SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Environmental Justice Analysis Framework for the 2012 RTP/SCS

September 13, 2011

SCAG's Analysis

Framework:

- System-wide, region-wide analysis for RTP
- Compare RTP Plan ("the Plan") vs. without the Plan ("Baseline" or No Project")
- The core questions:
  - Are people worse or better off with or without the Plan?
  - Is there a disproportionate negative impact of the Plan on any group?

SCAG's Analysis

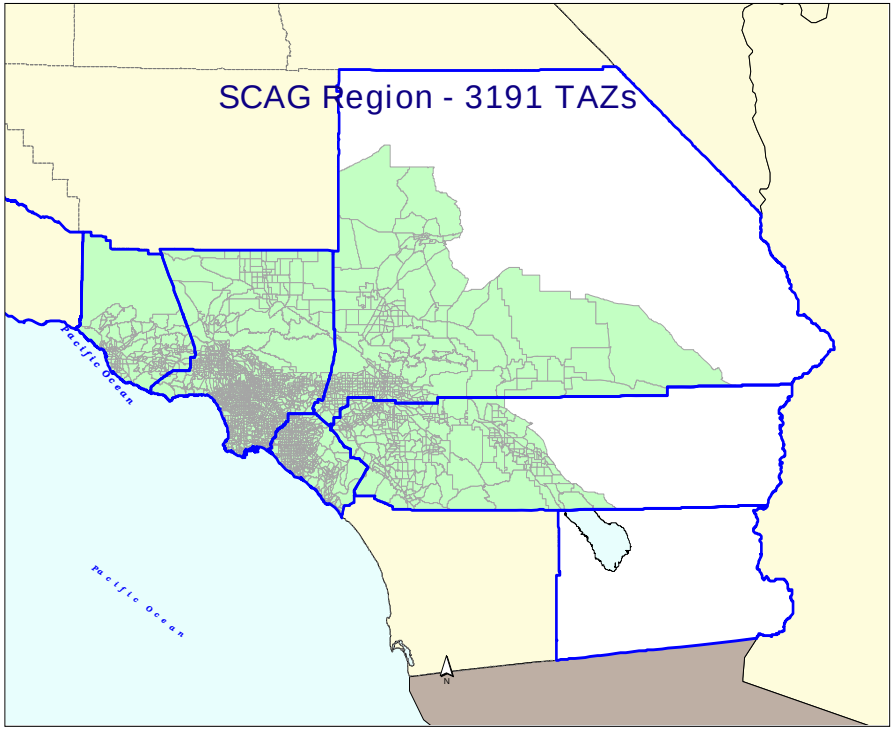
Overview:

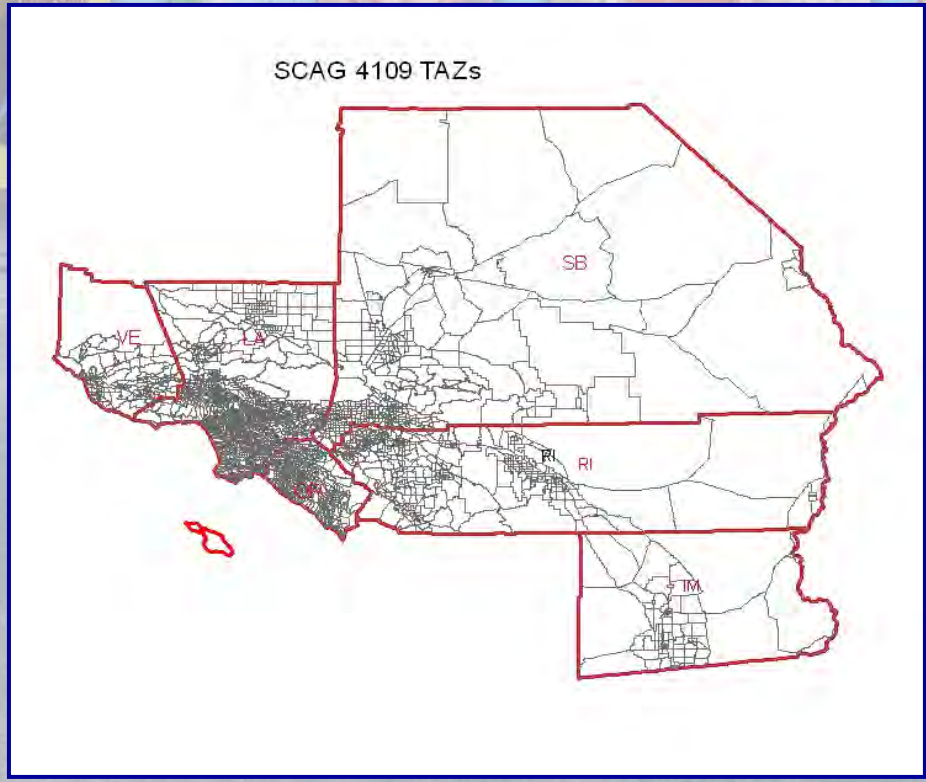
- Transportation Model/Tools
- Geographic Level: Traffic Analysis Zone (TAZ)
- Socioeconomic Variables
- Regional Transportation Plan
- Tools
  - SCAG Regional Travel Demand Model & Networks
  - Direct Transportation Impact Model (DTIM)
- Performance Outcomes

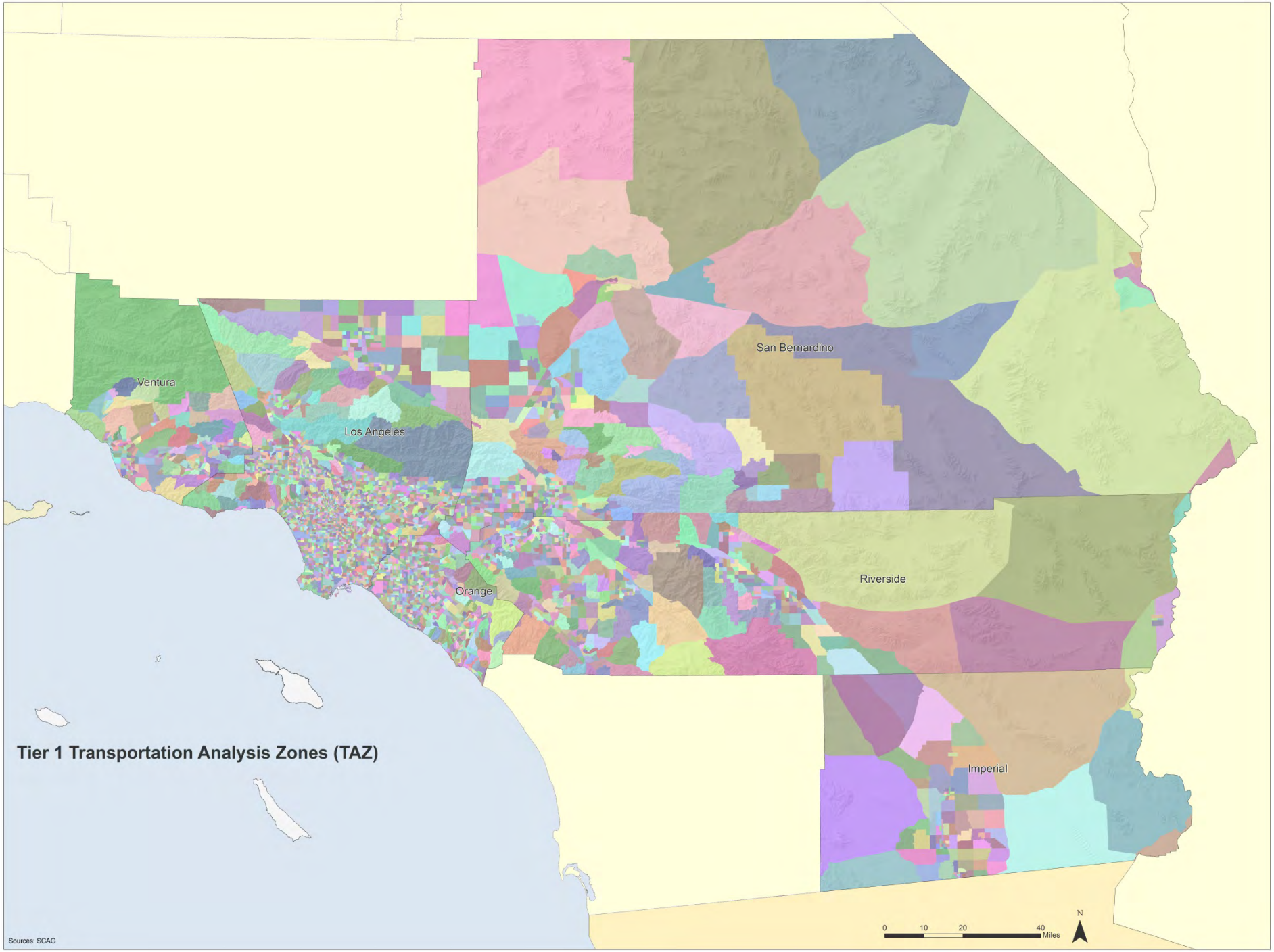
Modeling Area

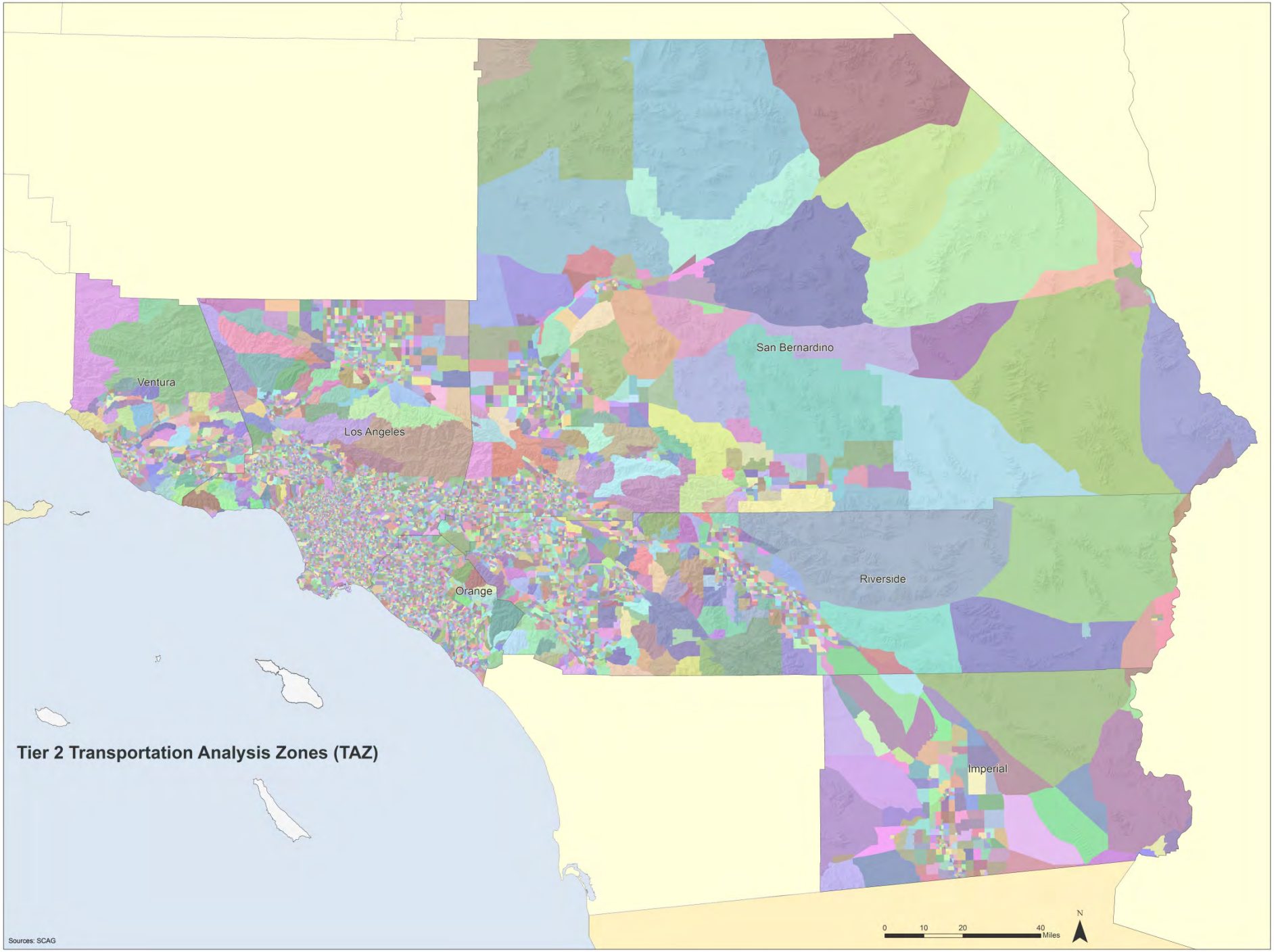
- SCAG's Modeling Area
  - 38,000 square miles
  - 4 air basins
  - 6 counties (IM, OR, RV, SB, VN, LA)
  - 56 Regional Statistical Area (RSA)
  - 302 Community Statistical Area (CSA)
  - 11,000+ Traffic Analysis Zones (TAZ)

Transportation Analysis Zones (TAZs)






Ventura
Los Angeles
San Bernardino
Orange
Riverside
Imperial
Tier 1 Transportation Analysis Zones (TAZ)
Sources: SCAG
0 10 20 40 Miles
N

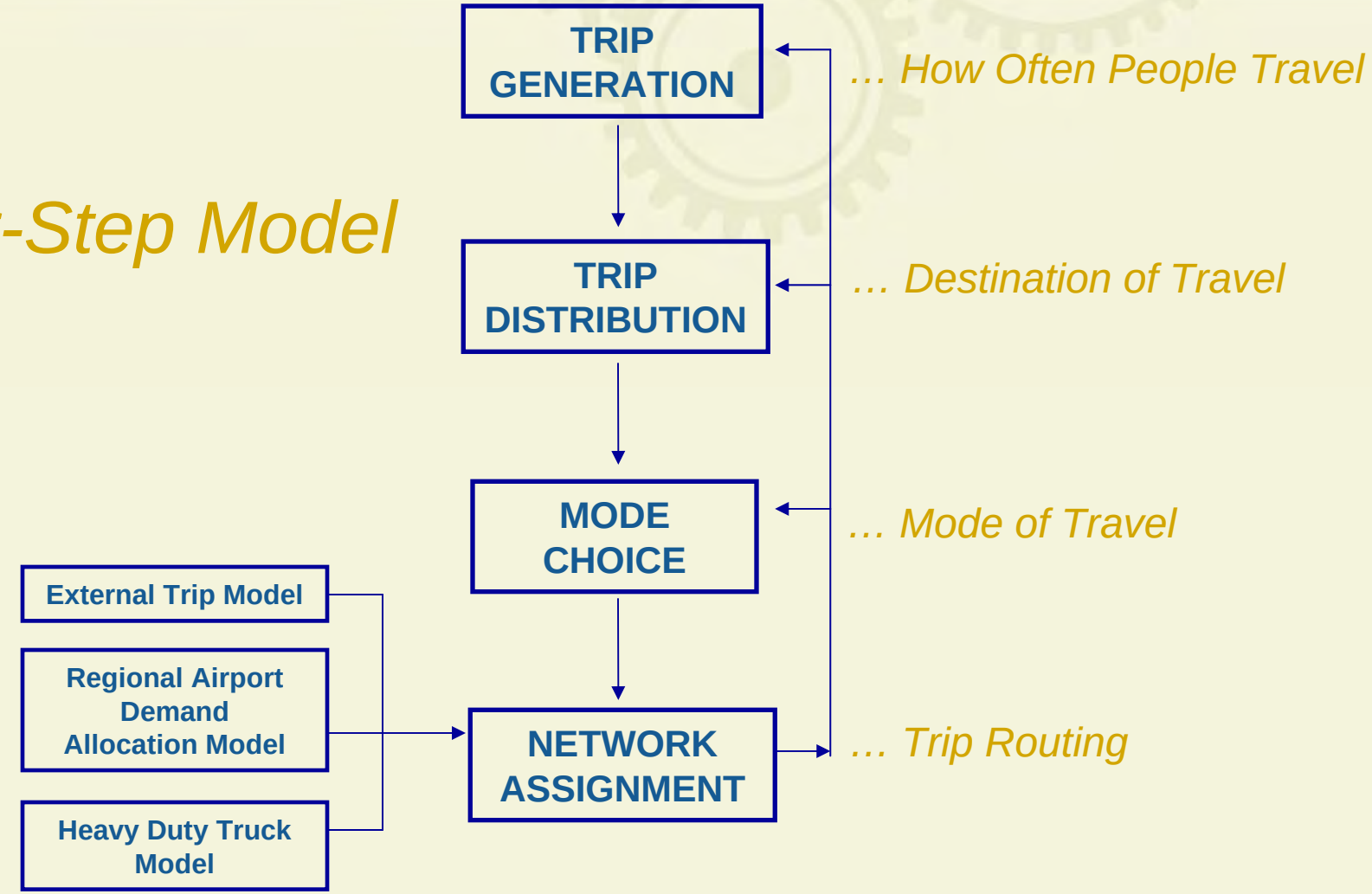

Ventura
Los Angeles
San Bernardino
Orange
Riverside
Imperial
Tier 2 Transportation Analysis Zones (TAZ)
Sources: SCAG
0 10 20 40 Miles
N

Model Components

- Transportation Model
  - Passenger Car
  - Transit
  - Non-Motorized
- Truck Model
- Pricing Model
- Air Passenger Model
- Air Cargo Model
- Air Quality Model (ARB's EMFAC Model)

Model Structure

Four-Step Model



Model Products

- Examples of useful model outputs:
  - VMT
  - Traffic volumes
  - Hours of delay
  - Average speed
  - Mode share
- Examples of useful indicators derived from model output:
  - Mobility (speed and delay)
  - Accessibility (access to opportunities)
  - Reliability (day-to-day trip time variation)
  - Productivity (system performance during peak hours)

Socioeconomic Variables

- Ethnicity
  - Minority (Hispanic, Asian & Pacific Islanders, African Americans, Native Americans, Others)
  - Non-Hispanic White
- Poverty Level
- Ages & Elderly (Over 65)
- Gender
- Disabled (per Census)
- Community Indicators

- Income Quintile
  I. Below $19, 360
  II. $19,361 to $36,340
  III. $36,341 to $57,323
  IV. $57,324 to $91,402
  V. Above $91,402

Analysis of Household Distribution by:

- Regional Household
- Hispanic Household
- Asian Household
- Non-Hispanic White

The Analysis

SCAG Region Workers Commuting by Mode and by Ethnicity and by Income Quintile

Income Quintile	Auto-Drive Alone	Auto-Carpool	Bus	Streetcar	Subway/Elevated	Rail	Walk	Work at Home	Others	Sum	Auto Mode	Transit Limit Mode	Total Transit Mode
Quintile I	6.6%	9.1%	21.9%	5.0%	15.9%	3.2%	20.7%	9.9%	13.5%	8.2%	7.0%	21.5%	20.6%
Quintile II	14.3%	18.4%	28.1%	23.7%	16.1%	8.7%	25.0%	13.9%	20.2%	15.9%	15.0%	27.8%	26.8%
Quintile III	20.5%	23.2%	22.5%	23.6%	20.4%	17.4%	23.1%	17.4%	22.7%	21.0%	21.0%	22.5%	22.2%
Quintile IV	27.8%	26.6%	17.6%	32.1%	24.3%	31.5%	17.7%	22.7%	23.4%	26.7%	27.6%	17.9%	18.6%
Quintile V	30.8%	22.7%	9.9%	15.6%	23.2%	39.3%	13.5%	36.2%	20.2%	28.3%	29.4%	10.3%	11.7%
Sum	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Race/Ethnicity	Auto-Drive Alone	Auto-Carpool	Bus	Streetcar	Subway/Elevated	Rail	Walk	Work at Home	Others	Sum	Auto Mode	Transit Limit Mode	Total Transit Mode
NH White	50.5%	29.7%	12.4%	28.7%	36.1%	48.7%	33.1%	65.9%	36.3%	45.6%	46.9%	13.2%	15.0%
NH Black	6.4%	6.1%	10.4%	15.1%	11.2%	12.2%	5.0%	4.9%	4.3%	6.4%	6.3%	10.5%	10.5%
NH Asian	11.6%	11.8%	7.1%	8.8%	12.8%	12.9%	9.8%	8.8%	6.9%	11.2%	11.6%	7.2%	7.5%
NH Indian	0.4%	0.4%	0.4%	1.1%	0.0%	0.3%	0.4%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%
NH Other	2.6%	2.3%	2.0%	4.0%	3.3%	2.0%	2.9%	2.6%	2.8%	2.6%	2.6%	2.1%	2.1%
Hispanic	28.6%	49.7%	67.7%	42.3%	36.7%	23.8%	48.7%	17.4%	49.3%	33.9%	32.3%	66.6%	64.5%
Sum	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NOTE:

1. Any questions related to overall methodology should be directed to Frank Wen at 213-236-1854 or His-Hwa Hu at 213-236-1834.
2. Any citation and quote not related to 2004RTP and future publications and citation should obtain permission from Community and Economic Development Division (CED).
3. The data and tabulation were developed to meet the 2004 RTP EJ requirements and CED work program re Hispanic Socioeconomic Status and Implications on Regional Planning.

Source: 2000 Census data, PUMS data processed by SCAG Community Development staff.

The Analysis

2004 RTP Environmental Justice Analysis Results

	Baseline Expenditure	Plan Expenditure	Usage	Tax Paid	Auto Time Savings	Auto PMT Savings	Local Transit-PHT Savings	Auto Accessibility Improvement	Local Transit Accessibility Improvement	All Transit Accessibility Improvement
Quintile I	15.7%	10.5%	8.2%	8.5%	5.8%	9.8%	23.7%	14.6%	26.1%	61.8%
Quintile II	22.6%	17.7%	15.9%	13.1%	13.4%	23.6%	30.4%	15.9%	24.5%	65.0%
Quintile III	21.7%	21.0%	21.0%	17.6%	20.5%	27.7%	23.0%	17.4%	19.3%	71.1%
Quintile IV	21.8%	25.2%	26.7%	24.1%	29.5%	21.7%	15.8%	18.8%	18.6%	76.7%
Quintile V	18.1%	25.7%	28.3%	36.7%	30.8%	17.2%	7.1%	18.7%	18.0%	88.5%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%			

	Baseline Expenditure	Plan Expenditure	Usage	Tax Paid	Auto Time Savings	Auto PMT Savings	Local Transit-PHT Savings	Auto Accessibility Improvement	Local Transit Accessibility Improvement	All Transit Accessibility Improvement
NH White	26.4%	39.6%	45.6%	n.a.	36.4%	-43.2%	4.6%	18.0%	12.1%	109.8%
NH Black	9.0%	7.5%	6.4%	n.a.	4.3%	5.8%	6.9%	11.3%	13.6%	71.2%
NH Asian	9.0%	10.5%	11.2%	n.a.	11.6%	33.9%	7.2%	16.7%	26.1%	71.0%
NH Native American	0.4%	0.4%	0.4%	n.a.	0.6%	-0.8%	0.3%	20.4%	21.6%	71.0%
NH Others	2.2%	2.4%	2.6%	n.a.	3.1%	1.3%	1.7%	14.5%	17.8%	101.8%
Hispanic	53.1%	39.6%	33.9%	n.a.	44.0%	103.0%	79.3%	18.0%	24.7%	54.6%
	100.0%	100.0%	100.0%	n.a.	100.0%	100.0%	100.0%			

Note: PMT-Person Mile Travel
PHT-Person Hour Travel

Any questions related to overall methodology should be directed to Frank Wen at 213-236-1854 or His-Hwa Hu at 213-236-1834.
Any questions Census data processing and methodology related to EJ data should be directed to Ying Zhou at 213-236-1943 or Simon Choi at 213-236-1849.
Any questions related to SCAG Regional Transportation Modeling should be directed to Deng Bang Lee at 213-238-1855, Teresa Wang at 213-236-1842, or Guoxiong Huang at 213-236-1947.
Any citation and quote not related to 2004RTP and future publications and citation should obtain permission from all above authors.

Source: SCAG Transportation Model Outputs, 2000 Census data, PUMS data, and CA State Taxable Sales data, processed by SCAG Community Devp. staff.

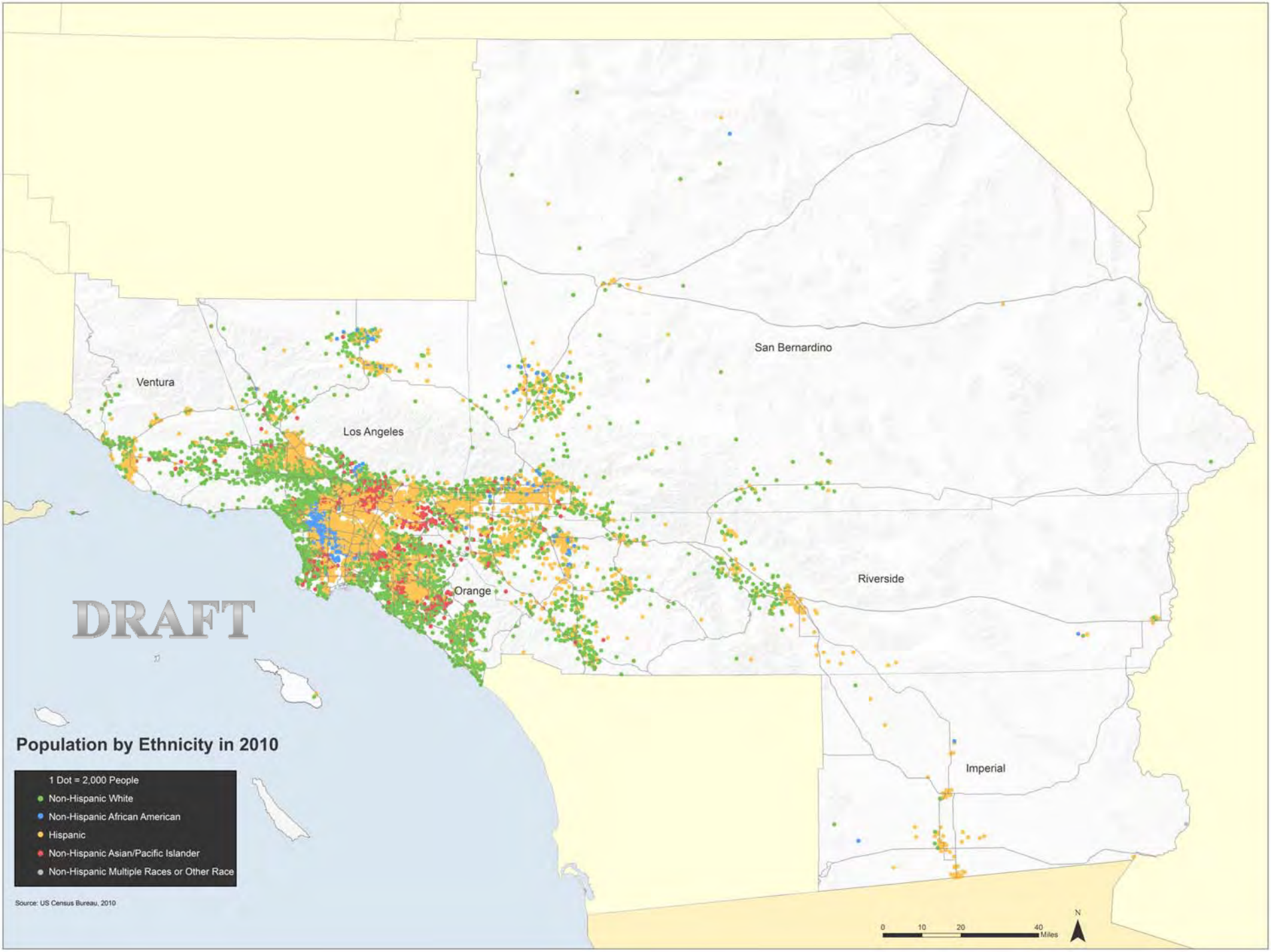
Previous RTP Analysis

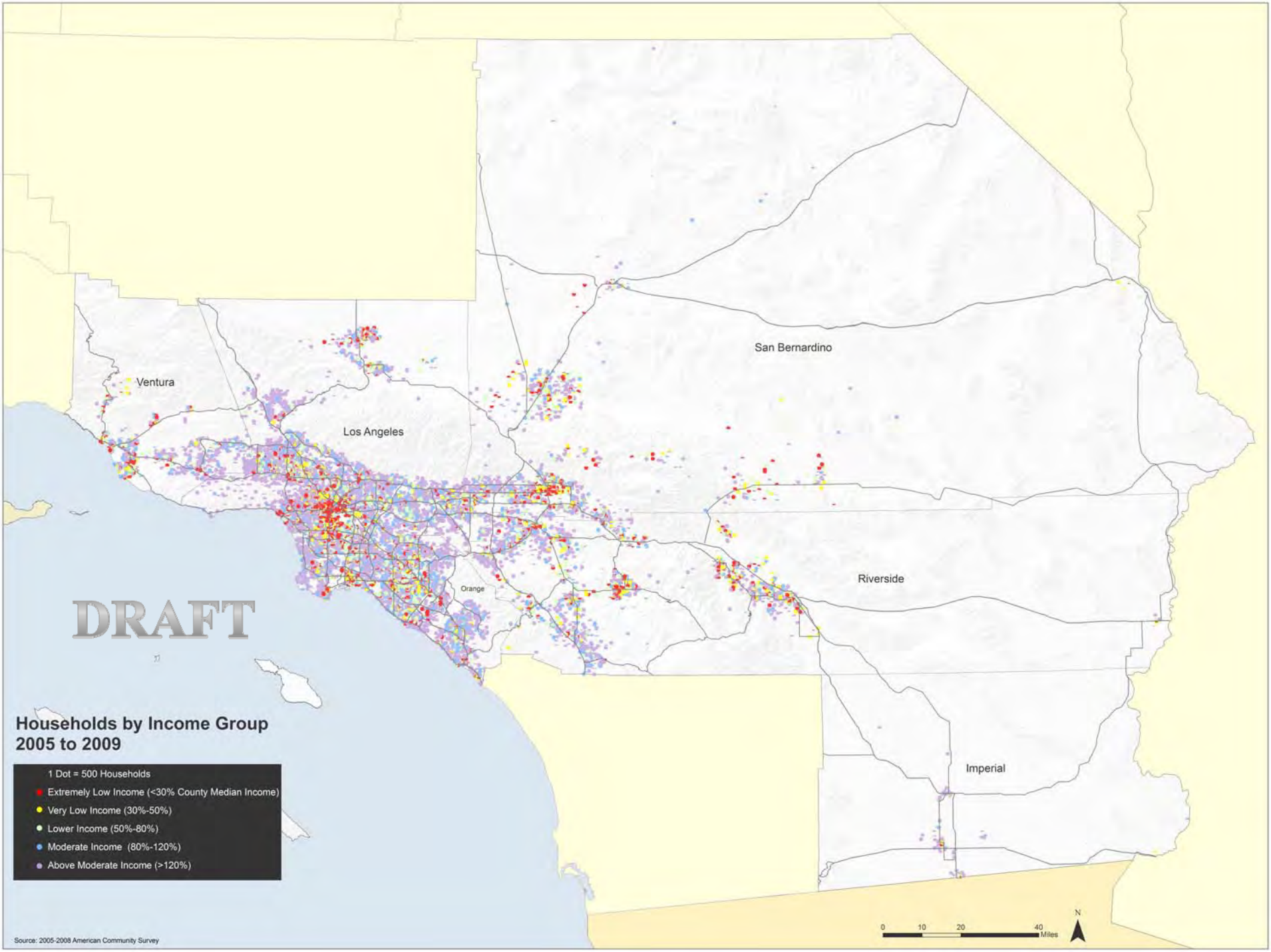
Overall Improvements In:

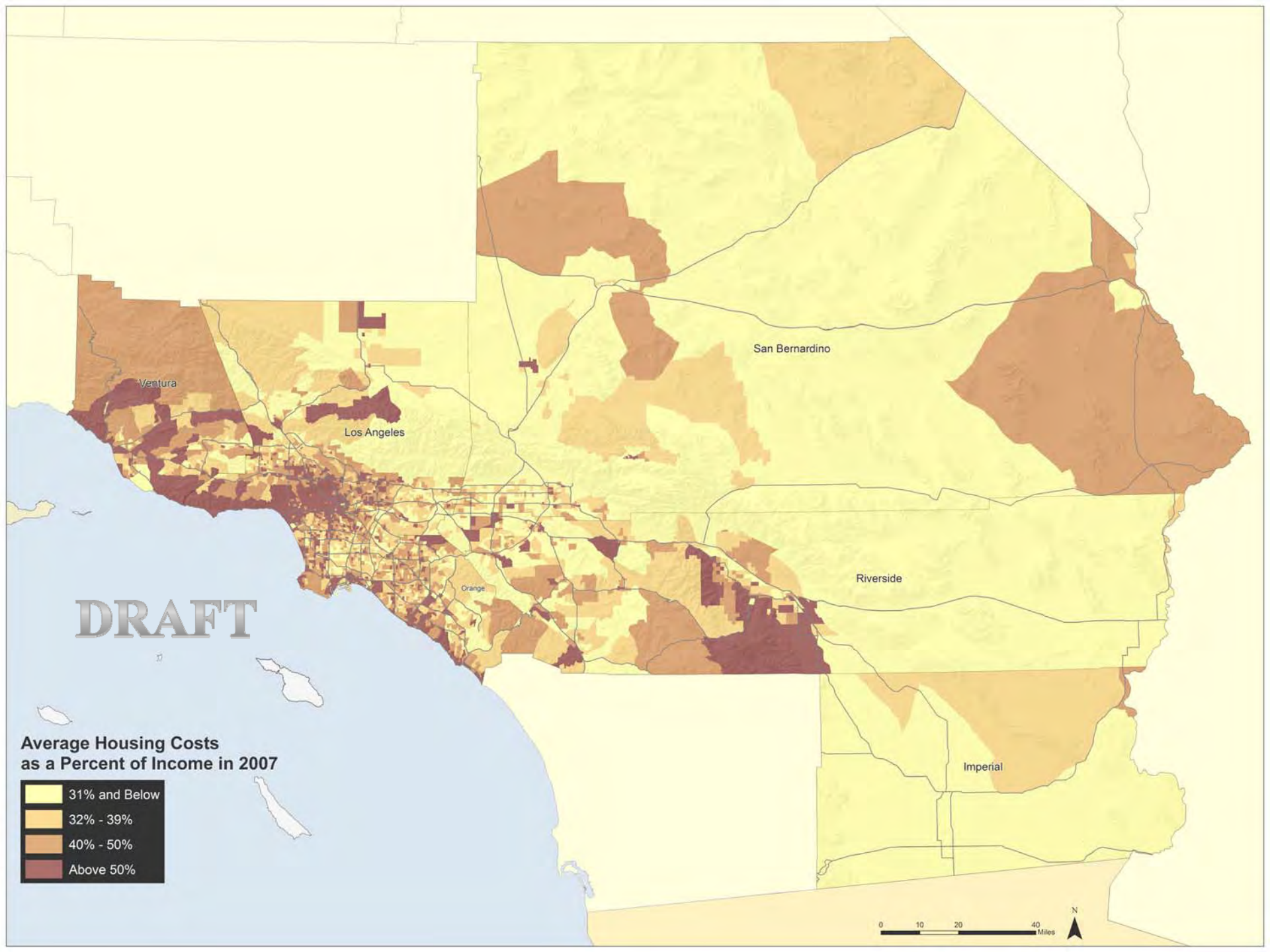
- Accessibility (employment and application, open space)
- Air pollutants
- Travel time savings (transit and auto)
- Auto travel distance reductions
- Plan expenditures/investment (RTP)
- Sales and gasoline tax burdens

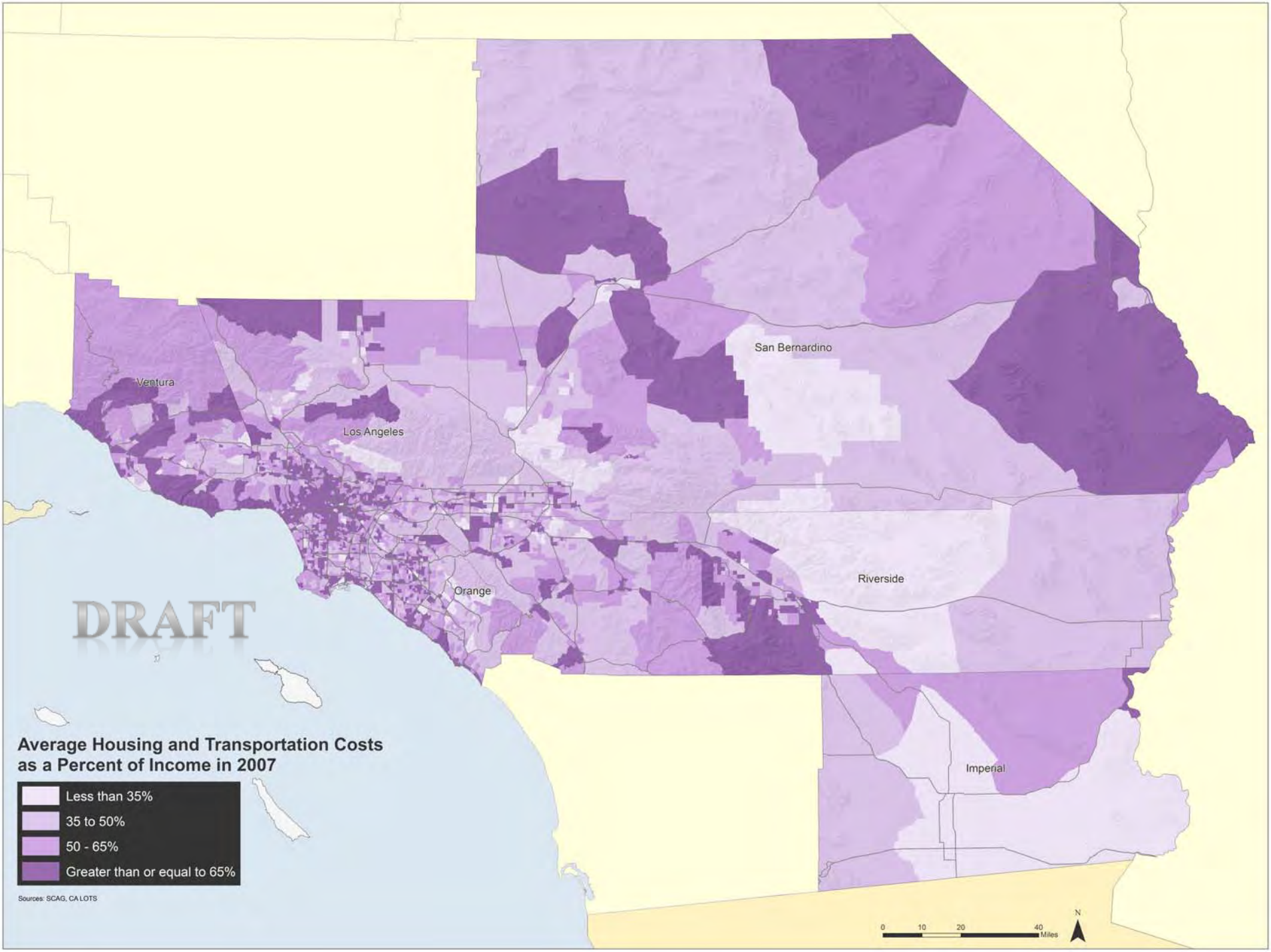
Plans to Do for the 2012 RTP/SCS

- Focus more on non-motorized transportation
- Identify and quantify the primary environmental justice challenges in transportation in the region; identify baseline
- Bring public health to the forefront—focus on pollutants
- Analyze likely gentrification with urban infill and TOD
- Take steps to benefit impacted communities, not only mitigating adverse impacts—Form focus groups


Ventura
Los Angeles
San Bernardino
Orange
Riverside
Imperial
DRAFT
Population by Ethnicity in 2010
1 Dot = 2,000 People
Non-Hispanic White
Non-Hispanic African American
Hispanic
Non-Hispanic Asian/Pacific Islander
Non-Hispanic Multiple Races or Other Race
Source: US Census Bureau, 2010
0 10 20 40 Miles
N


Ventura
Los Angeles
San Bernardino
Orange
Riverside
Imperial
DRAFT
Households by Income Group
2005 to 2009
1 Dot = 500 Households
Extremely Low Income (<30% County Median Income)
Very Low Income (30%-50%)
Lower Income (50%-80%)
Moderate Income (80%-120%)
Above Moderate Income (>120%)
Source: 2005-2008 American Community Survey
0
10
20
40
Miles
N


Ventura
Los Angeles
San Bernardino
Orange
Riverside
Imperial
DRAFT
Average Housing Costs
as a Percent of Income in 2007
31% and Below
32% - 39%
40% - 50%
Above 50%
0
10
20
40
Miles
N


Ventura
Los Angeles
San Bernardino
Orange
Riverside
Imperial
DRAFT
Average Housing and Transportation Costs
as a Percent of Income in 2007
Less than 35%
35 to 50%
50 - 65%
Greater than or equal to 65%
Sources: SCAG, CA LOTS
0
10
20
40
Miles
N

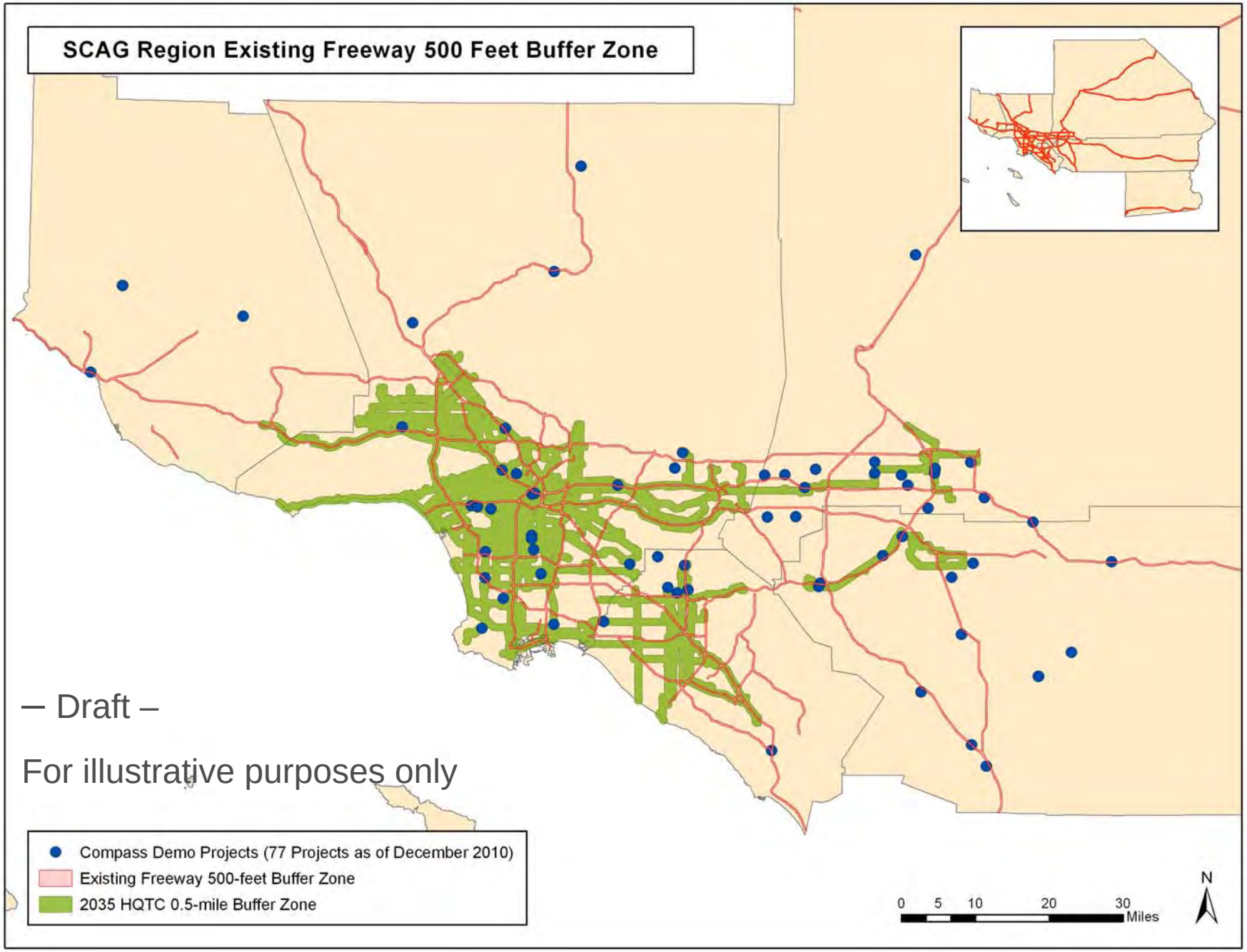
New Analysis Areas

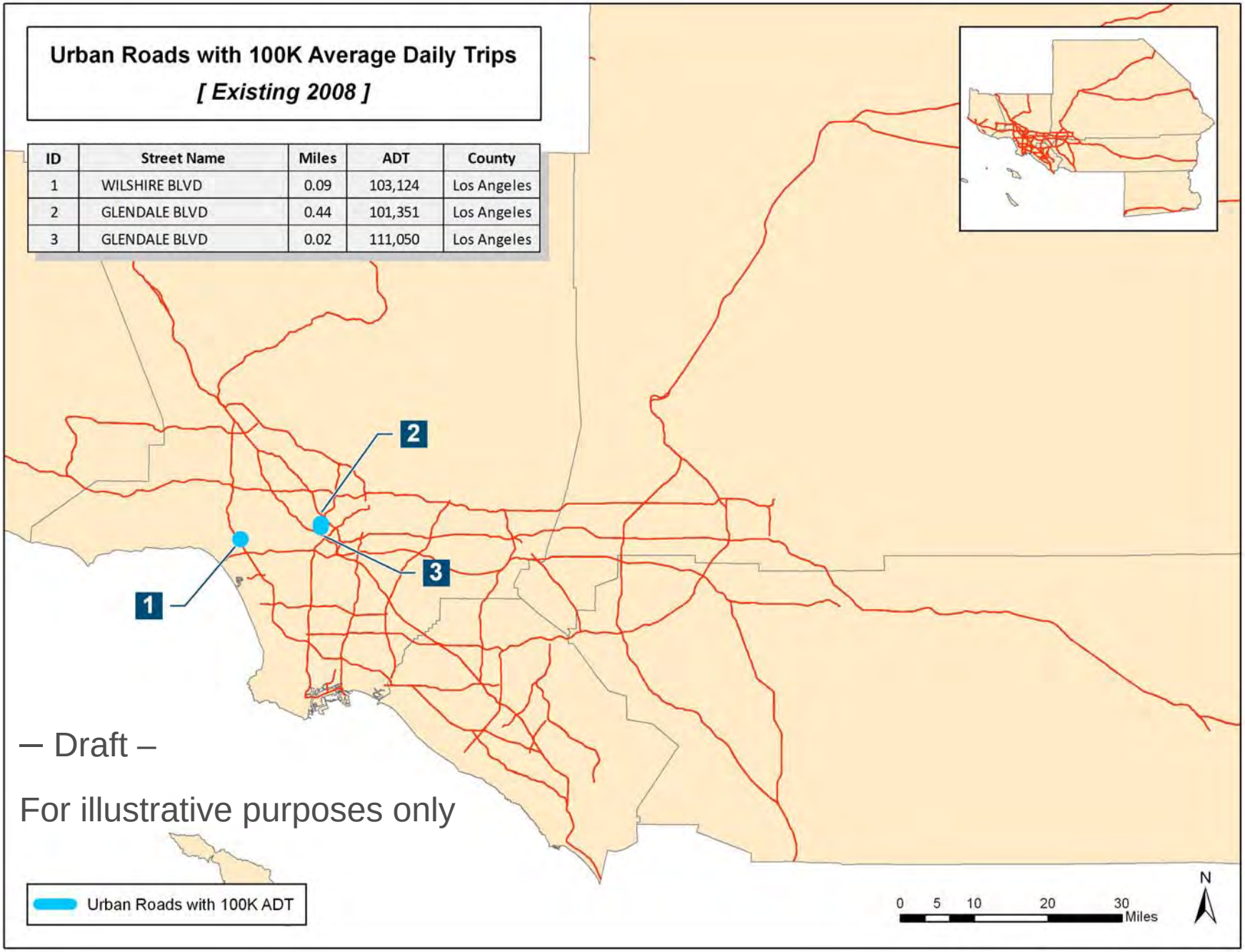
- Gentrification and displacement
- Air quality impacts along freeways and highly traveled corridors
- Rail related impacts
- Impacts of pricing strategies

Proposed Technical Approach

1. Identify urban rails, rail stations, and major transit hubs completed between: 1990/2000, and between 2000/2010
2. Pull census data within ¼ to 1/2 mile circle of those stations before construction/operation and after construction/operation to assess any EJ concerns or impacts
3. Follow the methodology published by EJ Analysis of TODs from Northeastern university, See link below:

http://www.reconnectingamerica.org/news-center/half-mile-circles/2010/cautionary-lessons-in-planning-transit-oriented-development-avoiding-gentrification-and-displacement/


SCAG Region Existing Freeway 500 Feet Buffer Zone
– Draft –
For illustrative purposes only
Compass Demo Projects (77 Projects as of December 2010)
Existing Freeway 500-feet Buffer Zone
2035 HQTC 0.5-mile Buffer Zone
0 5 10 20 30
Miles
N


Urban Roads with 100K Average Daily Trips
[Existing 2008]
ID | Street Name | Miles | ADT | County
1 | WILSHIRE BLVD | 0.09 | 103,124 | Los Angeles
2 | GLENDALE BLVD | 0.44 | 101,351 | Los Angeles
3 | GLENDALE BLVD | 0.02 | 111,050 | Los Angeles
1
2
3
– Draft –
For illustrative purposes only
Urban Roads with 100K ADT
0 5 10 20 30
Miles
N

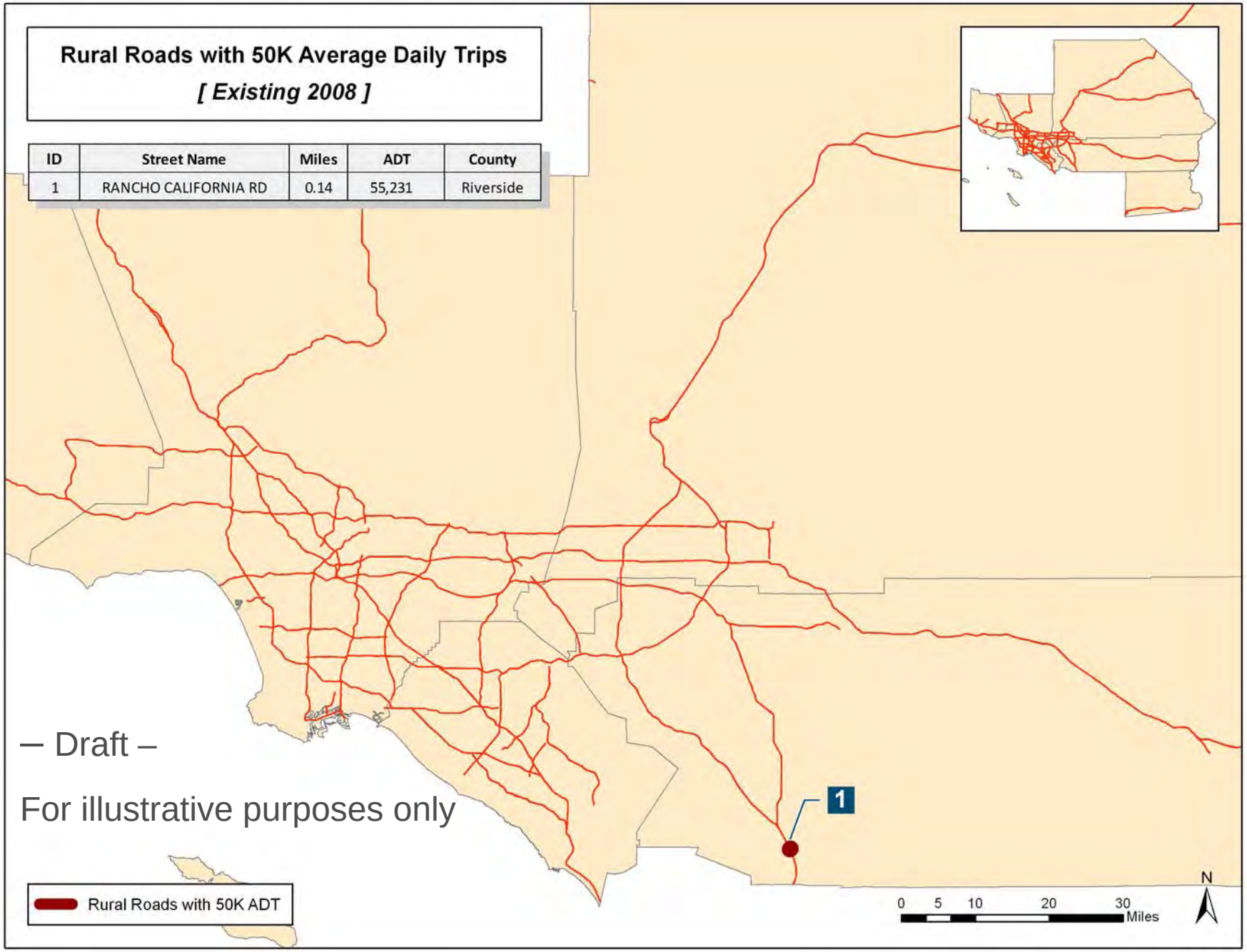
Urban Roads with 100K Average Daily Trips

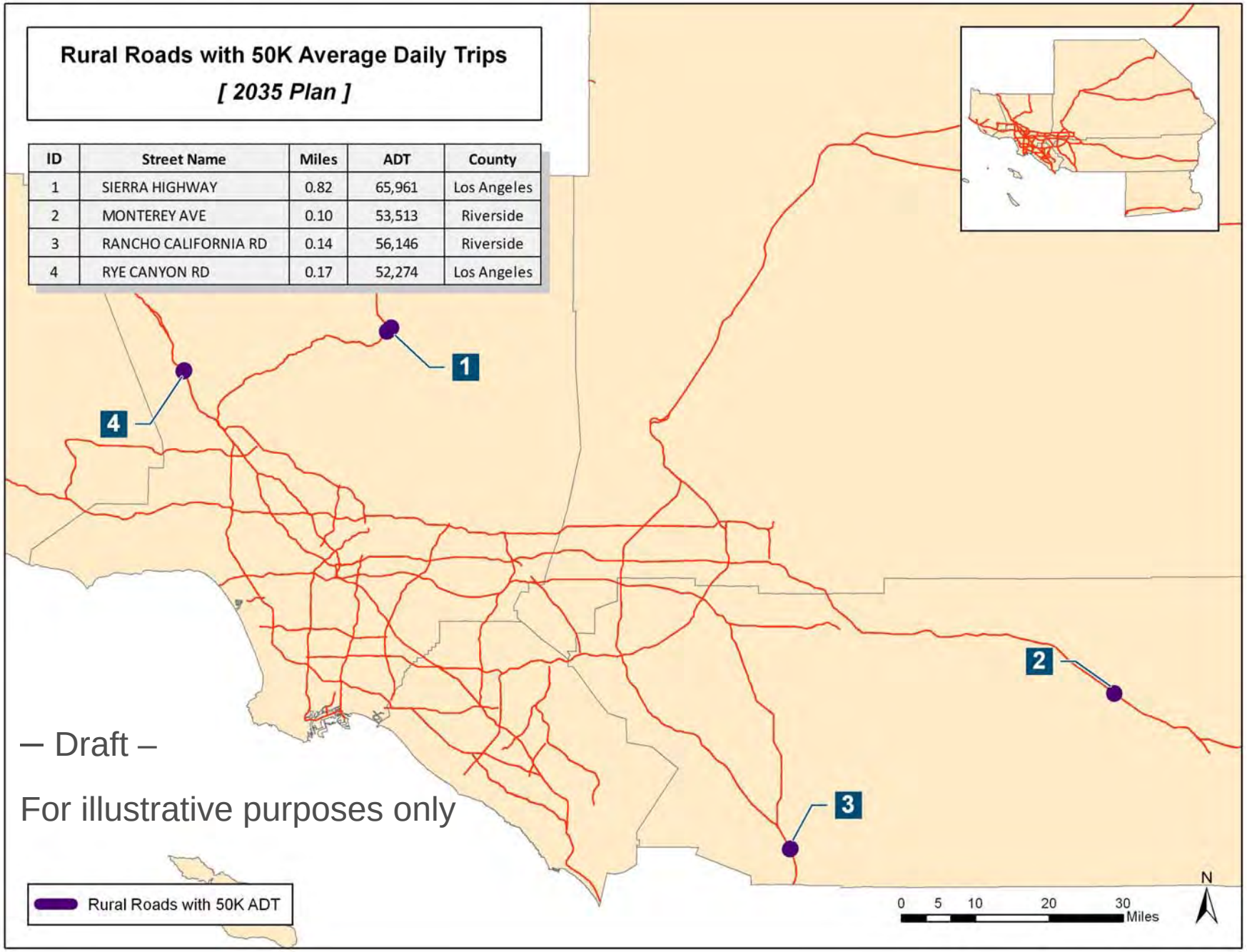
[2035 Plan]

ID	Street Name	Miles	ADT	County
1	WILSHIRE BLVD	0.09	109,442	Los Angeles
2	GLENDALE BLVD	0.44	103,817	Los Angeles
3	S. SEPULVEDA BLVD	0.43	100,209	Los Angeles
4	WILSHIRE BLVD	0.14	102,566	Los Angeles
5	PACIFIC COAST HIGHWAY	0.05	103,492	Los Angeles
6	GLENDALE BLVD	0.02	114,296	Los Angeles
7	VAN BUREN BLVD	0.06	100,655	Riverside

– Draft –

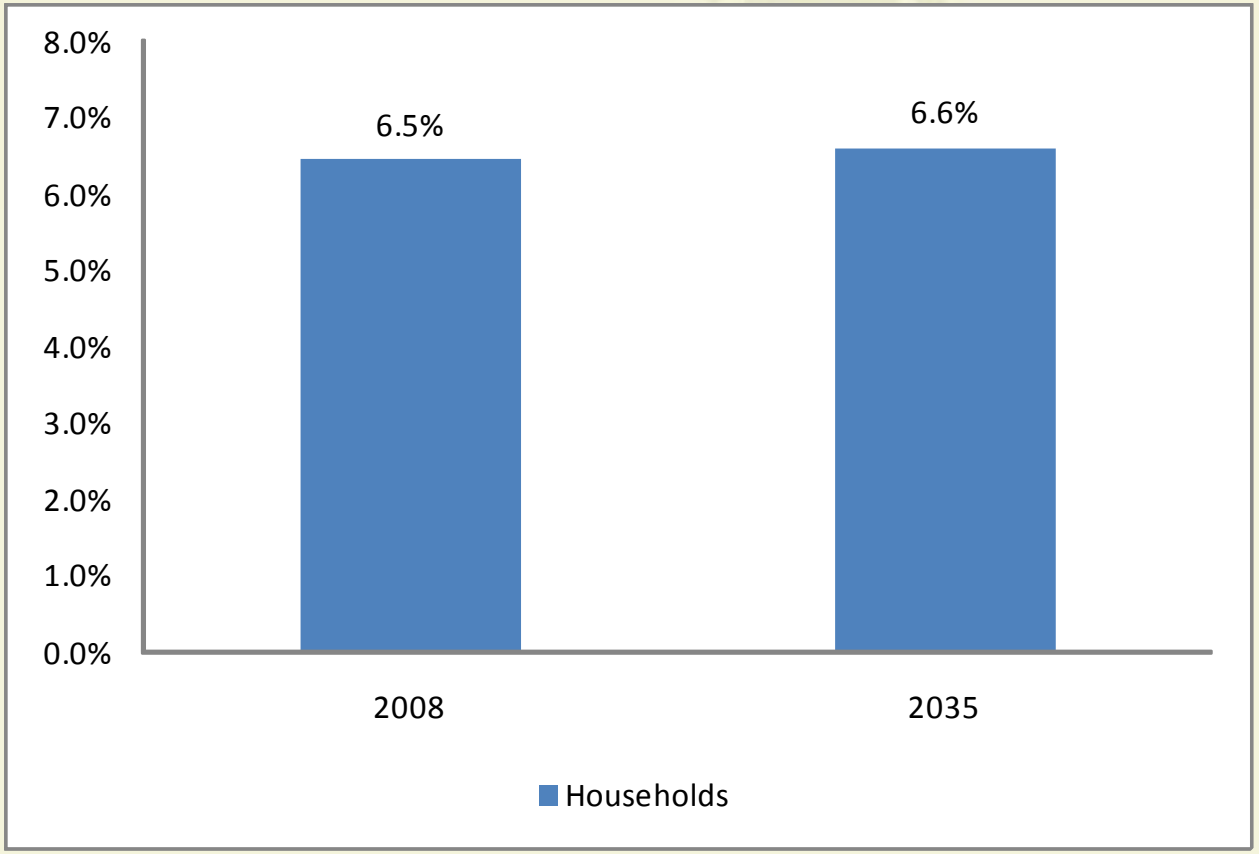
For illustrative purposes only


Rural Roads with 50K Average Daily Trips
[Existing 2008]
ID | Street Name | Miles | ADT | County
1 | RANCHO CALIFORNIA RD | 0.14 | 55,231 | Riverside
– Draft –
For illustrative purposes only
1
Rural Roads with 50K ADT
0 5 10 20 30
Miles
N


Rural Roads with 50K Average Daily Trips
[2035 Plan]
ID | Street Name | Miles | ADT | County
1 | SIERRA HIGHWAY | 0.82 | 65,961 | Los Angeles
2 | MONTEREY AVE | 0.10 | 53,513 | Riverside
3 | RANCHO CALIFORNIA RD | 0.14 | 56,146 | Riverside
4 | RYE CANYON RD | 0.17 | 52,274 | Los Angeles
1
2
3
4
– Draft –
For illustrative purposes only
Rural Roads with 50K ADT
0 5 10 20 30 Miles
N

Households Share

- 6.5 % of SCAG households in 2008 are within buffer zone, and 6.6 % in 2035



Race & Ethnicity

- In 2008, 45% of SCAG Region population are Hispanic. In 500' buffer zone, about 50% are Hispanic. This disproportion is carried to 2035.
- The growth of Hispanic % between 2008 and 2035 is about 8% for both SCAG region and buffer zone.

	SCAG Region			500' Buffer		
	2008	2035	08-35	2008	2035	08-35
Hispanic	45%	53%	8%	50%	58%	8%
NH-White	34%	25%	-9%	28%	21%	-8%
NH-Black	7%	6%	-1%	7%	6%	-1%
NH-Asian	11%	12%	1%	12%	13%	1%
NH-Other	3%	3%	0%	3%	3%	0%

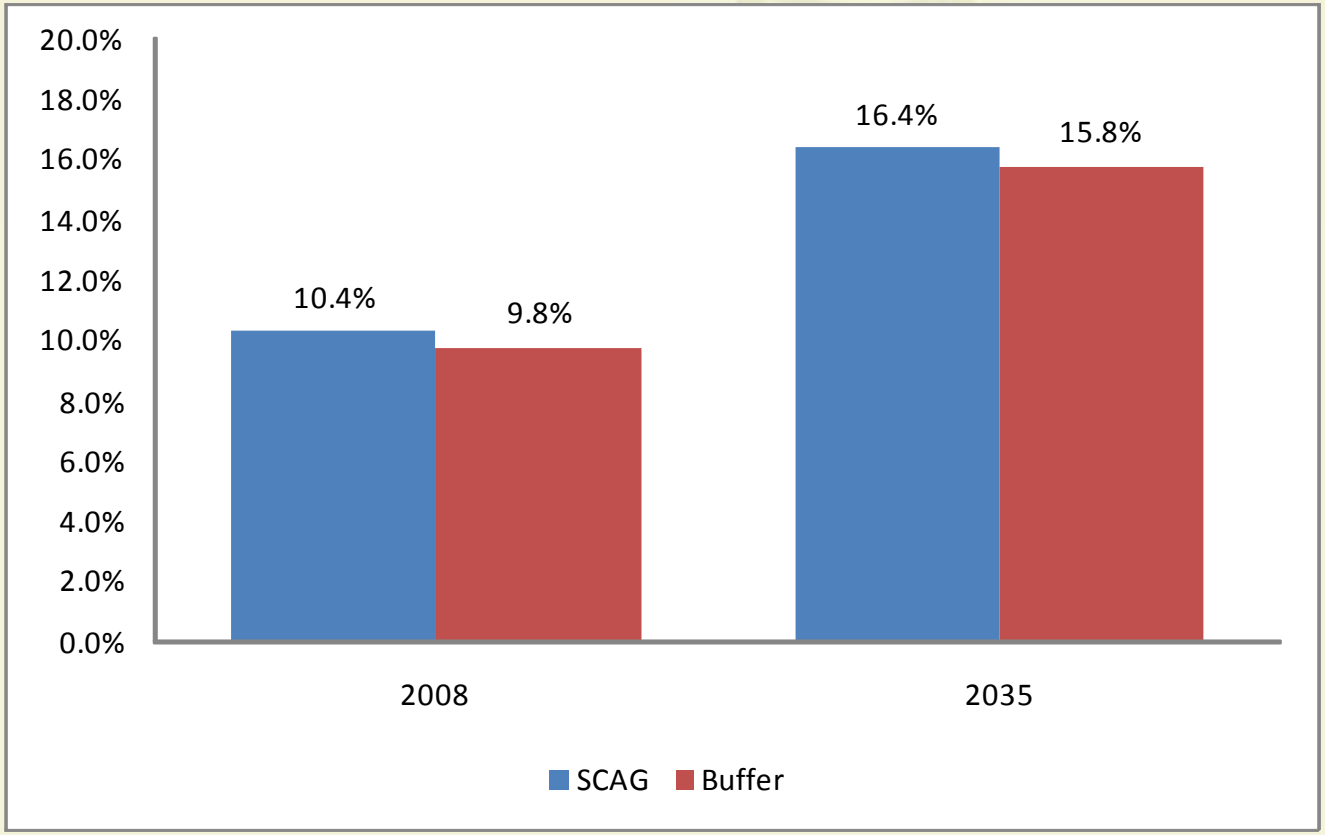
Low-Income Households

- Of 106,504 households growth in buffer zone, 12.5% are lowest-income households, which is 1.5% high than SCAG region.

Income Quintile	SCAG 08-35	Buffer 08-35	DIFF 08-35
Househholds	1,479,078	106,504	
%			
First (lowest 20%)	11%	12%	1%
Second (20%-40%)	18%	18%	1%
Third	20%	20%	0%
Fourth	23%	23%	0%
Fifth	28%	26%	-2%

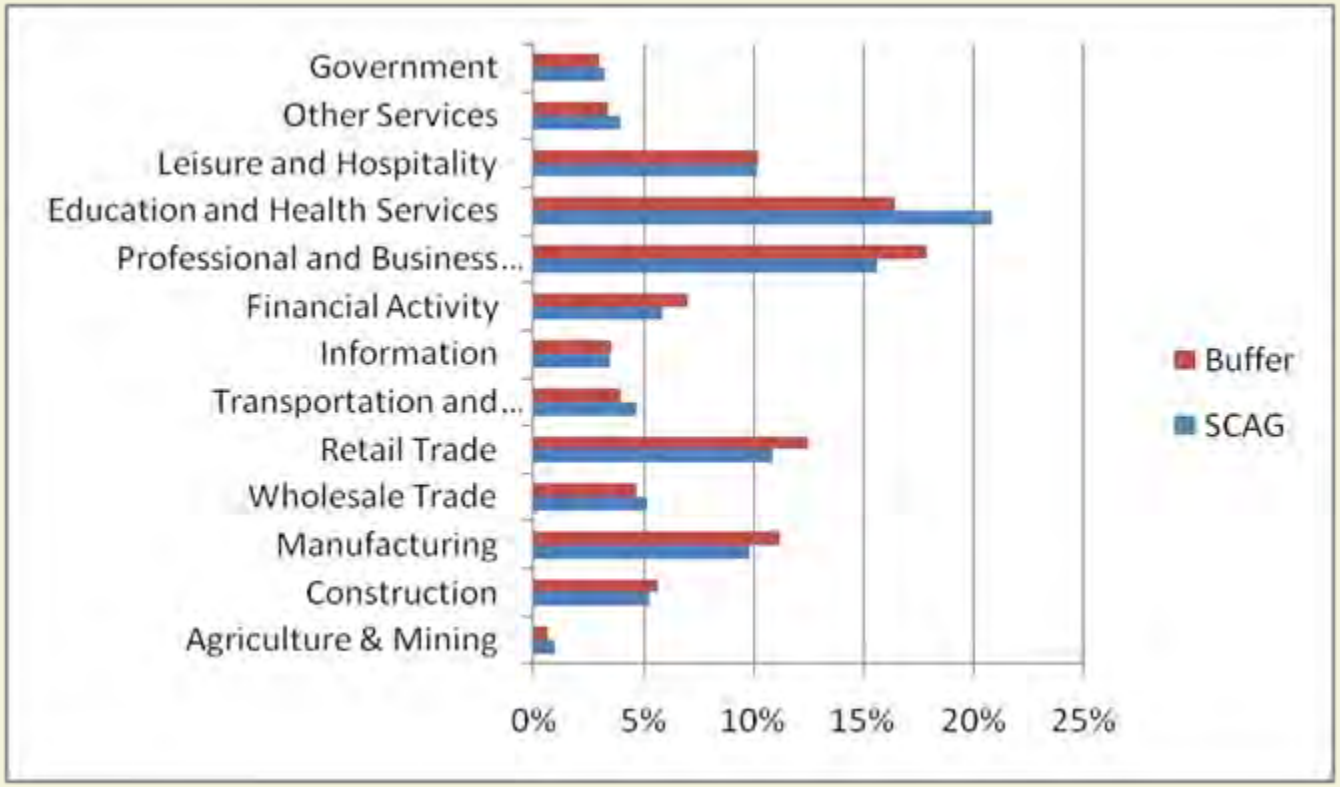
Elderly (aged 65 and older)

- Share of the elderly population is about the same between SCAG region and 500' buffer



2008 Job Share

- About 13.5% of SCAG region jobs are within the buffer zone
- Below shows 2008 job share by sectors for SCAG region and buffer zone



Job Growth

- Of 270,000 job growth in buffer zone, 24% are business service jobs, which is 2% high than that of SCAG region.
- There is no significant difference to other sectors

	SCAG	Buffer	DIFF
	08-35	08-35	08-35
Jobs Growth	1,995,221	269,658	
%			
Wholesale	4%	4%	0%
Retail	9%	9%	0%
Finance	4%	4%	0%
Business Serv.	22%	24%	2%
Education/Health	28%	27%	0%

Air Quality Impact - PM10

- PM10 emission in buffer zone is 11% - 12% of total emission of SCAG regional
- PM10 emission in buffer zone is slightly higher (about 2%) for Plan than for the Baseline

	SCAG	Buffer	Buffer/SCAG
2035 Baseline	23,819	2,623	11%
2035 Plan	22,890	2,674	12%
Plan - Baseline	-930	51	
EMISSION IN KILOGRAMS			

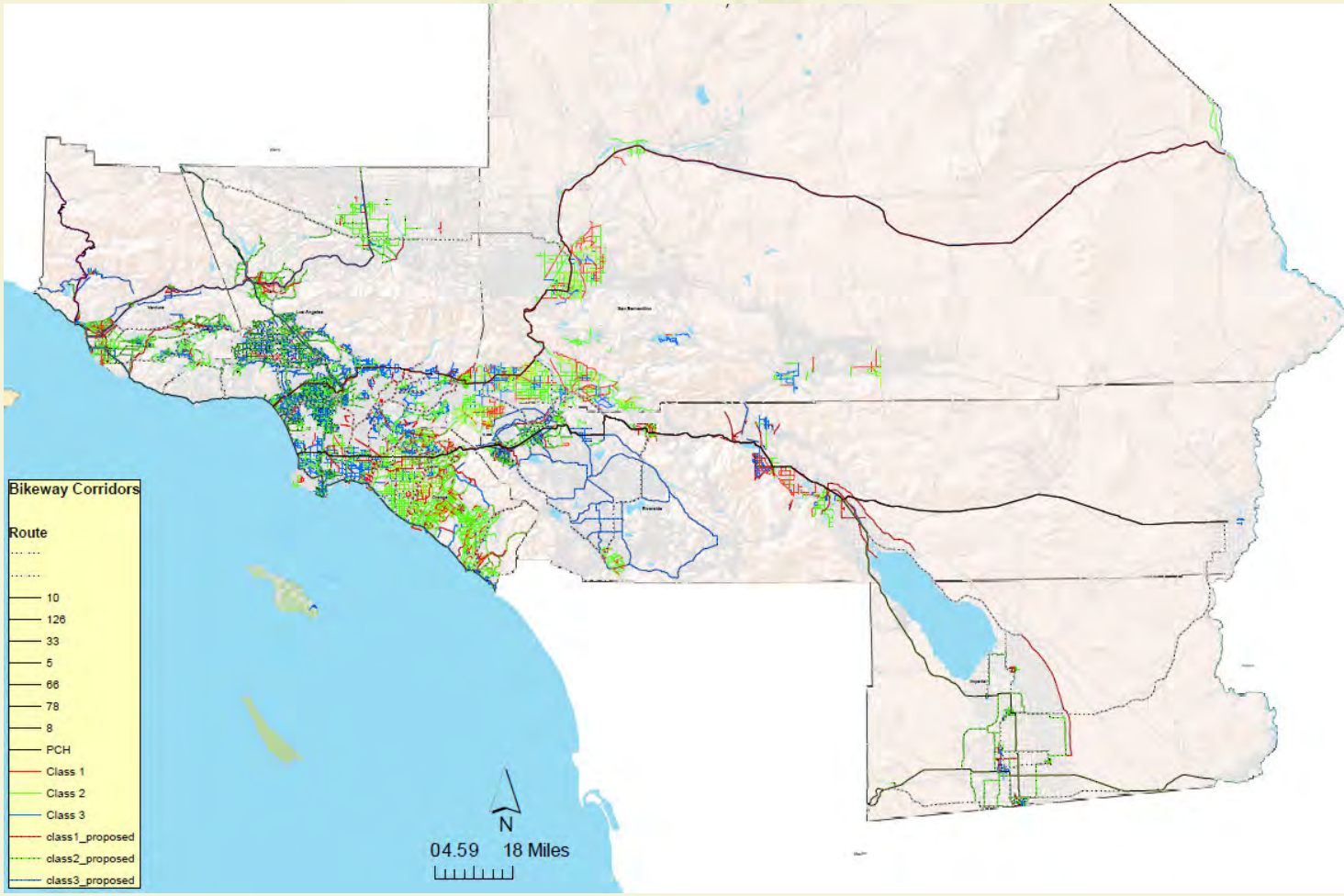
Non Motorized Transportation Network

62%

of our population has access to an existing or proposed bikeway

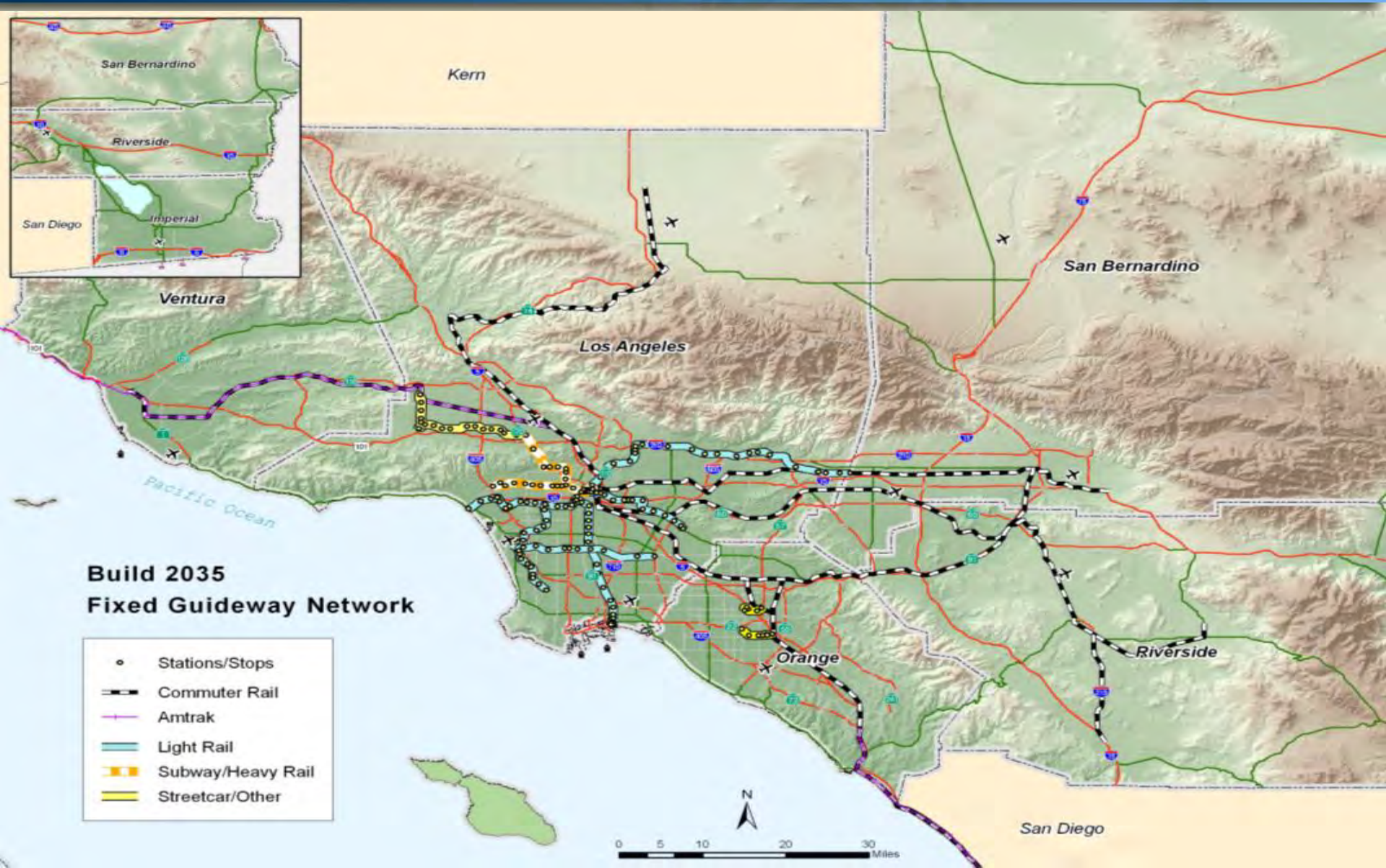
(access defined as 0.27 miles from a bikeway)

Need to expand SCAG region bike network to improve access & Utilization



Existing and planned Rail Investment

Build 2035 Fixed-Guideway Transit Network



For more information please contact

THANK YOU

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