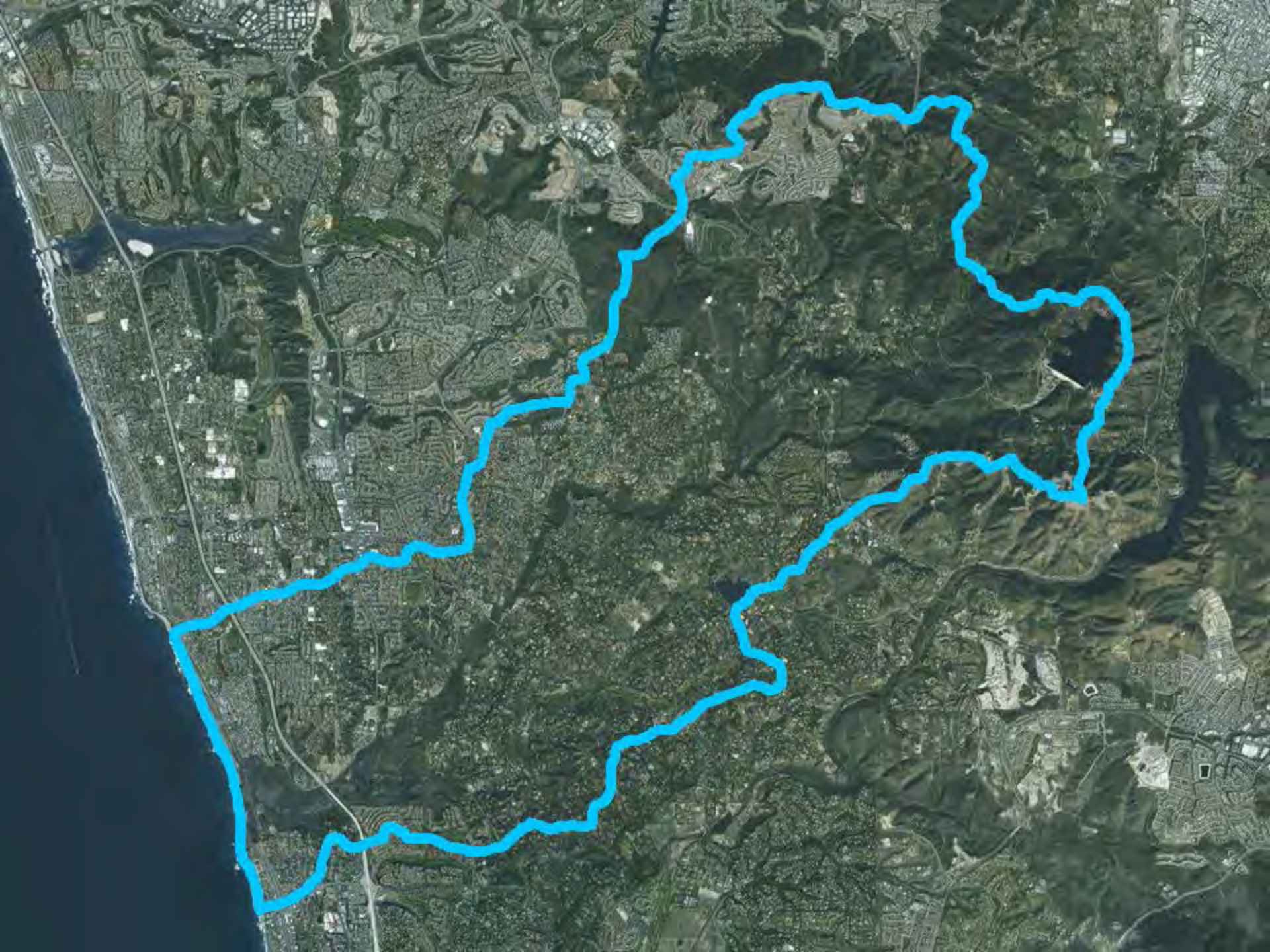

Principal Urban Centers
Metro Cities
Urban Outskirts
Suburban Periphery
Small Towns
Unknown
UNITED STATES
MEXICO MEXICO
MEXICO MEXICO

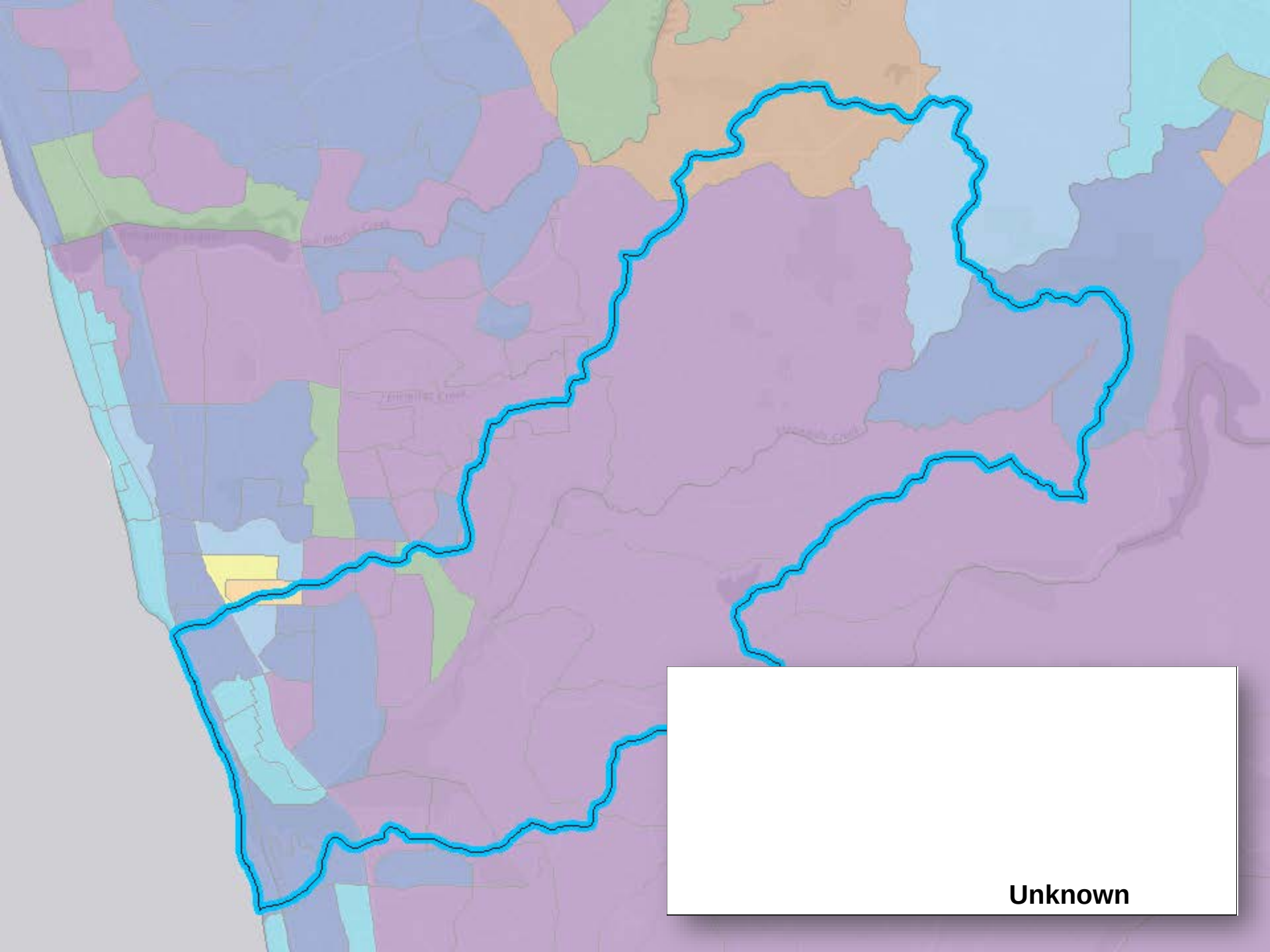


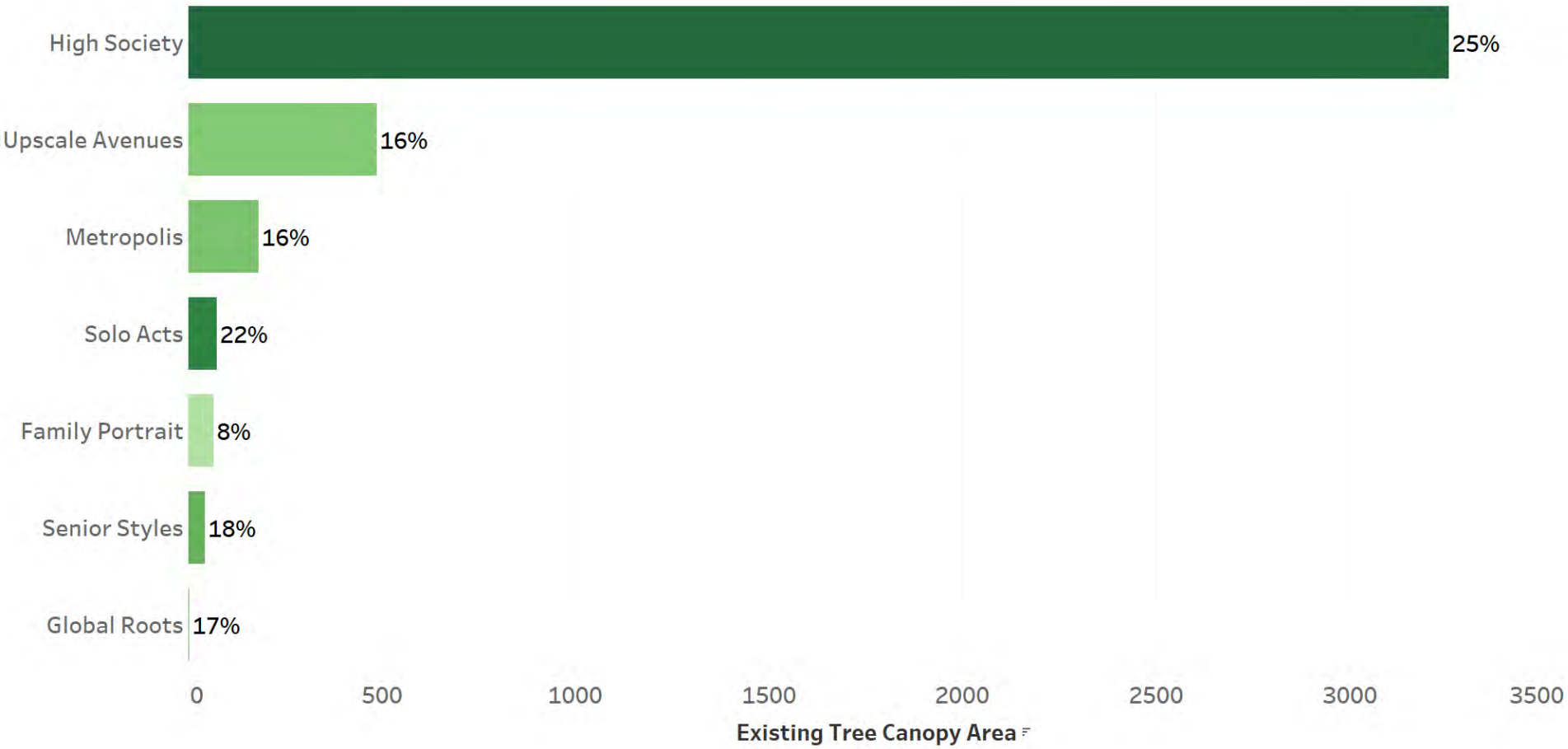
11%
3%
87%
0%
20%
40%
60%
80%
100%
% of Total Tree Canopy Area

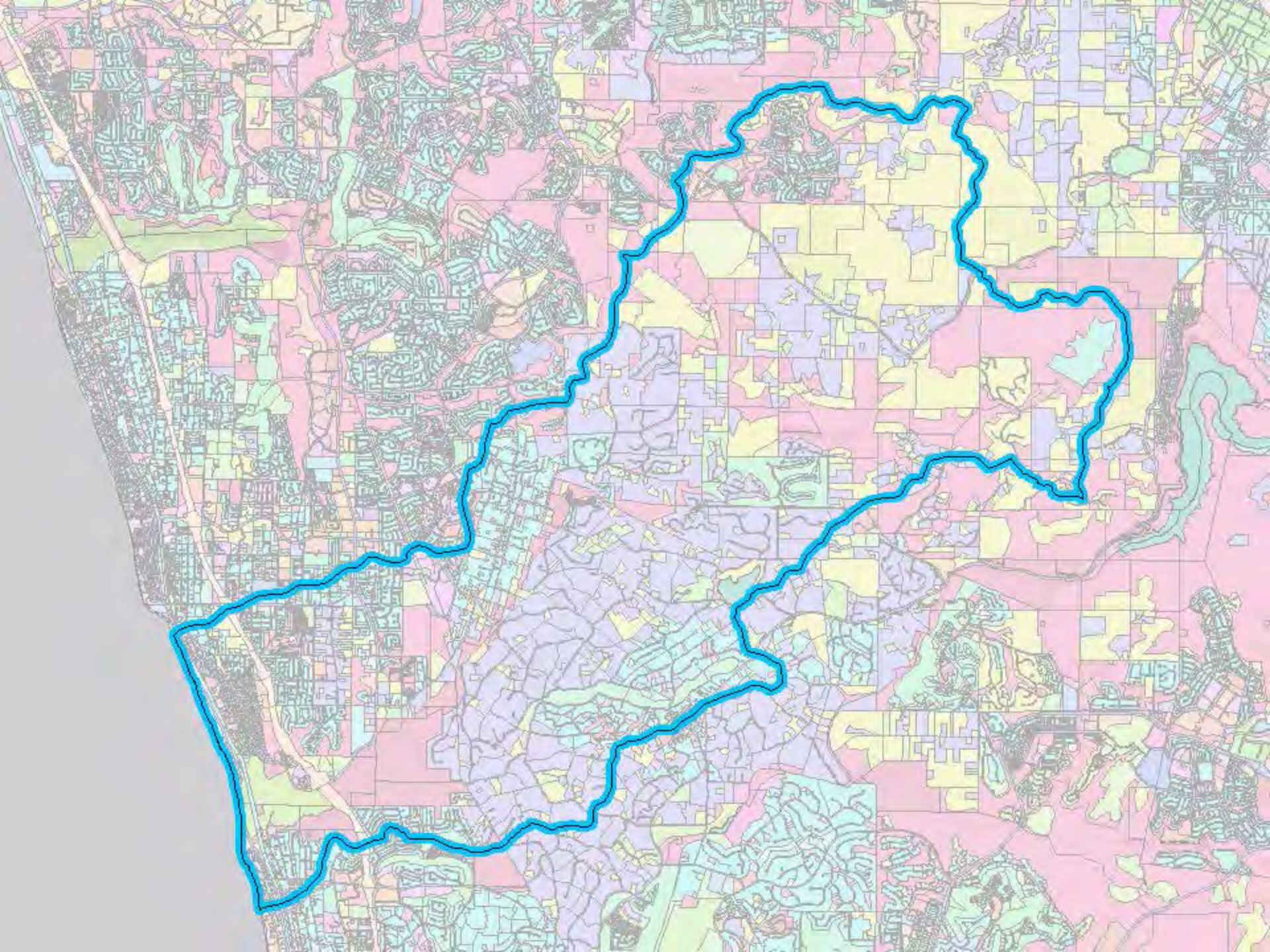

Solana Beach
Poway
Ted Williams Pky
Poway Rd
Scripps Poway Pky
LOS PENASQUITOS CANYON
BLACK MOUNTAIN
CARROLL CANYON
SAN CLEMENTE CANYON
KEARNY MESA
Miramar Meas
Clairemont Mesa Blvd
Montgomery Fld
MCAS MIRAMAR
Mission Gorge Rd
Fraire Rd
MISSION VALLEY
San Vicente Fwy
Santee
Gillespie Fld
Lakeside
Winter Gardens
Alpine
El Cajon
FLETCHER HILLS
SYCUAN
BARONA
Barona Rd
SAN VICENTE VALLEY
67
52
163
La Mesa
CHALLES VALLEY
Lemon Grove
Spring Valley
Jamul
Lyons Valley Rd
JAMUL
Campo Rd
La Presa
San Diego
San Diego Intl Airport
MCRD SAN DIEGO
ASW
Nimitz Blvd
North Island Nas
NORTH ISLAND
FCTCPAC
FISC
MAIN BASE
NAVAL BASE POINT LOMA
SSC
NAVAL MEDICAL CENTER SAN DIEGO
BROADWAY COMPLEX
Coronado
NAVAL STATION
AMPHIBIOUS BASE CORONADO
NAVAL BASE SAN DIEGO
National City
Chula Vista
Otay Lakes Rd
JAMUL MOUNTAINS
SAN YSIDRO MOUNTAINS
OTAY
Silver Strand Blvd
805
Imperial Beach
Brown Fld Muni

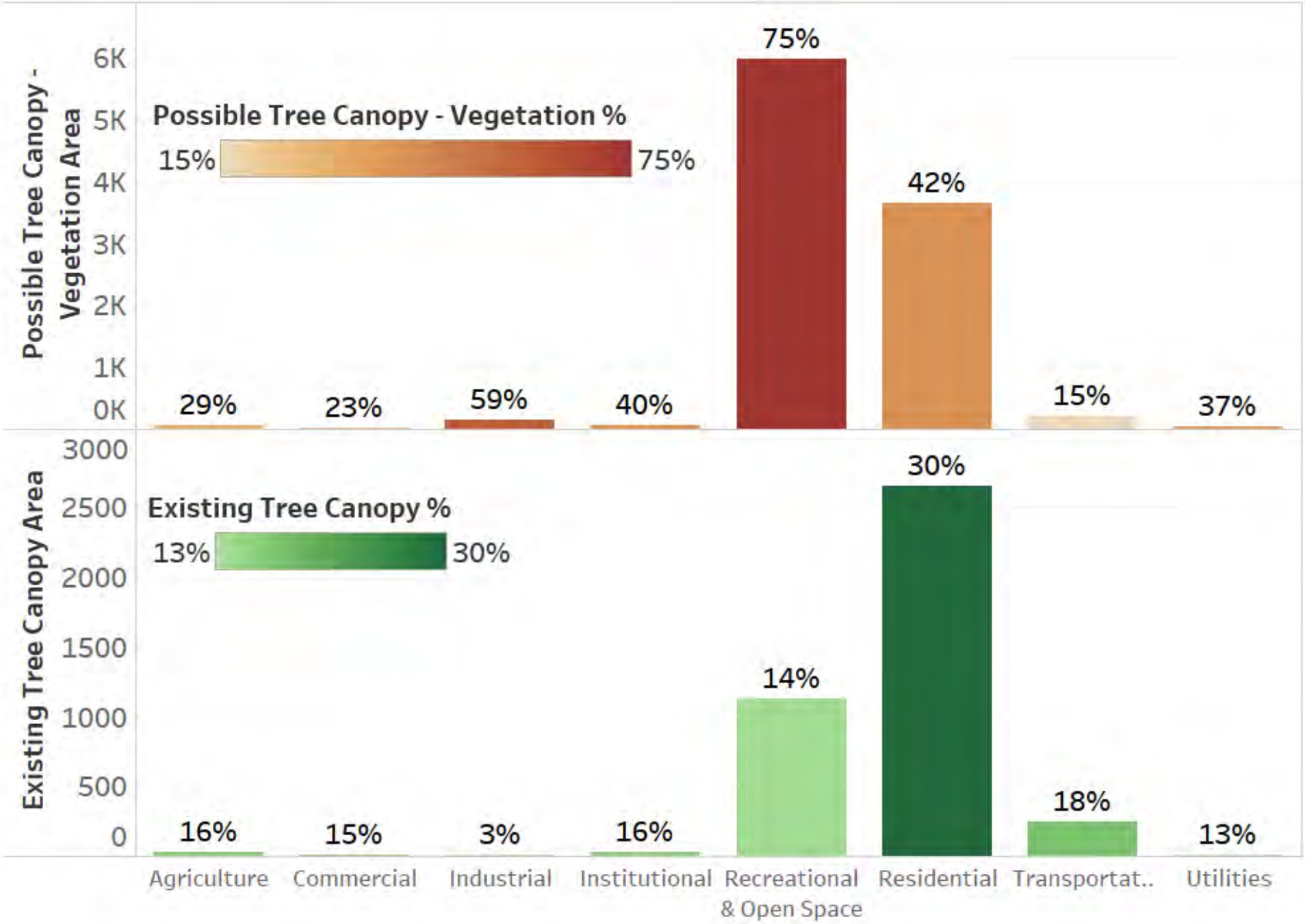
100%
80%
60%
40%
20%
0%
% Existing
% Possible Vegetation
CHULA VISTA
SANTEE
Utilities
Industrial
Recreational & Open Space
Transportation
Commercial
Agriculture
Institutional
Residential




Unknown


High Society
25%
Upscale Avenues
16%
Metropolis
16%
Solo Acts
22%
Family Portrait
8%
Senior Styles
18%
Global Roots
17%
0
500
1000
1500
2000
2500
3000
3500
Existing Tree Canopy Area



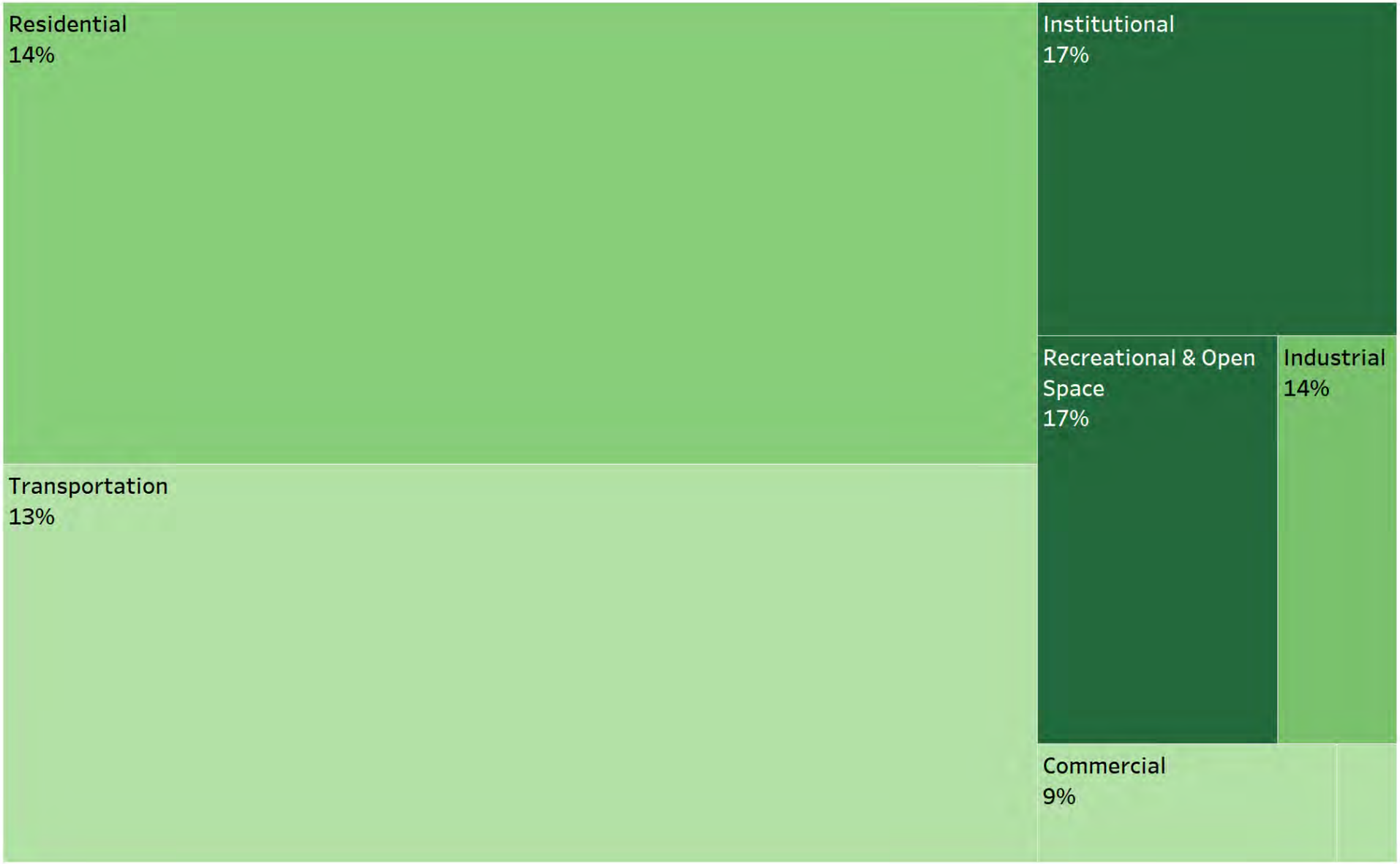

Possible Tree Canopy - Vegetation Area
6K
5K
4K
3K
2K
1K
0K
Possible Tree Canopy - Vegetation %
15%
75%
29%
23%
59%
40%
75%
42%
15%
37%
Existing Tree Canopy Area
3000
2500
2000
1500
1000
500
0
Existing Tree Canopy %
13%
30%
16%
15%
3%
16%
14%
30%
18%
13%
Agriculture
Commercial
Industrial
Institutional
Recreational & Open Space
Residential
Transportat..
Utilities

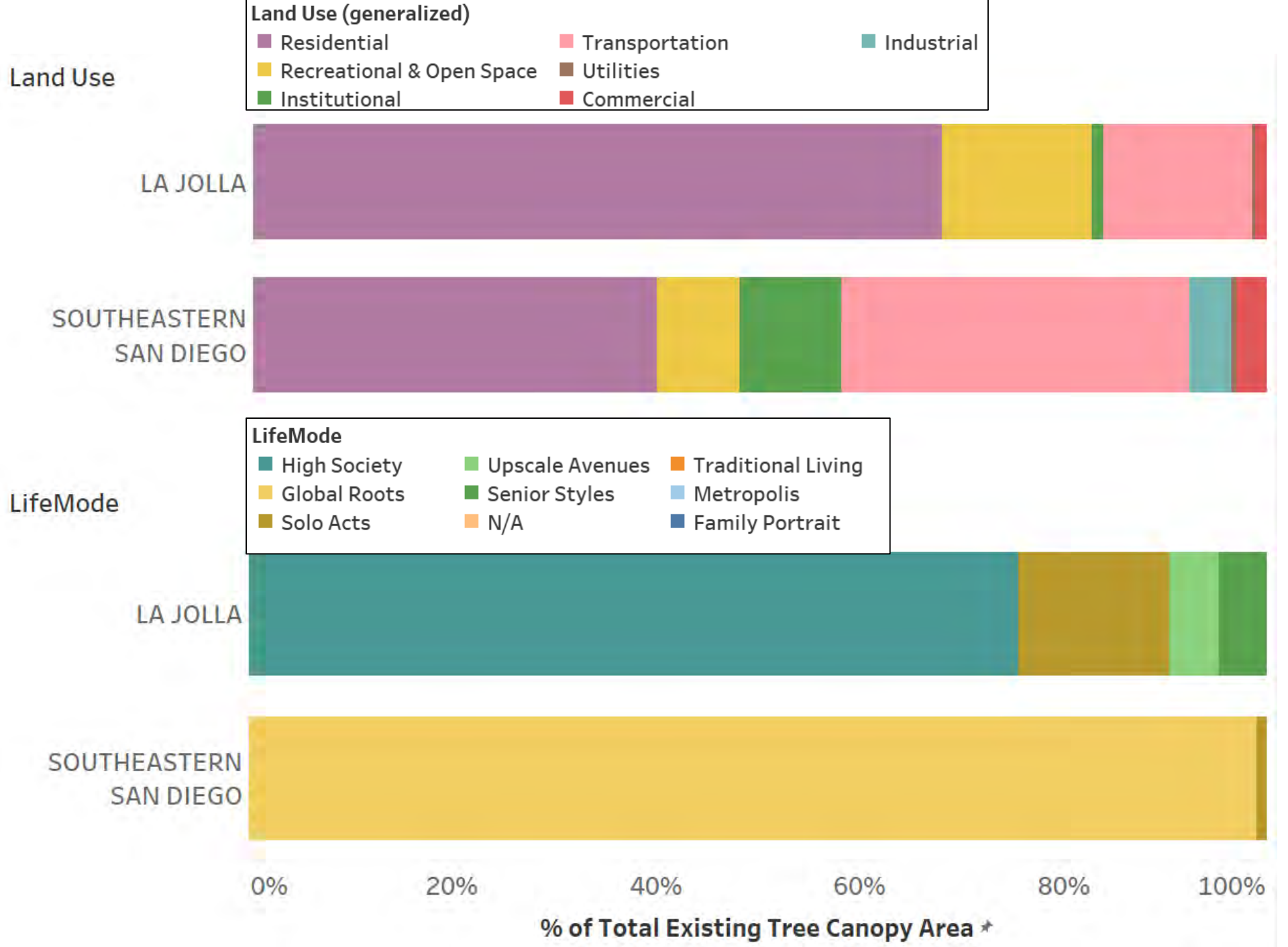
La Jolla
South Eastern San Diego
La Jolla
LA JOLLA MESA
Univ Of California San Diego
MIRAMAR MCAS
MONTGOMERY FLD
MCAS MIRAMAR
FIESTA ISLAND
Mission Hills
Five Points
OLD TOWN CAMPUS
MCRD SAN DIEGO
SAN DIEGO INTL AIRPORT
NAVAL MEDICAL CENTER SAN DIEGO
BROADWAY COMPLEX
San Diego
NAVAL BASE CORONADO NAS NORTH ISLAND
NORTH ISLAND NAS
NORTH ISLAND
POINT LOMA
MAIN BASE NAVAL BASE POINT LOMA
Coronado
AMPHIBIOUS BASE CORONADO
NAVAL STATION NAVAL BASE SAN DIEGO
National City
Lincoln Acres
Sunnyside
Bonita
Chula Vista
Lynwood Hills
La Mesa
Lemon Grove
La Presa
Grossmont
Mission Trails Regional Park
FLETCHER HILLS
Balboa Park
Claremont Mesa Blvd
Balboa Ave
Clairemont Dr
Miramar Rd
Genesee Ave
La Jolla Village Dr
Governor Dr
Soledad Fwy
Grand Ave
Mission Bay
Sunset Cliffs Blvd
Point Loma Ave
Nimitz Blvd
Midway Dr
Sports Arena Blvd
Friars Rd
Mission Gorge Rd
Navajo Rd
Lake Murray Blvd
Jackson Dr
Montezuma Rd
El Cajon Blvd
University Ave
College Grove Dr
Fairmount Ave
Mission Ave
Market St
Imperial Ave
Palaver Valley Rd
South Bay Fwy
Bonita Rd
Otay Lakes
52
163
805

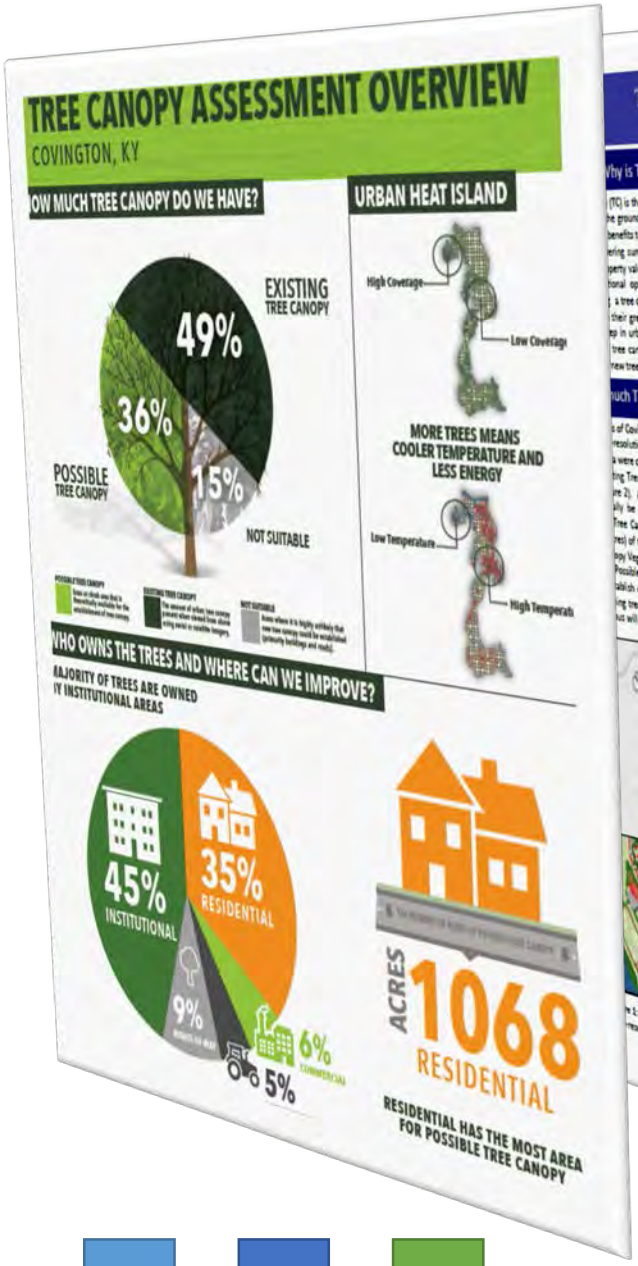
La Jolla

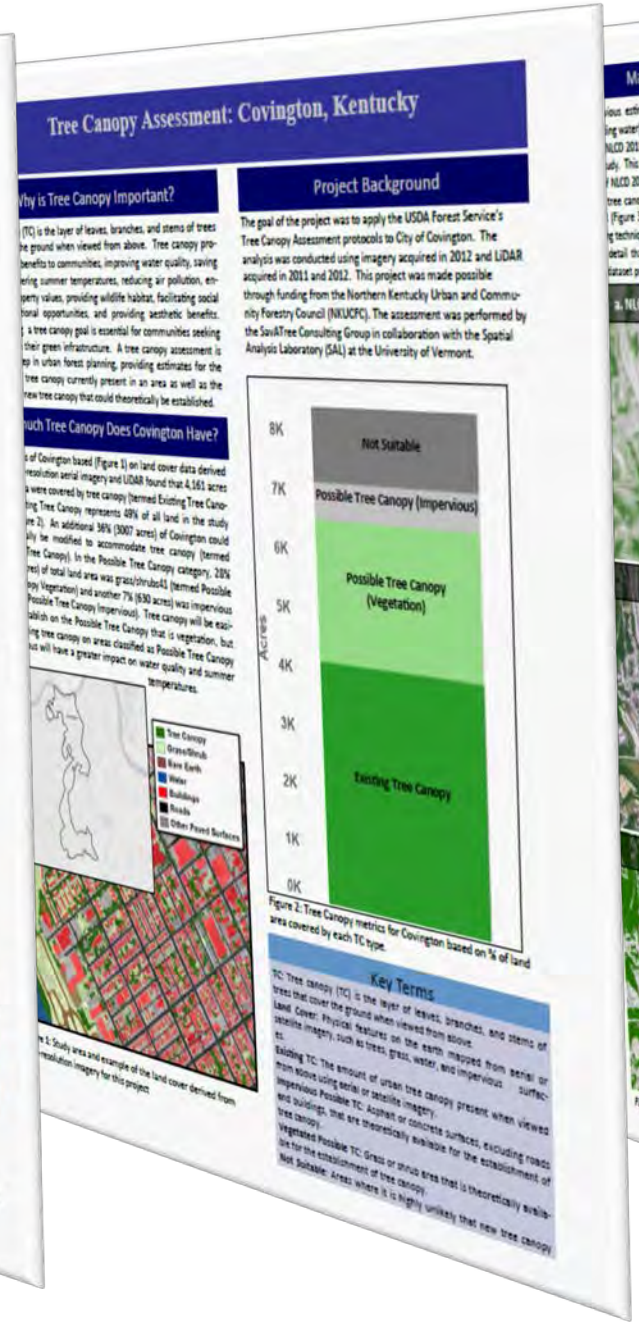
Residential
29%
Recreational & Open Space
20%
Transportation
18%
Institutional
Commercial

Southeastern San Diego

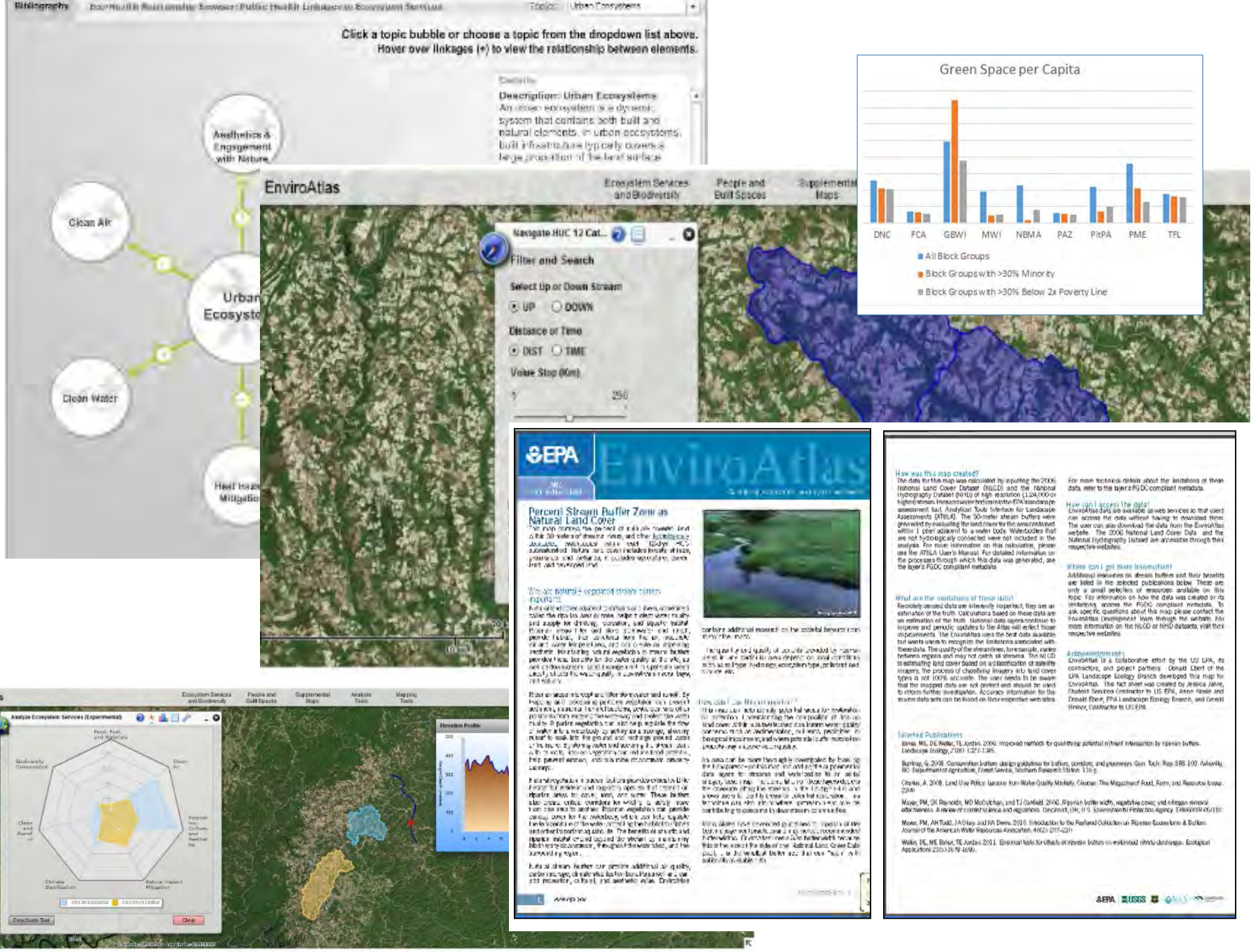



Land Use (generalized)
Residential
Transportation
Industrial
Recreational & Open Space
Utilities
Institutional
Commercial
Land Use
LA JOLLA
SOUTHEASTERN SAN DIEGO
LifeMode
High Society
Upscale Avenues
Traditional Living
Global Roots
Senior Styles
Metropolis
Solo Acts
N/A
Family Portrait
LifeMode
LA JOLLA
SOUTHEASTERN SAN DIEGO
0%
20%
40%
60%
80%
100%
% of Total Existing Tree Canopy Area


TREE CANOPY ASSESSMENT OVERVIEW
COVINGTON, KY
OW MUCH TREE CANOPY DO WE HAVE?
EXISTING TREE CANOPY
49%
36%
15%
POSSIBLE TREE CANOPY
NOT SUITABLE
URBAN HEAT ISLAND
High Coverage
Low Coverage
MORE TREES MEANS COOLER TEMPERATURE AND LESS ENERGY
Low Temperature
High Temperat
WHO OWNS THE TREES AND WHERE CAN WE IMPROVE?
AJORITY OF TREES ARE OWNED
Y INSTITUTIONAL AREAS
45% INSTITUTIONAL
35% RESIDENTIAL
9%
6%
5%
ACRES 1068 RESIDENTIAL
RESIDENTIAL HAS THE MOST AREA FOR POSSIBLE TREE CANOPY


Tree Canopy Assessment: Covington, Kentucky
Why is Tree Canopy Important?
Project Background
The goal of the project was to apply the USDA Forest Service's Tree Canopy Assessment protocols to City of Covington. The analysis was conducted using imagery acquired in 2012 and LiDAR acquired in 2011 and 2012. This project was made possible through funding from the Northern Kentucky Urban and Community Forestry Council (NKUCFC). The assessment was performed by the SavATree Consulting Group in collaboration with the Spatial Analysis Laboratory (SAL) at the University of Vermont.
uch Tree Canopy Does Covington Have?
8K
7K
6K
5K
4K
3K
2K
1K
0K
Acres
Not Suitable
Possible Tree Canopy (Impervious)
Possible Tree Canopy (Vegetation)
Existing Tree Canopy
Figure 2: Tree Canopy metrics for Covington based on % of land area covered by each TC type.
Key Terms

Mapping Covington's Trees
a. NLCD 2011 Percent Tree Canopy (30m)
b. 2012 Aerial Imagery (1m)
c. Tree Canopy from 2012 Imagery
Figure 3: Comparison of NLCD 2011 (a) to high-resolution imagery (b)
Parcel Summary
Parcels
Existing Tree Canopy (TC)
Possible Tree Canopy (TC)
Figure 4: Parcel-based TC metrics. TC metrics are generated at the parcel level, allowing each property to be evaluated according



EPA LandScope NRCS USGS

DBH
Species
Ecosystem Services
Condition

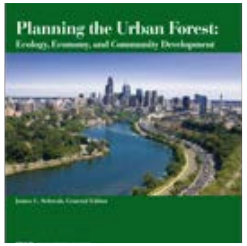
Targeted Plantings

Environmental Justice

Prioritization

Stewardship

Awareness



Master Plans

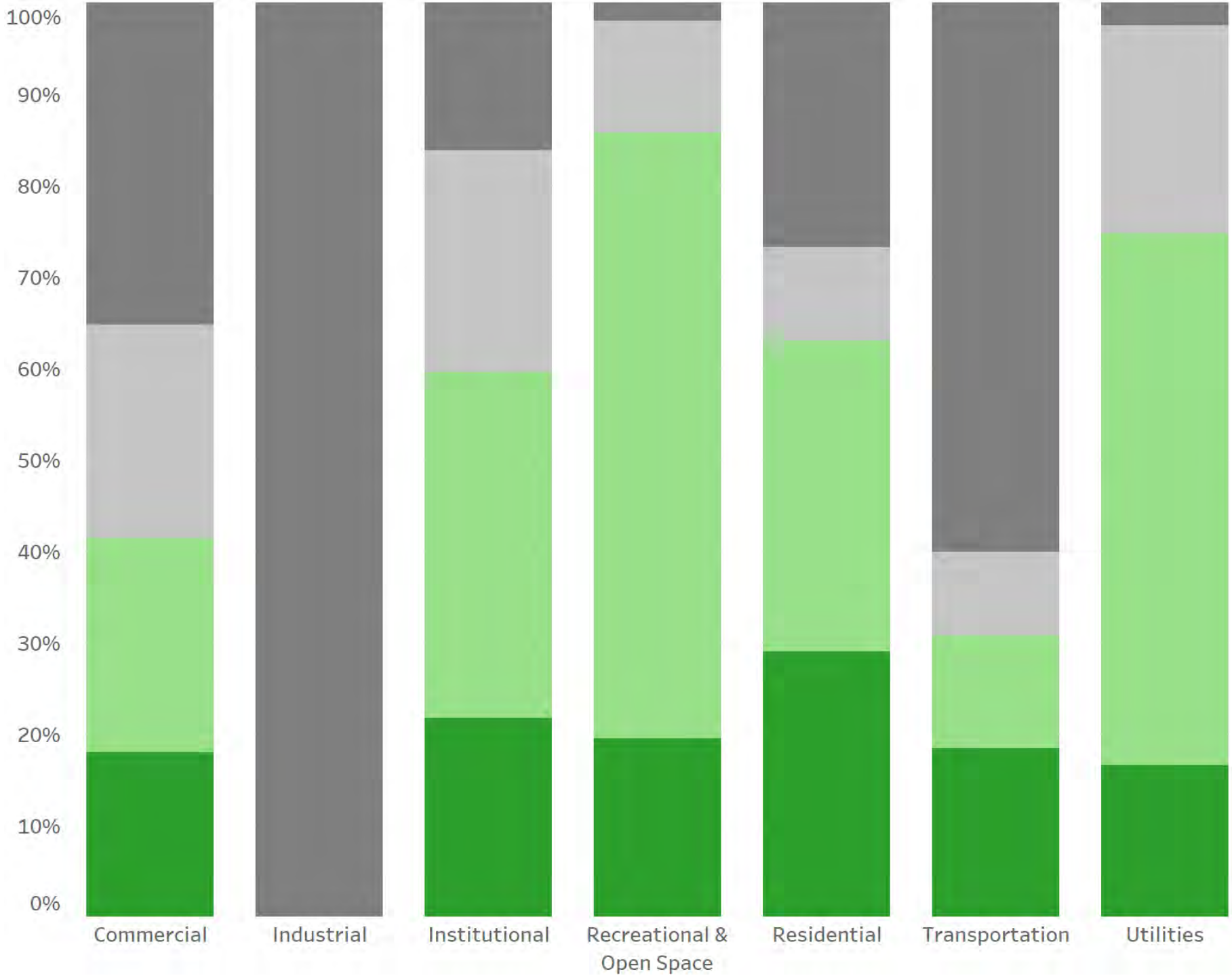
Long Term Monitoring

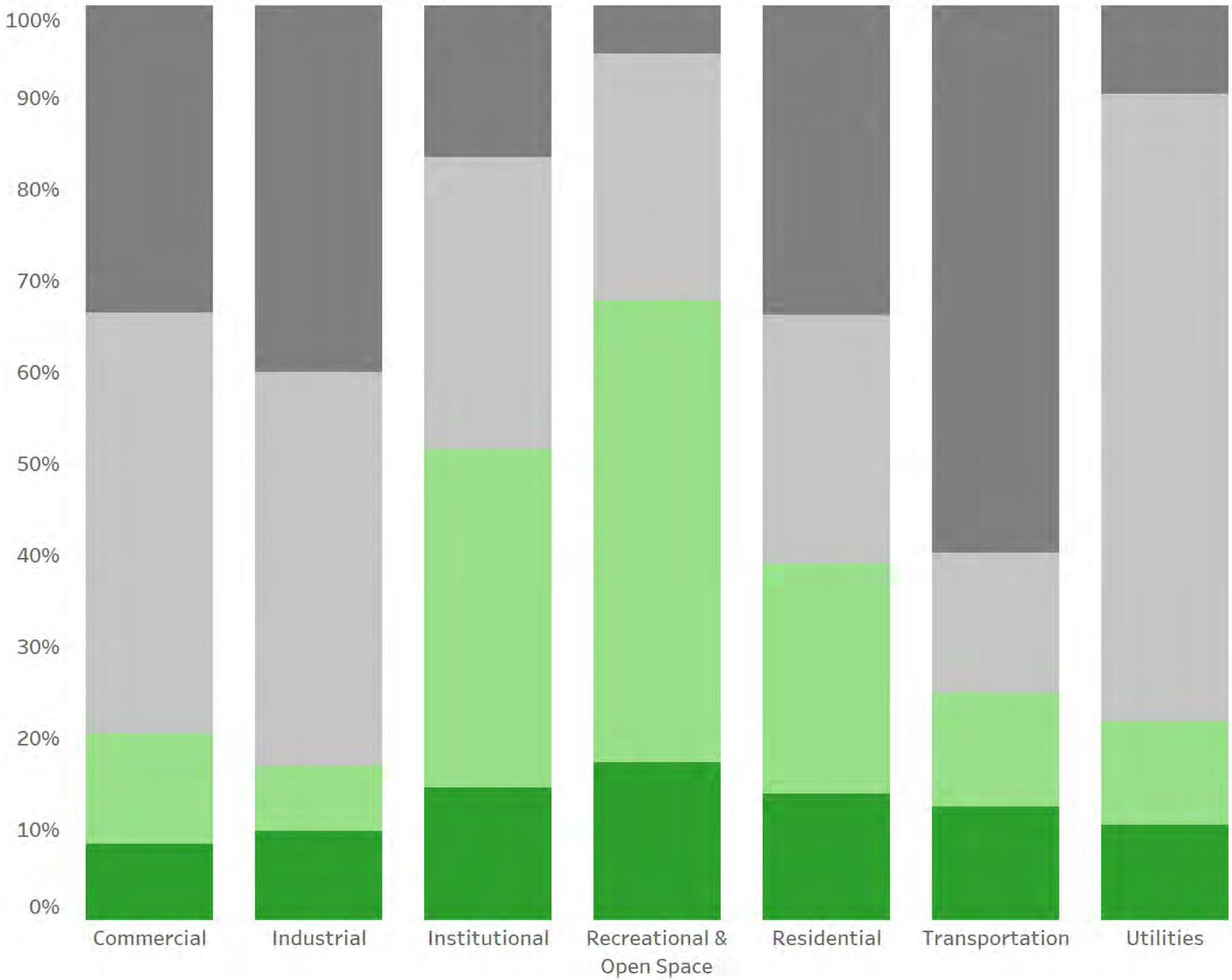
Regulatory

Correlation

Goal Setting

San Diego Tree Canopy Assessment


100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Commercial
Industrial
Institutional
Recreational & Open Space
Residential
Transportation
Utilities


100%
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