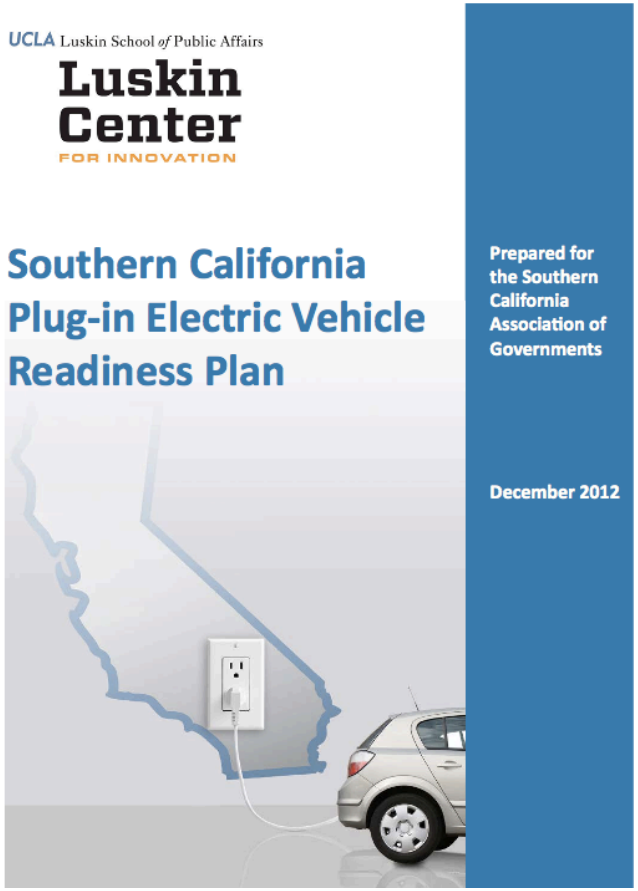
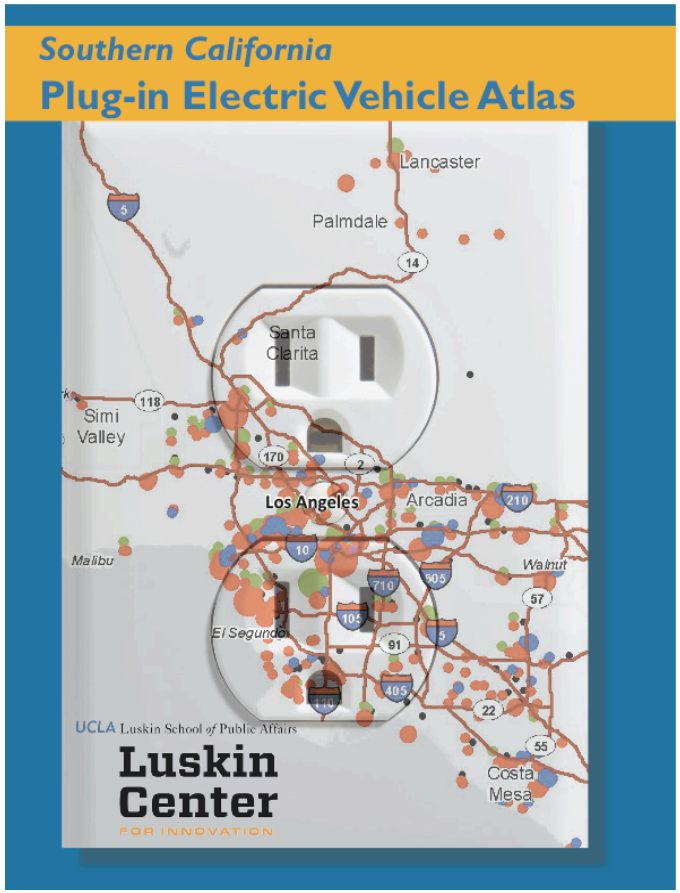




Southern California Council of Governments PEV Planning: Methods and Metrics

J.R. DeShazo
UCLA Luskin Center for Innovation
June, 2014

Distinctive Features of PEV Plan

- Time of Day spatial changes in PEV densities by land use for charging station siting
- Region and city land-use planning tools for PEV assessment & prioritization of outreach

Applied to:

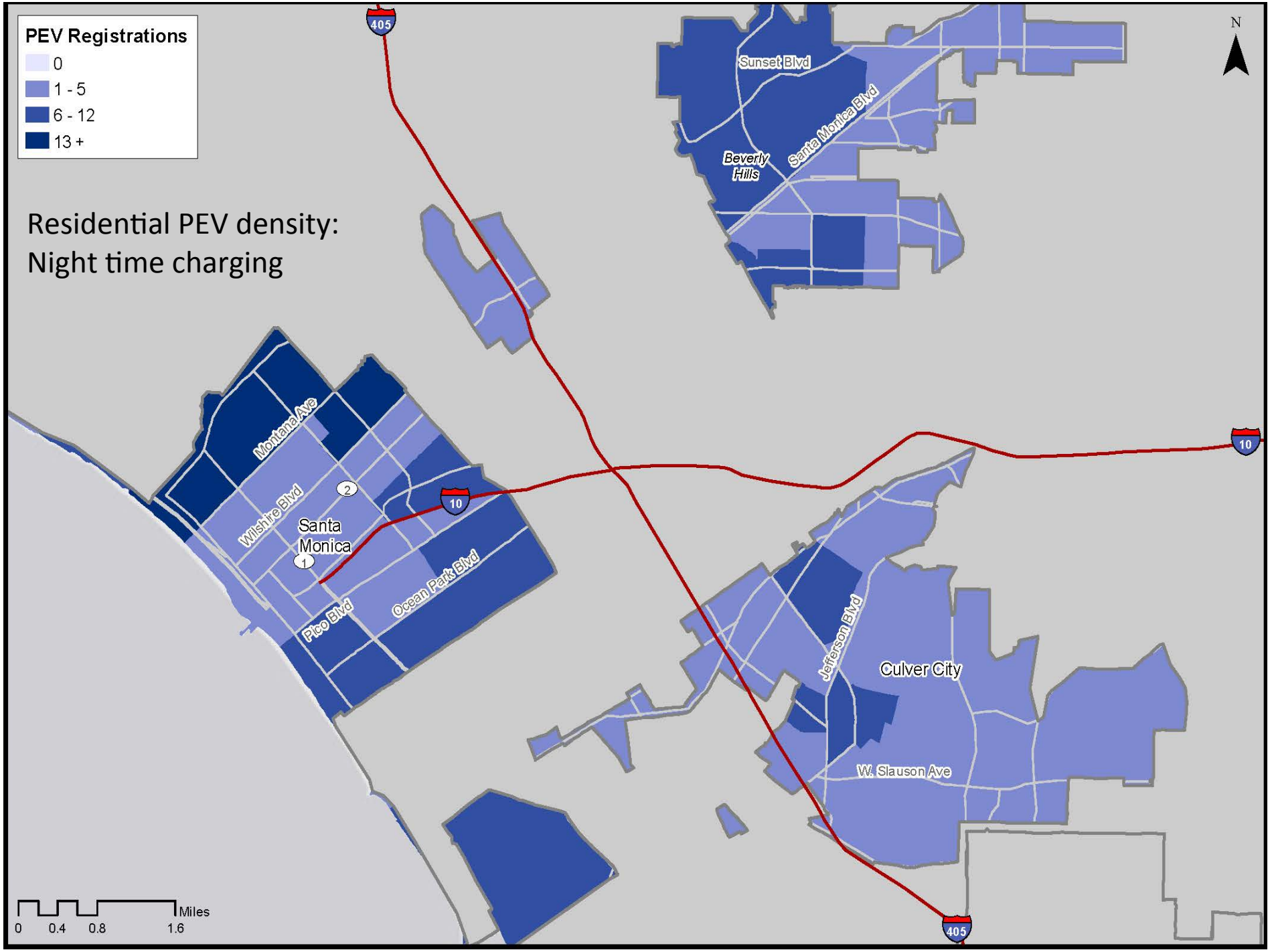
- SF Residential
- MUDs
- Workplace
- Commercial/Retail/Public Parking

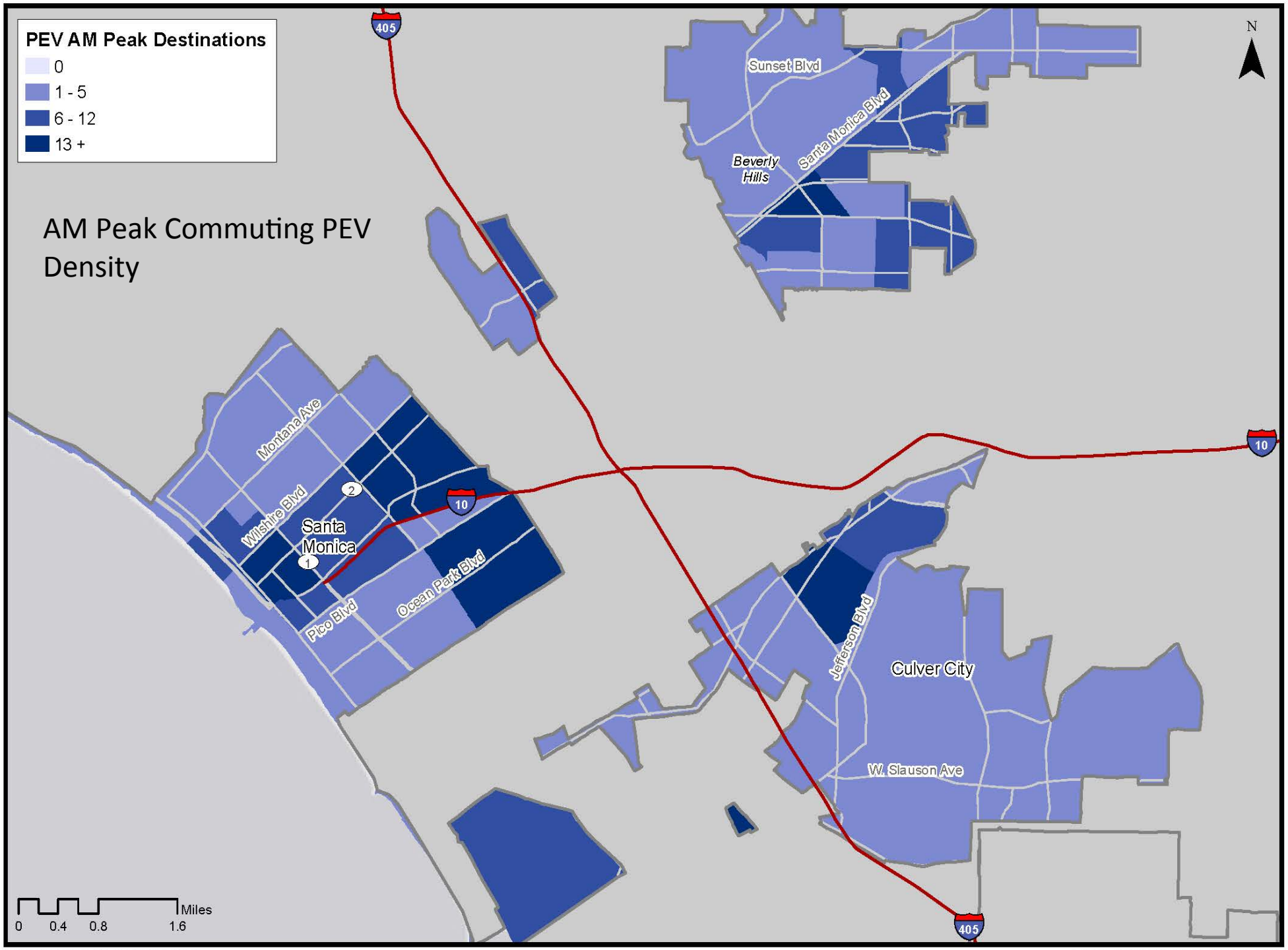
Sample COG-level Maps

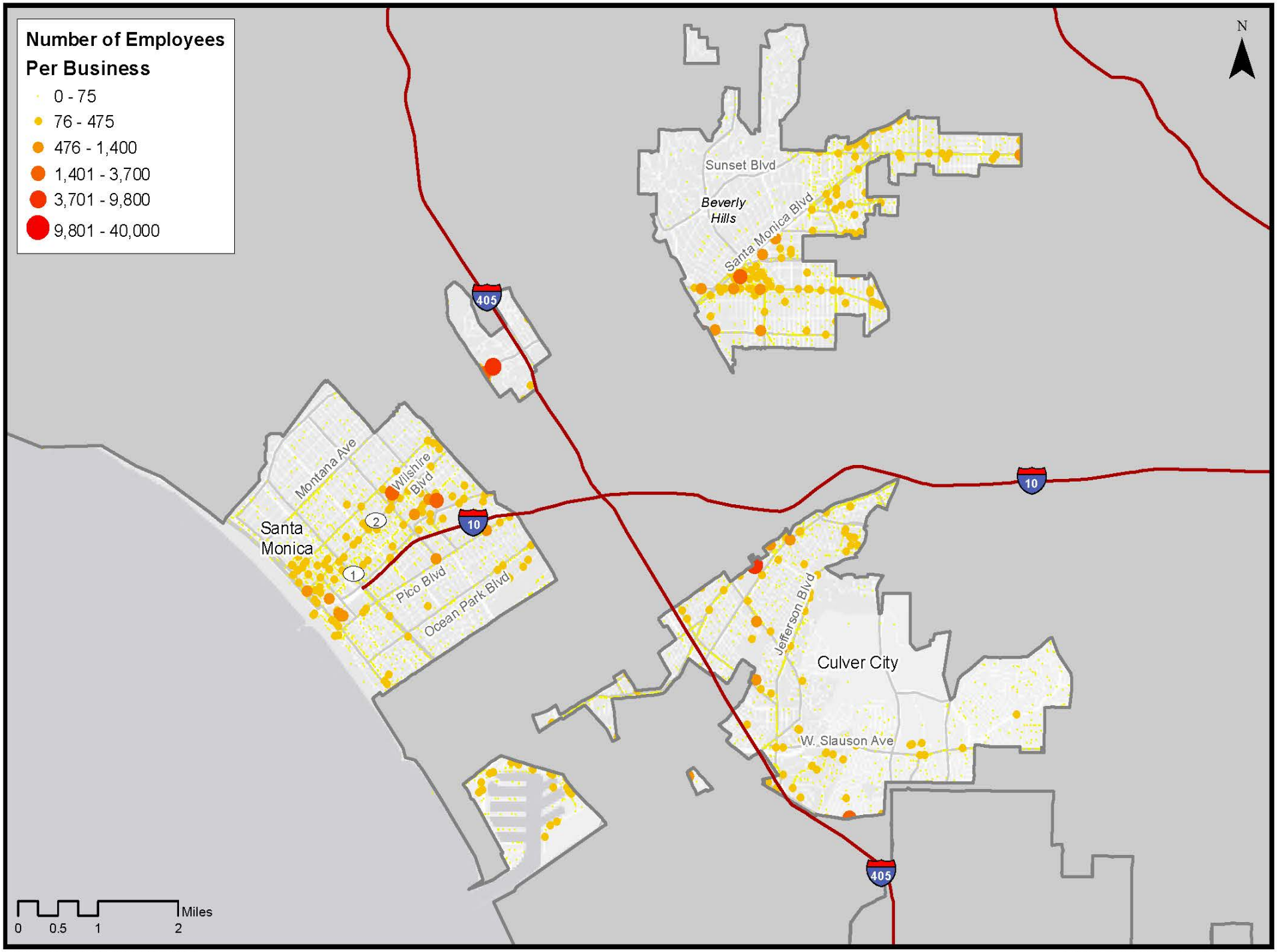
Travel Dynamics that change
PEV densities by Time of Day

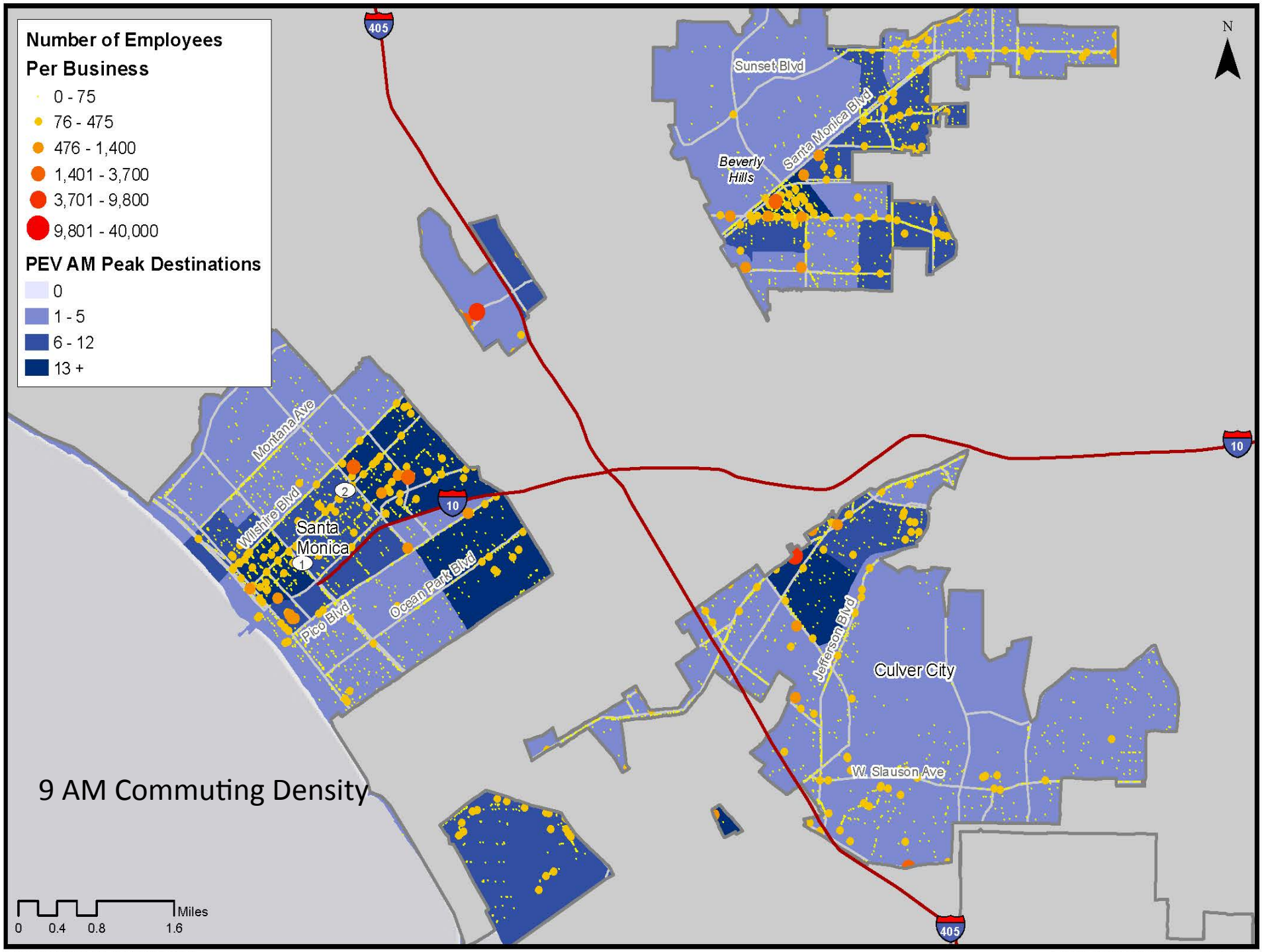
Westside Cities

Santa Monica
Beverly Hills
West Hollywood
Culver City
Marina Del Rey


PEV Registrations
0
1 - 5
6 - 12
13 +
Residential PEV density:
Night time charging
N
405
10
Sunset Blvd
Santa Monica Blvd
Beverly Hills
Montana Ave
Wilshire Blvd
Santa Monica
Pico Blvd
Ocean Park Blvd
Jefferson Blvd
Culver City
W. Slauson Ave
Miles
0 0.4 0.8 1.6


PEV AM Peak Destinations
0
1 - 5
6 - 12
13 +
AM Peak Commuting PEV Density
N
405
10
Sunset Blvd
Santa Monica Blvd
Beverly Hills
Montana Ave
Wilshire Blvd
Santa Monica
Pico Blvd
Ocean Park Blvd
Jefferson Blvd
Culver City
W. Slauson Ave
Miles
0 0.4 0.8 1.6


Number of Employees Per Business
0 - 75
76 - 475
476 - 1,400
1,401 - 3,700
3,701 - 9,800
9,801 - 40,000
N
Sunset Blvd
Beverly Hills
Santa Monica Blvd
405
10
Montana Ave
Wilshire Blvd
Santa Monica
2
1
Pico Blvd
Ocean Park Blvd
Jefferson Blvd
Culver City
W. Slauson Ave
Miles
0
0.5
1
2


Number of Employees Per Business
0 - 75
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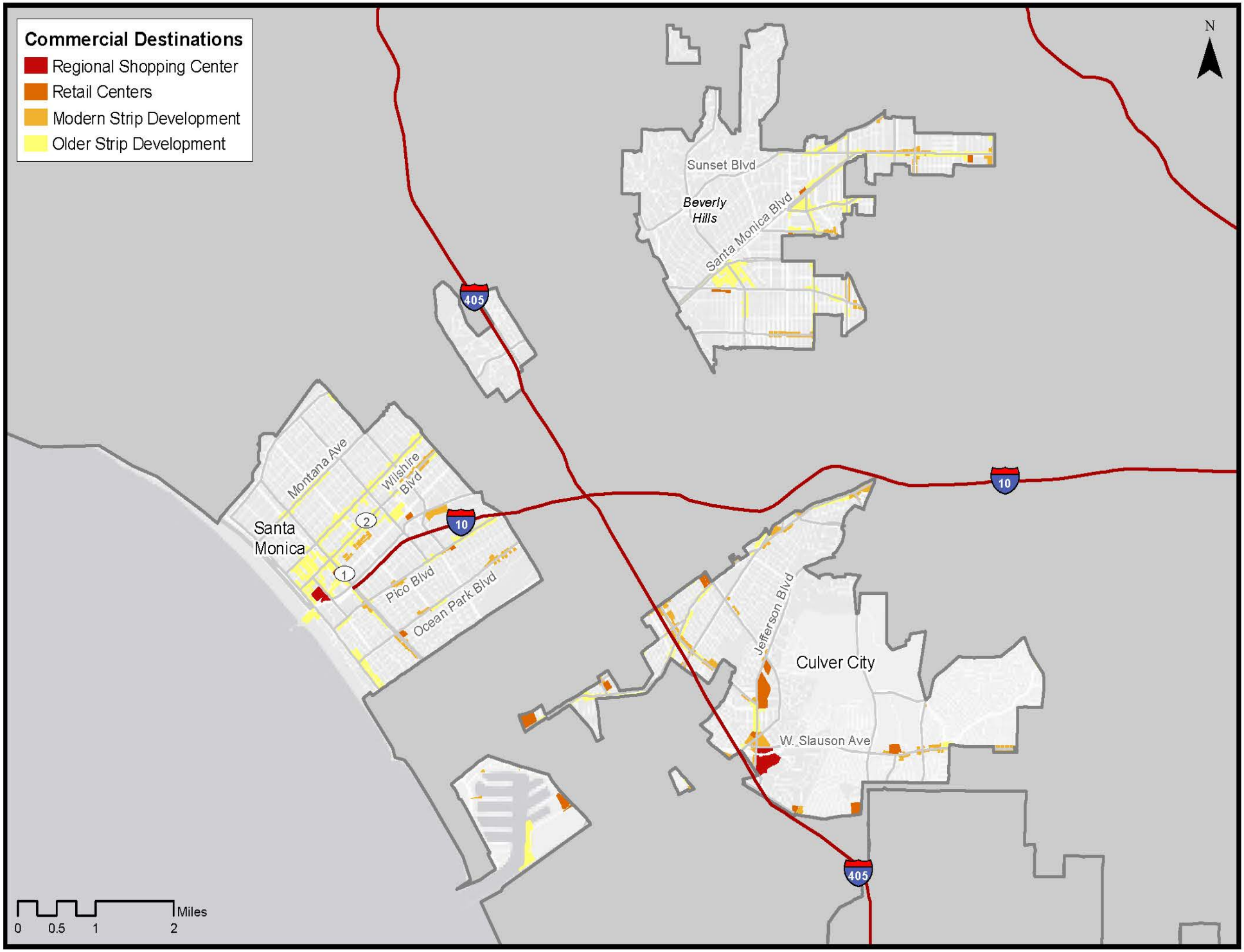
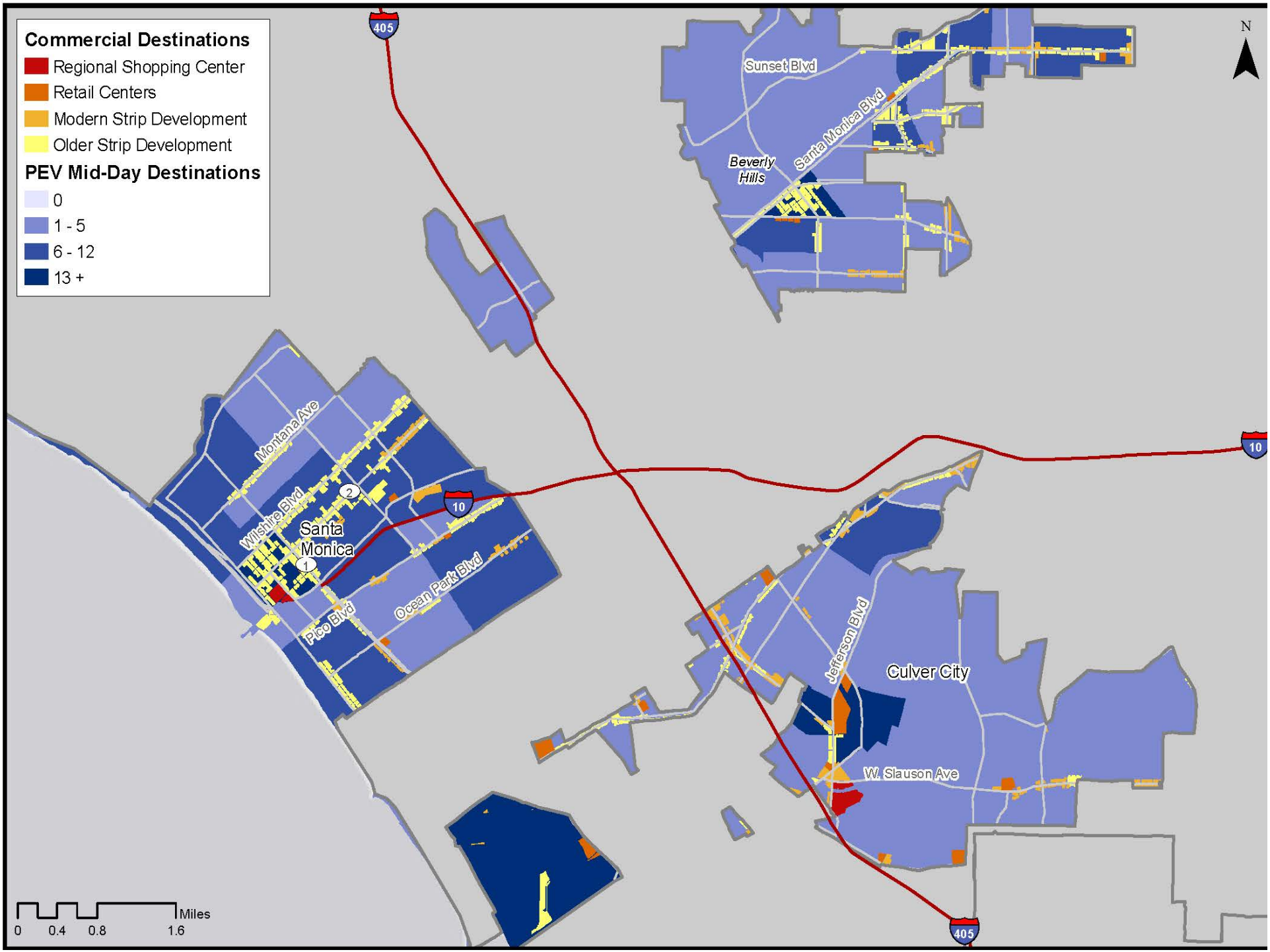
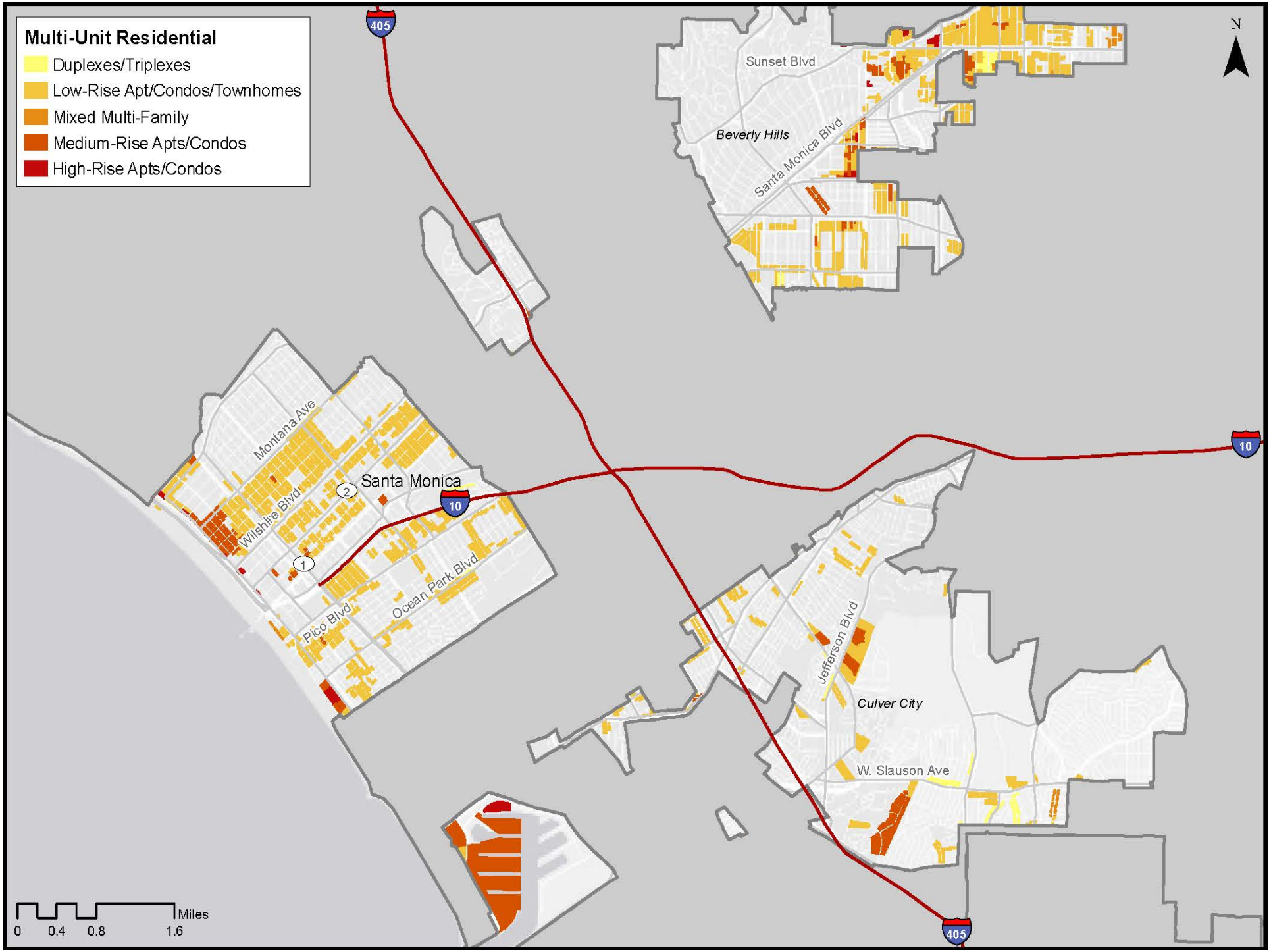
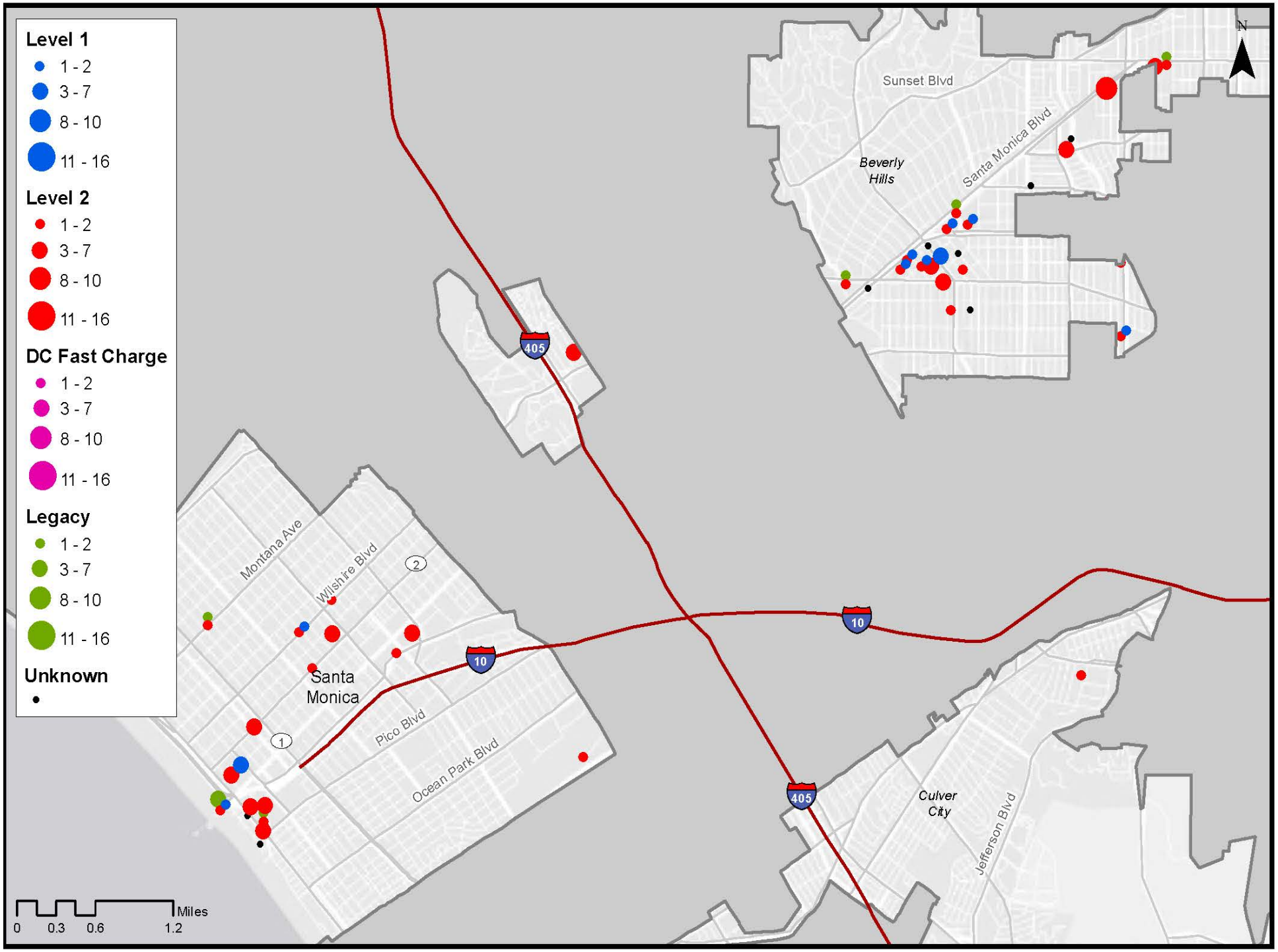
1,401 - 3,700
3,701 - 9,800
9,801 - 40,000
PEV AM Peak Destinations
0
1 - 5
6 - 12
13 +
N
405
10
Sunset Blvd
Santa Monica Blvd
Beverly Hills
Montana Ave
Wilshire Blvd
Santa Monica
Pico Blvd
Ocean Park Blvd
Jefferson Blvd
Culver City
W. Slauson Ave
9 AM Commuting Density
Miles
0 0.4 0.8 1.6


Commercial Destinations
Regional Shopping Center
Retail Centers
Modern Strip Development
Older Strip Development
N
Sunset Blvd
Beverly Hills
Santa Monica Blvd
405
10
Montana Ave
Wilshire Blvd
Santa Monica
2
1
Pico Blvd
Ocean Park Blvd
Jefferson Blvd
Culver City
W. Slauson Ave
0 0.5 1 2 Miles


Commercial Destinations
Regional Shopping Center
Retail Centers
Modern Strip Development
Older Strip Development
PEV Mid-Day Destinations
0
1 - 5
6 - 12
13 +
N
405
10
Sunset Blvd
Santa Monica Blvd
Beverly Hills
Montana Ave
Wilshire Blvd
Santa Monica
Pico Blvd
Ocean Park Blvd
Jefferson Blvd
Culver City
W. Slauson Ave
Miles
0
0.4
0.8
1.6

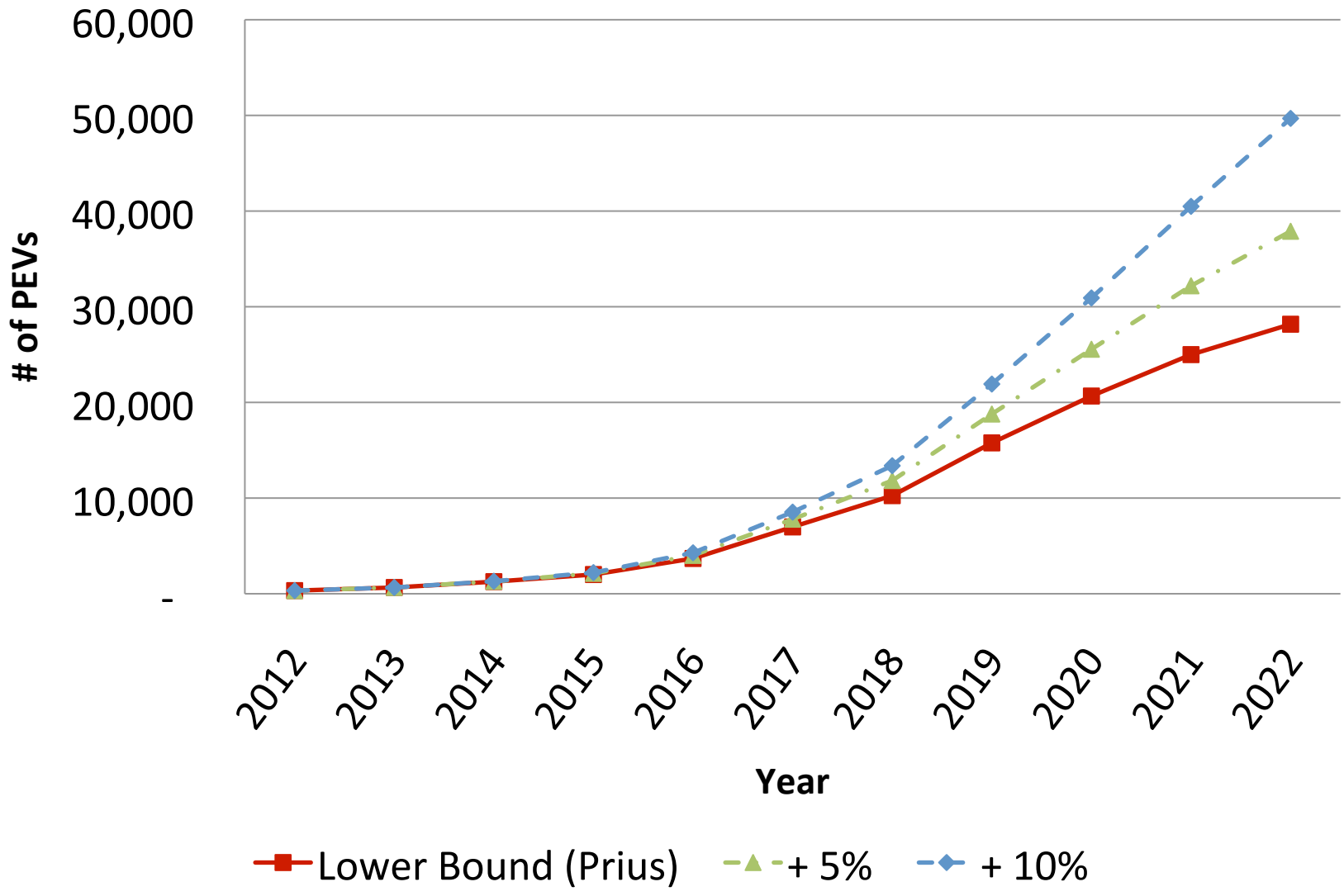

Multi-Unit Residential
Duplexes/Triplexes
Low-Rise Apt/Condos/Townhomes
Mixed Multi-Family
Medium-Rise Apts/Condos
High-Rise Apts/Condos
N
405
10
Sunset Blvd
Beverly Hills
Santa Monica Blvd
Montana Ave
Santa Monica
Wilshire Blvd
Pico Blvd
Ocean Park Blvd
Jefferson Blvd
Culver City
W. Slauson Ave
Miles
0
0.4
0.8
1.6


Level 1
1 - 2
3 - 7
8 - 10
11 - 16
Level 2
1 - 2
3 - 7
8 - 10
11 - 16
DC Fast Charge
1 - 2
3 - 7
8 - 10
11 - 16
Legacy
1 - 2
3 - 7
8 - 10
11 - 16
Unknown
N
Sunset Blvd
Santa Monica Blvd
Beverly Hills
405
10
Montana Ave
Wilshire Blvd
2
Santa Monica
Pico Blvd
Ocean Park Blvd
1
Culver City
Jefferson Blvd
Miles
0
0.3
0.6
1.2

COGs in SCAG Region

- Arroyo Verdugo Cities
- City of Los Angeles
- Coachella Valley Assn. of Govts.
- Gateway Cities COG
- Imperial Valley Transportation Commission
- Las Virgenes Malibu COG
- North Los Angeles County
- Orange County COG
- San Bernardino Associated Govts.
- San Fernando Valley COG
- San Gabriel Valley COG
- South Bay Cities COG
- Ventura COG
- Western Riverside COG
- Westside Cities COG

Westside Cities Council of Governments: Predicted PEV Sales



Example MUD Infra-structure hosting analysis

1. Region

Which cities have largest MUD resources?

City count analysis by land-use capacity

2. City

For which cities will MUDs be a priority land-use?

Parcel share analysis by land-use

3. Parcel Analysis

Which MUD parcels should be prioritized?

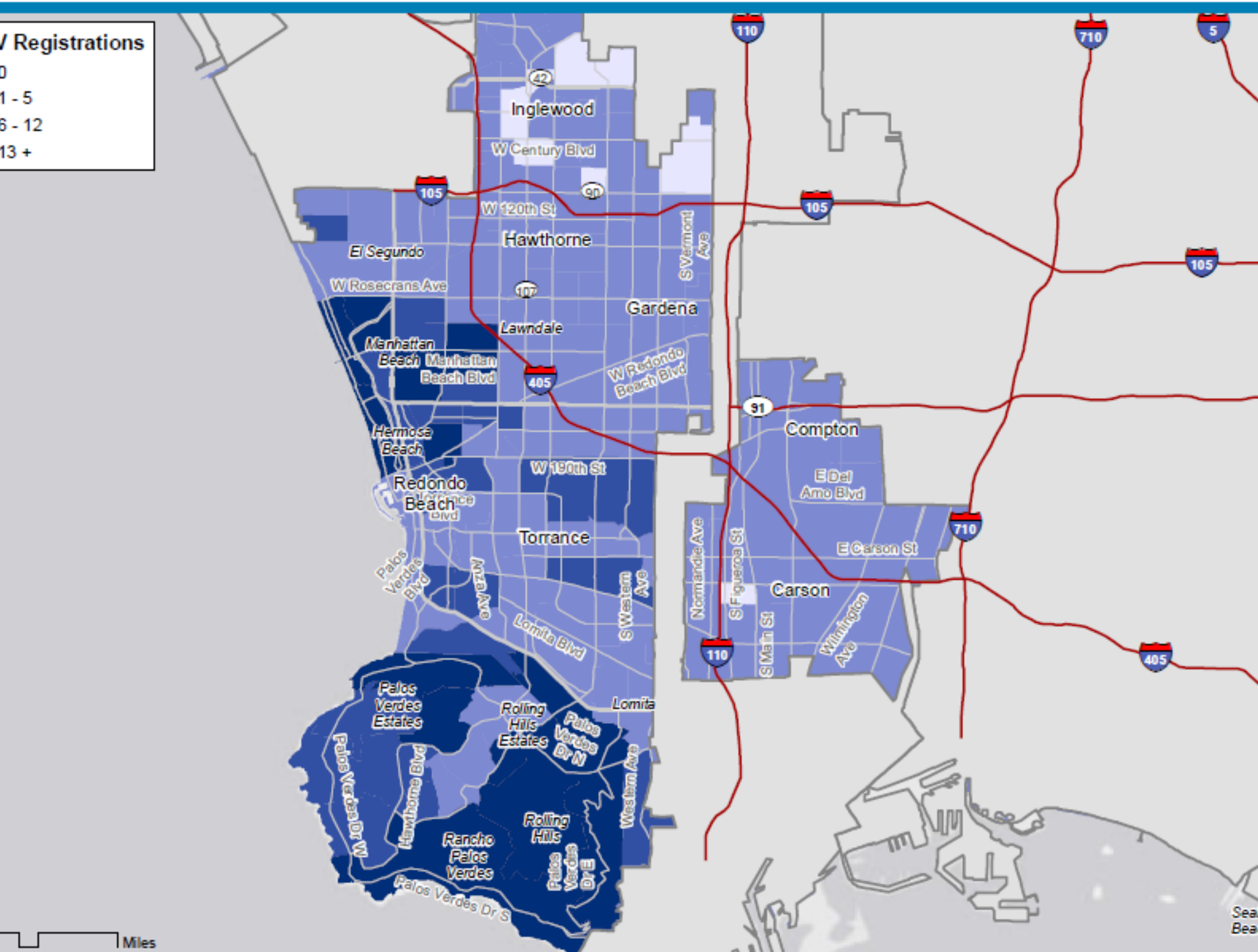
Municipal Planning
Which cities will prioritize MUDs?

	% MUD	% Employee	% Single-Family
Hawthorne	**40%**	39%	21%
Inglewood	**31%**	42%	27%
Hermosa Beach	**31%**	36%	33%
Redondo Beach	**26%**	44%	30%
Lomita	**24%**	28%	48%
Gardena	**20%**	53%	27%
Lawndale	**19%**	35%	45%
Torrance	**15%**	62%	23%
Rancho Palos Verdes	**11%**	23%	66%
Manhattan Beach	**10%**	53%	37%
El Segundo	**5%**	89%	5%
Palos Verdes Estates	**5%**	28%	67%
Carson	**4%**	66%	30%
Rolling Hills Estates	**2%**	58%	40%
Rolling Hills	**0%**	26%	74%

Sub-regional Planning
Cities with the most MUD units?

	MUD Count	Employee Count	Single-Family Count
Torrance	**22,709**	97,325	35,771
Inglewood	**21,117**	28,604	18,192
Hawthorne	**19,689**	19,411	10,345
Redondo Beach	**14,175**	23,471	16,091
Gardena	**9,427**	24,951	12,944
Hermosa Beach	**5,080**	5,865	5,401
El Segundo	**3,721**	61,492	3,582
Manhattan Beach	**3,215**	17,139	12,044
Lawndale	**3,170**	5,783	7,419
Carson	**2,920**	49,776	22,935
Lomita	**2,695**	3,096	5,383
Rancho Palos Verdes	**2,340**	4,713	13,452
Palos Verdes Estates	**356**	2,028	4,922
Rolling Hills Estates	**156**	4,268	2,928
Rolling Hills	**0**	237	689

g in Electric Vehicle Registrations



MUDs in high-PEV Neighborhoods

Address	City	ZIP	Units	Condo	Year Built	Average Value/Unit
415 Herondo St	Hermosa Beach	90254	286	N	1973	$249,187
2442 Pacific Coast Hwy	Torrance	90717	91	N	1963	$46,022
25940 Rolling Hills Rd	Torrance	90505	77	N	1971	$38,288
3107 Newton St	Torrance	90505	76	N	1969	$33,280
6600 Beachview Dr	Rancho Palos Verdes	90275	57	N	1970	$273,789
6568 Beachview Dr	Rancho Palos Verdes	90275	57	N	1970	$273,789
32636 Nantasket Dr	Rancho Palos Verdes	90275	53	N	1968	$588,906
3400 N Valley Dr	Manhattan Beach	90266	48	N	1991	$94,418
420 2nd St	Hermosa Beach	90254	44	N	1971	$1,497,545
25220 Tandem Way	Torrance	90505	43	N	1963	$333,357
1910 Manhattan Beach Blvd	Redondo Beach	90278	40	N		$106,846
26130 Narbonne Ave	Lomita	90717	39	Y	1975	$350,000
1150 Tennyson St	Manhattan Beach	90266	38	N	1963	$124,604
2205 Farrell Ave	Redondo Beach	90278	36	N	1972	$113,711
3650 Newton St	Torrance	90505	36	N	1963	$41,791
1900 Dufour St	Redondo Beach	90278	33	N	1970	$121,671
25909 Rolling Hills Rd	Torrance	90505	30	N	1970	$120,133
1601 Artesia Blvd	Manhattan Beach	90266	21	N		$21,909
24065 Neece Ave	Torrance	90505	21	N	1968	$33,455
2110 Farrell Ave	Redondo Beach	90278	20	N	1970	$103,240

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Thank You

deshazo@ucla.edu

luskin.ucla.edu/ev