MOVING CALIFORNIA FORWARD

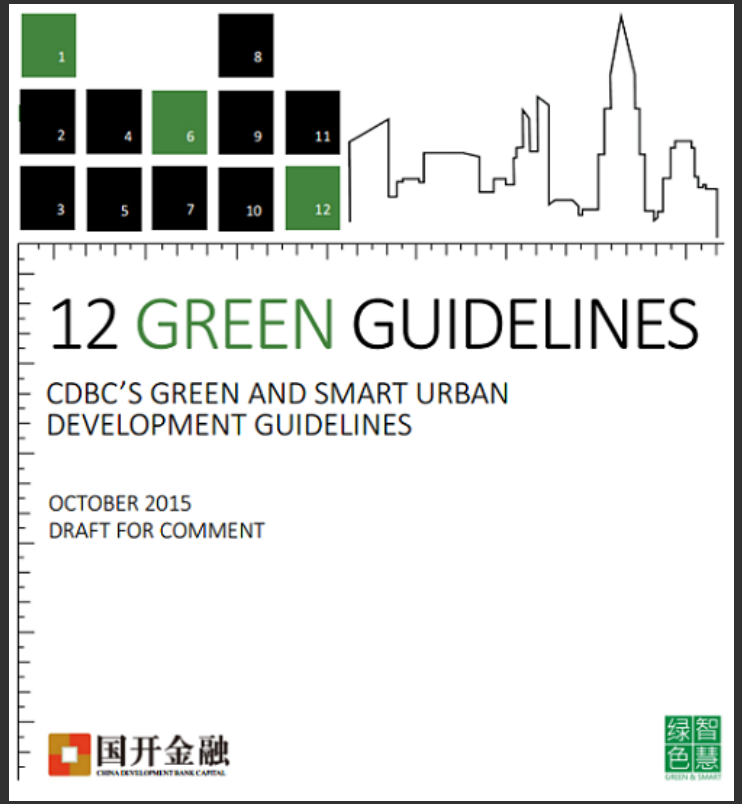
CHRIS BUSCH AND ERIKA LEW

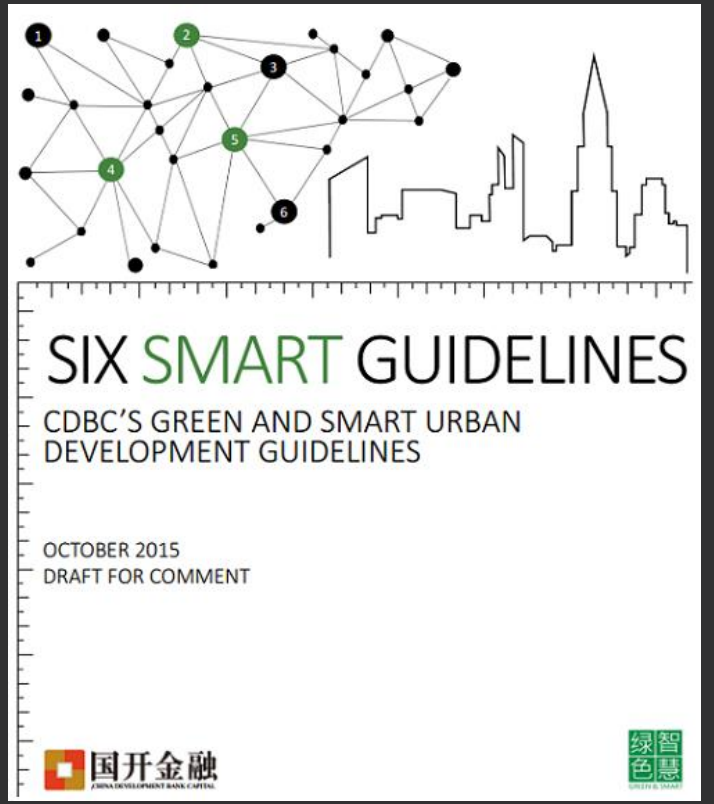
SPUR PRESENTATION
18 FEBRUARY 2016

ENERGY INNOVATION
POLICY & TECHNOLOGY LLC

CALTHORPE
ANALYTICS

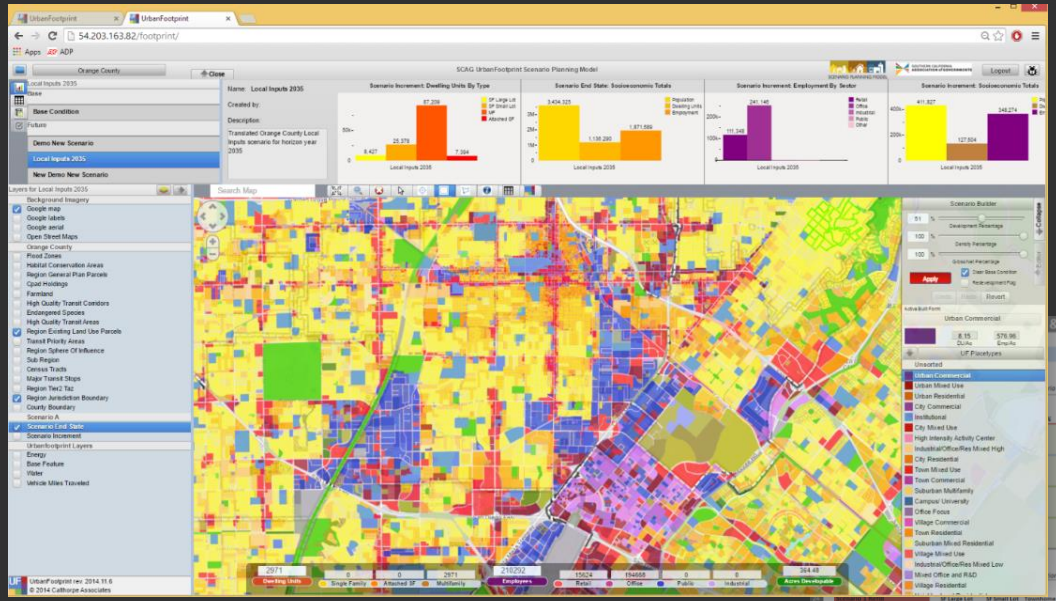
ABOUT ENERGY INNOVATION



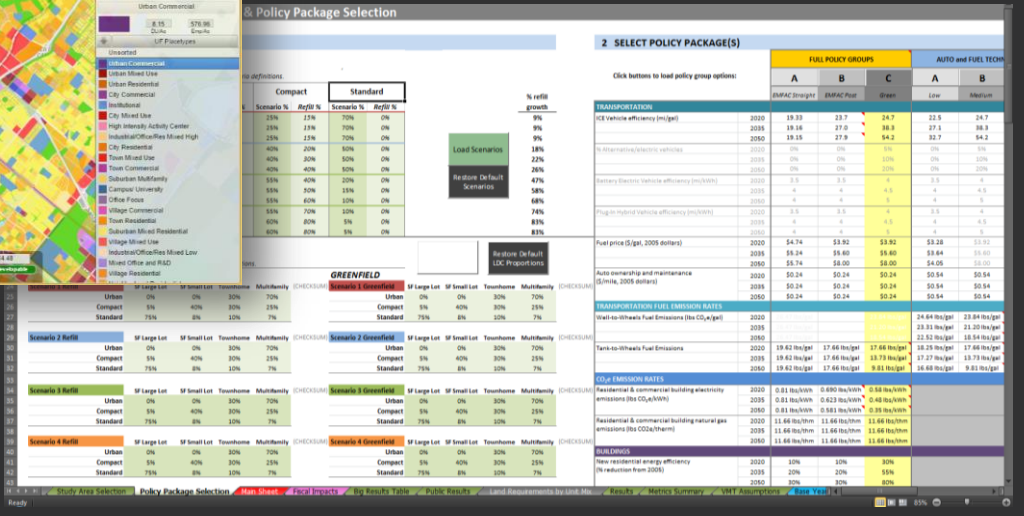


ABOUT CALTHORPE ANALYTICS

NEXT GENERATION SCENARIO MODELS



RapidFire



UrbanFootprint

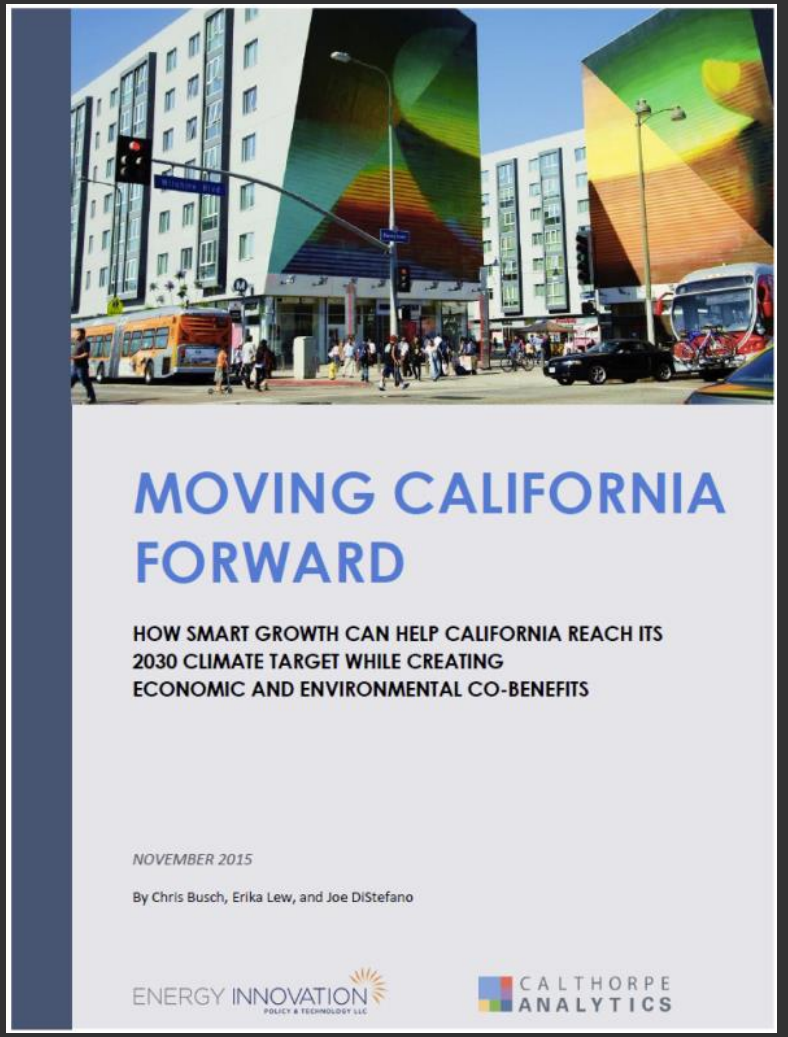
ABOUT CALTHORPE ANALYTICS

VISION CALIFORNIA

OUTLINE

1. Overview of study and findings
2. Policy motivation
3. Methodology
4. Results. Why is it important for California?
5. Policy revisited: recommendations

OVERVIEW:
OUR RECENT STUDY



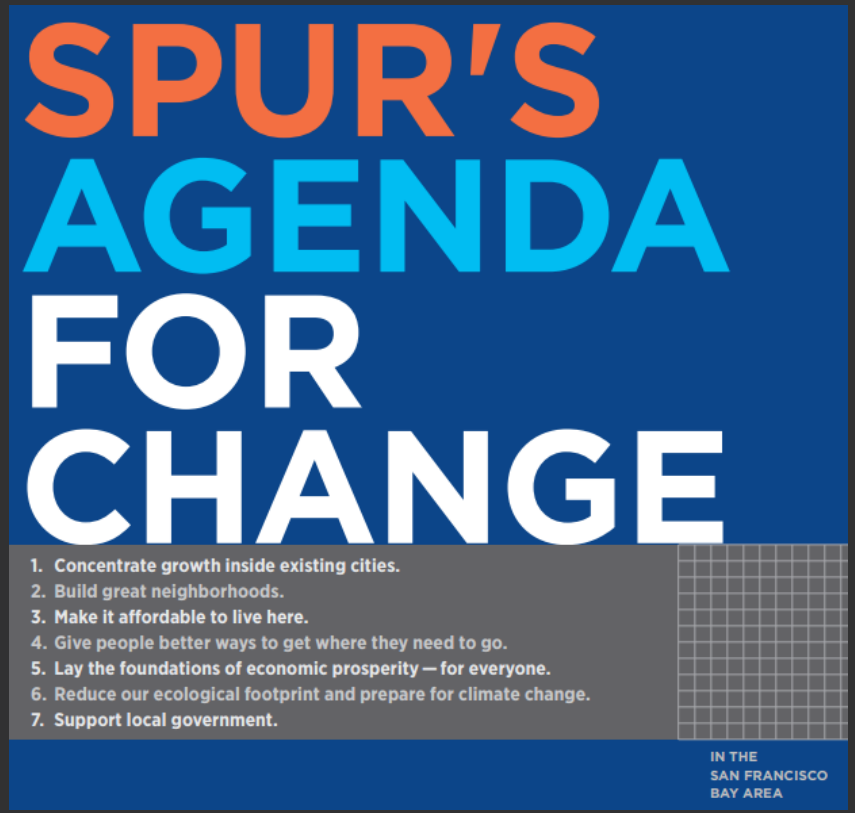
OVERVIEW: DEFINING SMART GROWTH

Sprawl

Smart growth

OVERVIEW

OVERLAP WITH SPUR'S AGENDA FOR CHANGE



OVERVIEW: HOW

Location **inefficiency**
Forces people to drive almost everywhere

Location **efficiency**
Compact and mixed-use development means more walkable and bike accessible

OVERVIEW: HOW

Location **inefficiency**
Forces people to drive almost everywhere

Location **efficiency**
More cost effective to serve with transit

POLICY MOTIVATION

AB 32 signing in 2006

Global Warming Solutions Act

SB 375 signing in 2008

Sustainable Communities Act

POLICY MOTIVATION
AB 32 AND 2030 EXECUTIVE ORDER

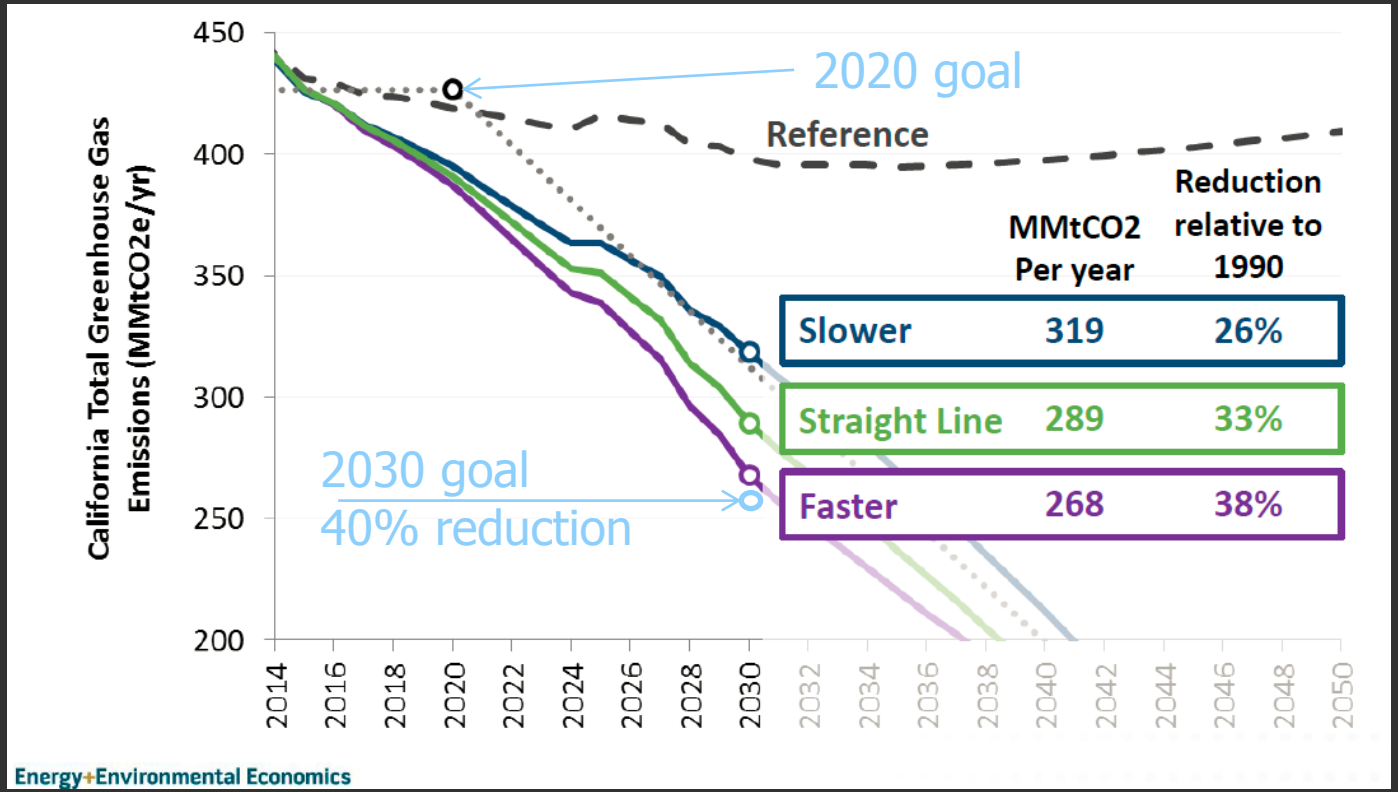
1. AB 32

   Reduce statewide emissions to 1990 levels by 2020

2. Executive Order B-30-15

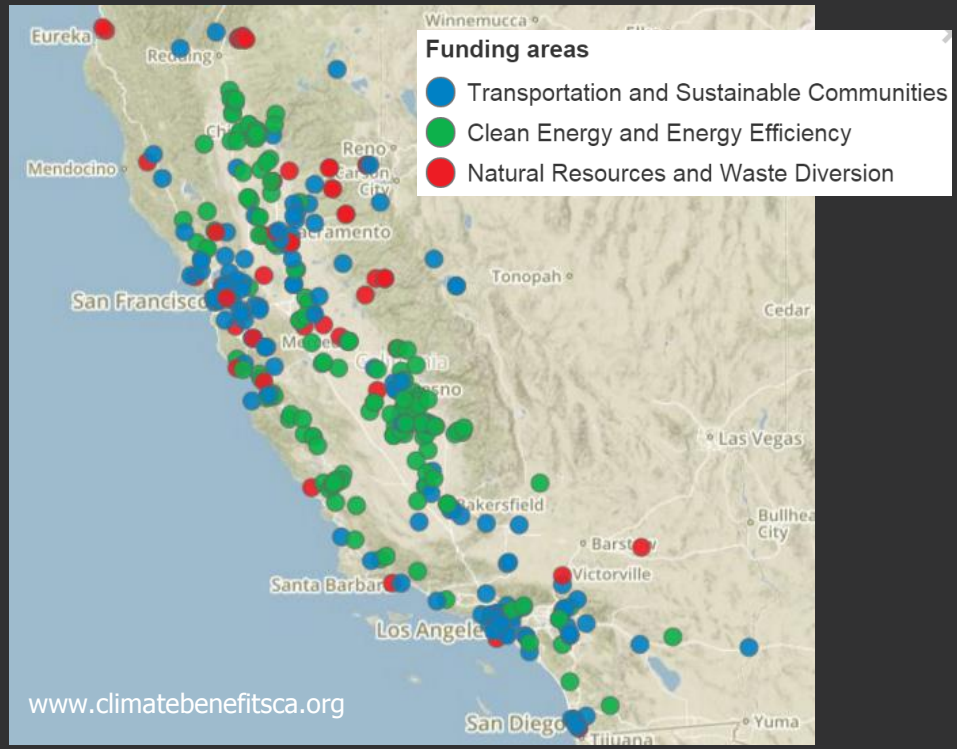
   Reduce emissions 40 Percent Below 1990 Levels by 2030

POLICY MOTIVATION
2030 SCOPING PLAN UNDER DEVELOPMENT



POLICY MOTIVATION:
OPPORTUNITY IN INVESTMENT OF CARBON REVENUE

- Largest share (35%) for transportation and sustainable communities
- $1.24 billion invested so far →
- $2.8 billion appropriated, $800 million for disadvantaged communities under SB 535



POLICY MOTIVATION

SB 375 SUSTAINABLE COMMUNITIES ACT

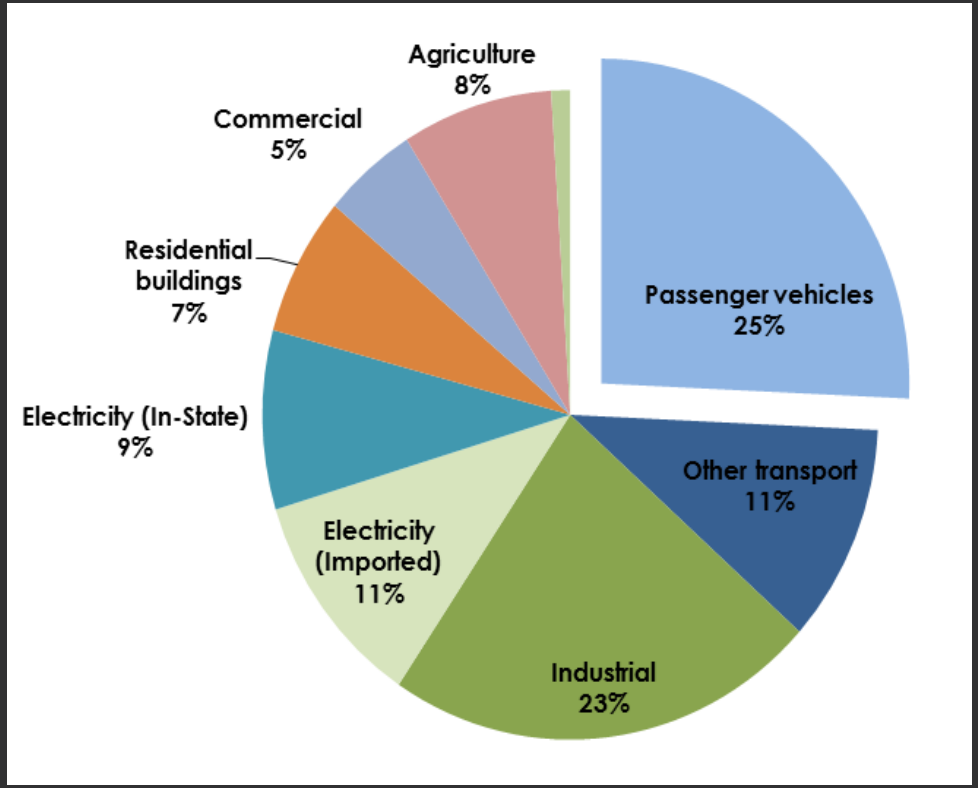
Metropolitan Planning Organizations submit Sustainable Community Plans

Targets	VMT per capita	% Below 2005
2020	7,630 miles	7%
2035	7,130 miles	13%
Historical data		
2005	8,200 miles	Not applicable
2014	7,200 miles	12%

Air Resources Board considering revision of targets this year.

POLICY MOTIVATION

PASSENGER VEHICLES LARGEST SOURCE OF EMISSIONS IN 2013



California Air Resources Board

POLICY MOTIVATION

CALIFORNIA GROWTH TO 2030
AN OPPORTUNITY FOR URBAN REDESIGN

+5.7 million people

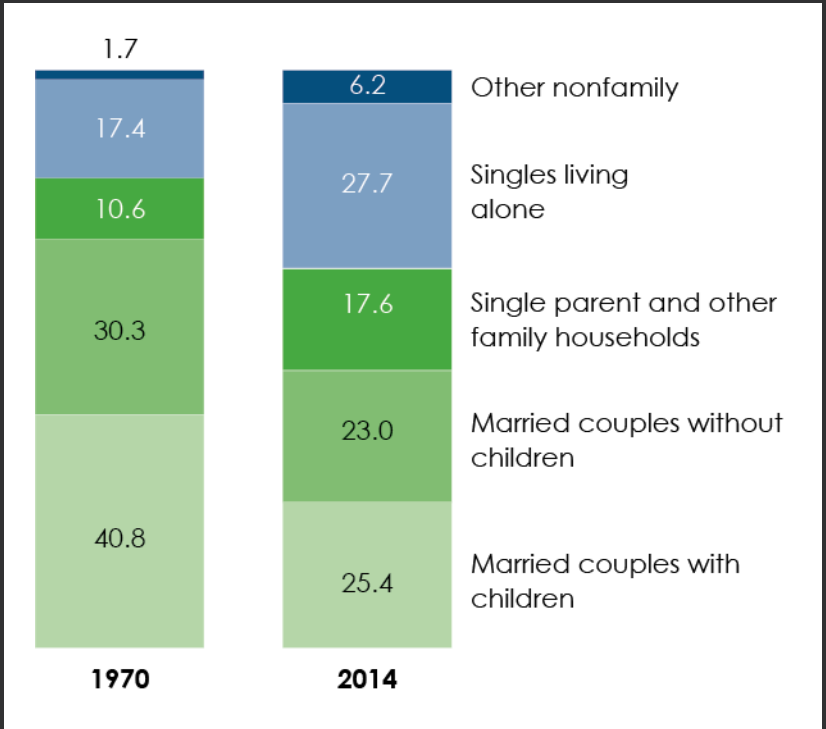
+1.6 million households

+3.8 million jobs

POLICY MOTIVATION

MEETING CHANGING HOUSING DEMAND

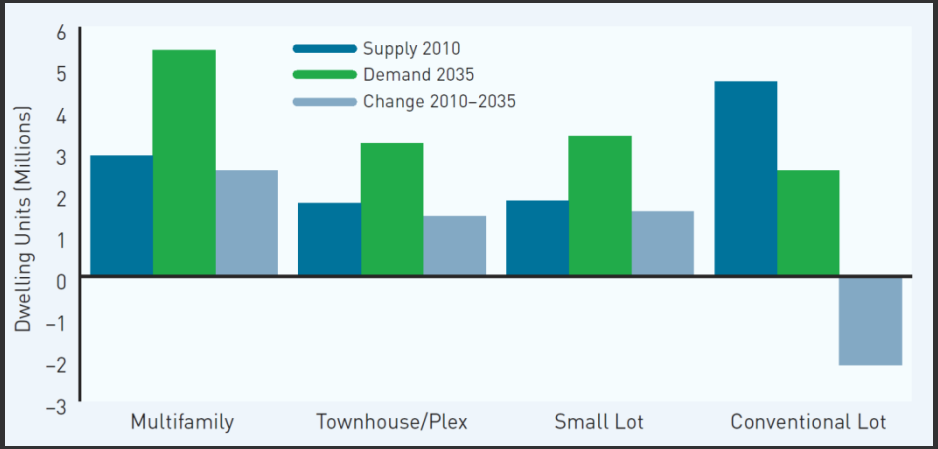
Household demographics

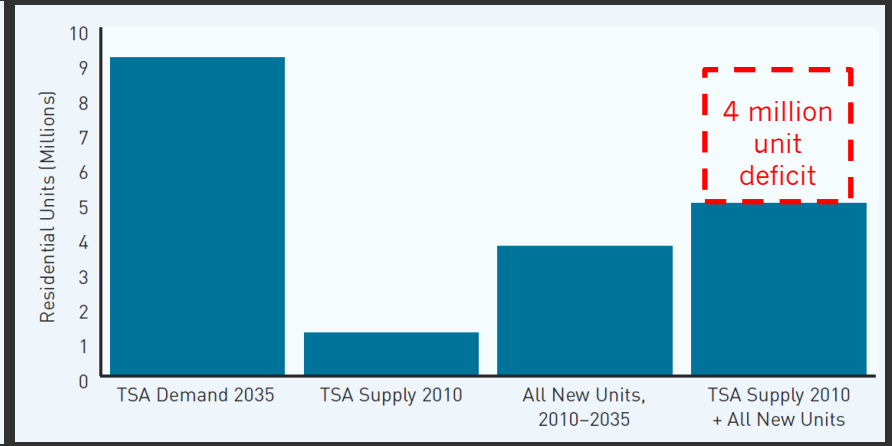


POLICY MOTIVATION

MEETING CHANGING HOUSING DEMAND

Market preferences





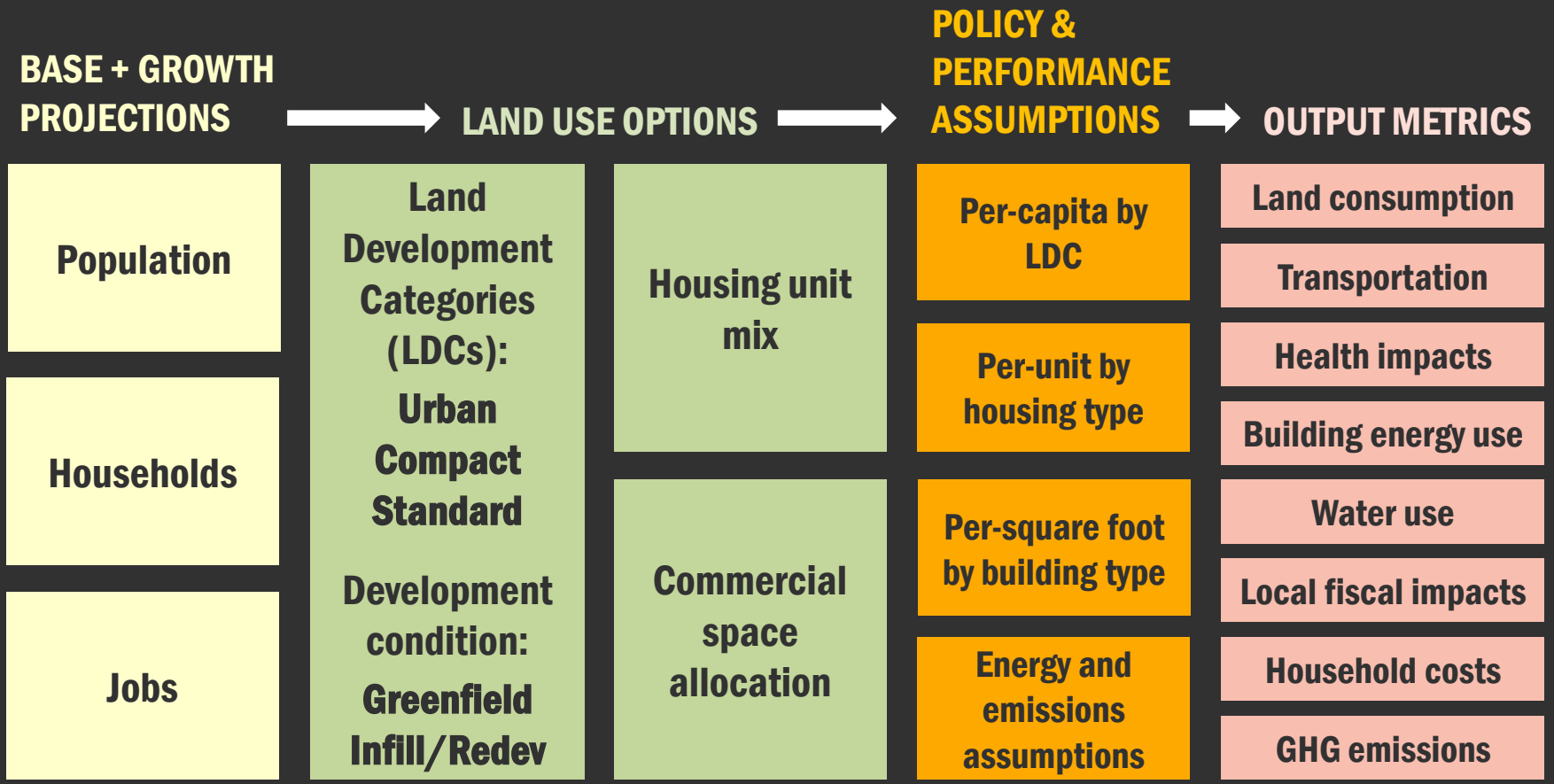
Arthur Nelson. 2011. The New California Dream. Urban Land Institute.

METHODOLOGY

THE RAPIDFIRE MODEL

- Spreadsheet-based model developed to quickly evaluate alternatives across a range of metrics
- Scenarios defined by allocation of new population, jobs, and housing types to broad development patterns
- Applies energy technology assumptions from recent E3 study (California PATHWAYS)

RAPIDFIRE MODEL FLOW



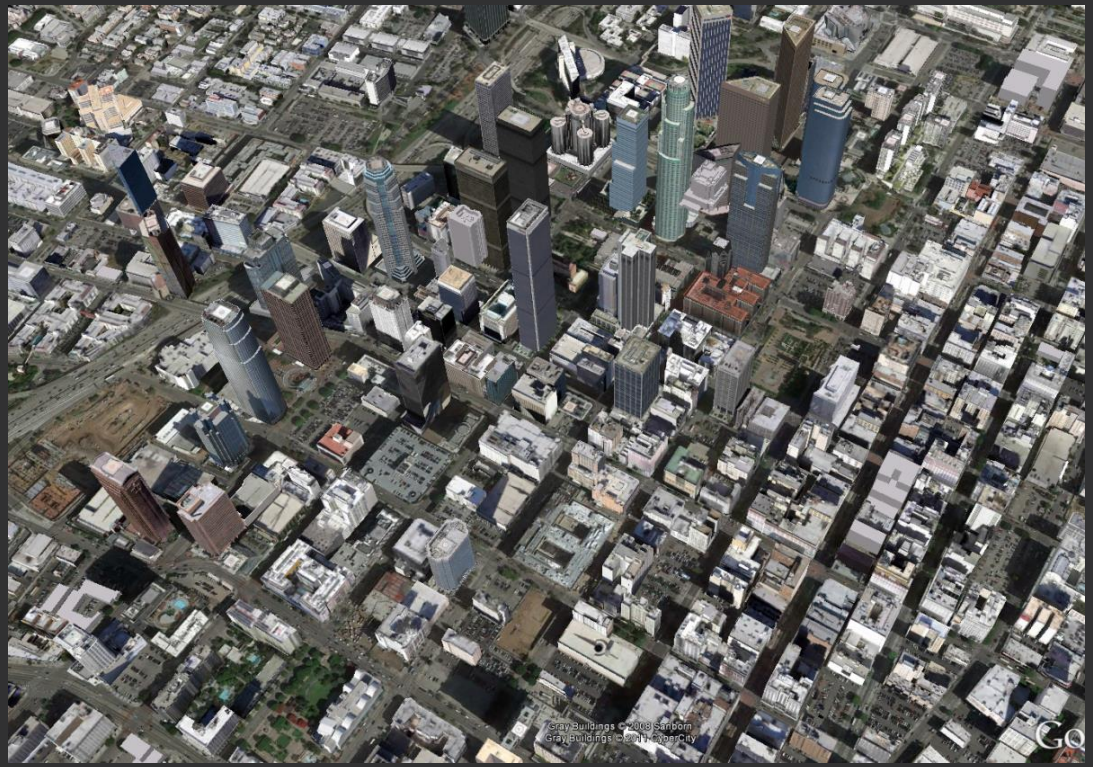
RAPIDFIRE
LAND DEVELOPMENT CATEGORIES (LDCs)

Urban
Moderate- to high-intensity urban centers

Compact
Walkable and transit-accessible, with mixed uses and moderate densities

Standard
Auto-oriented suburban development

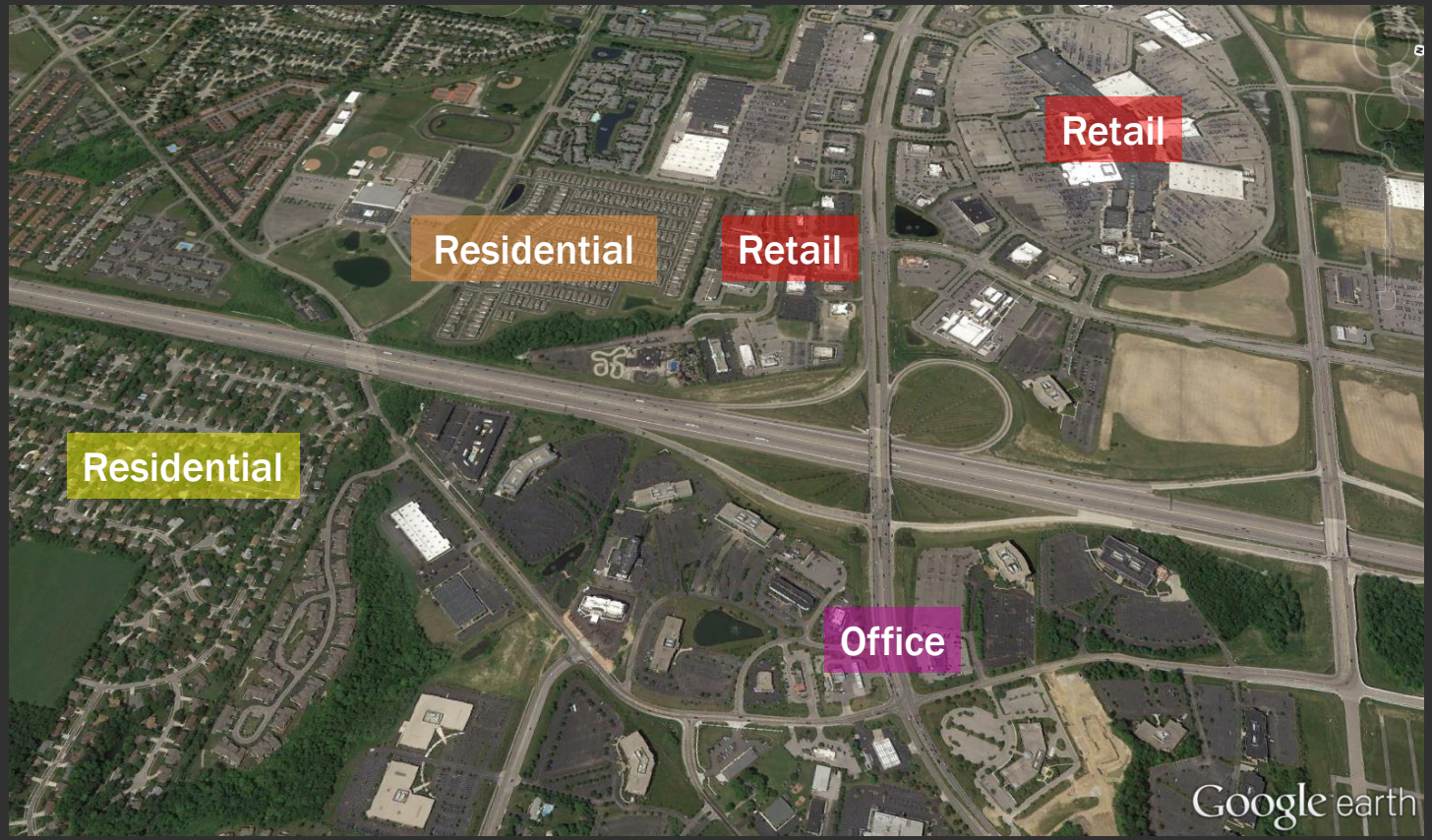
URBAN LDC

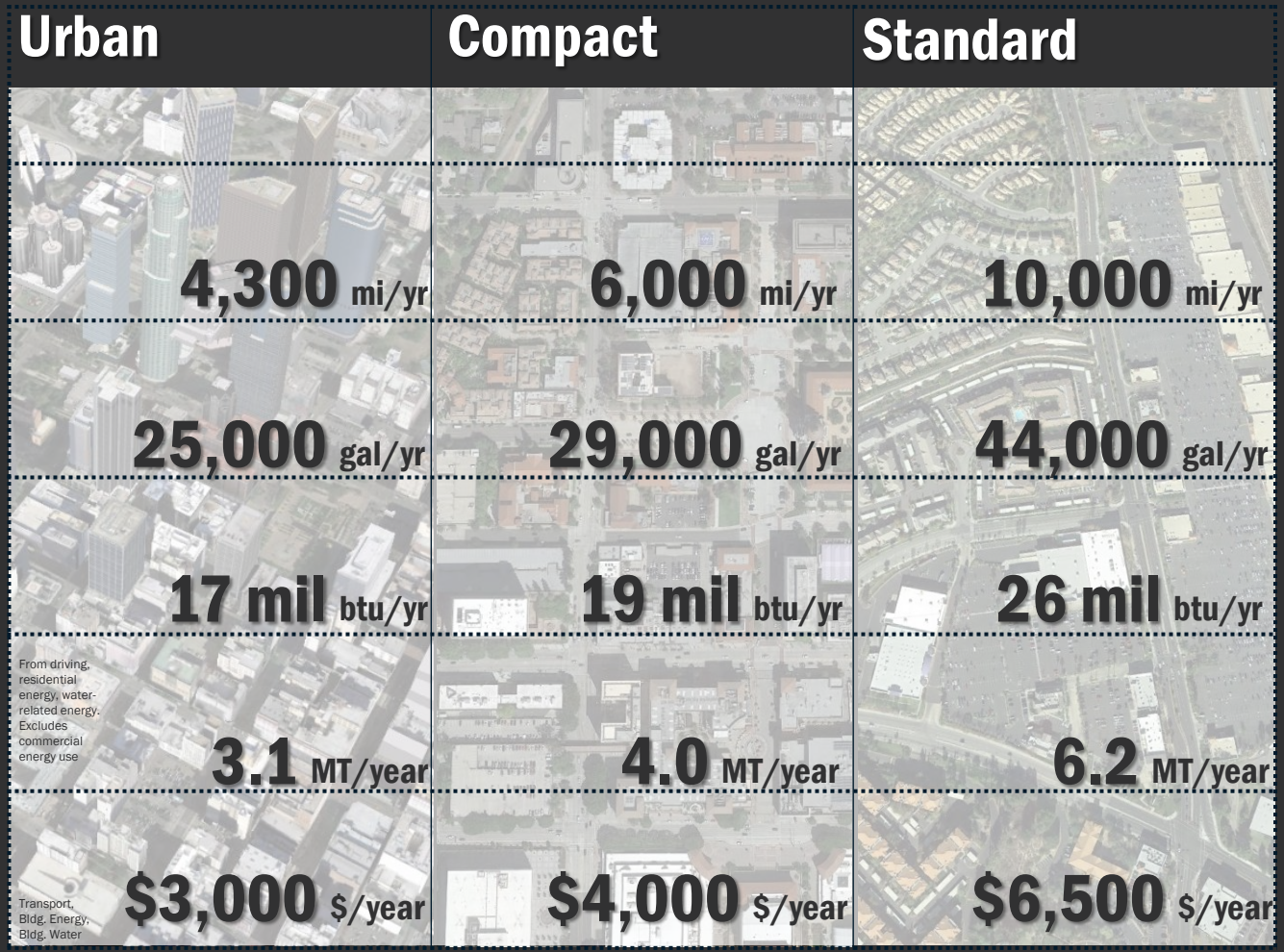


COMPACT LDC

STANDARD LDC

STANDARD LDC





Land Development Category Comparison
(Typical per capita, 2012)

Vehicle Miles Traveled (VMT)

Residential Water Use

Residential Energy Use

Carbon Emissions

Household Costs

FOUR STATEWIDE SCENARIOS

Past Trends

A continuation of the expansive development patterns of decades past

Current Plans

A possible trajectory given current planning and policy in line with SB 375

More Compact

A future with stronger smart growth policy that prioritizes focused development in coordination with transit investments, and meets demand for housing in walkable, accessible communities

Infill Focus

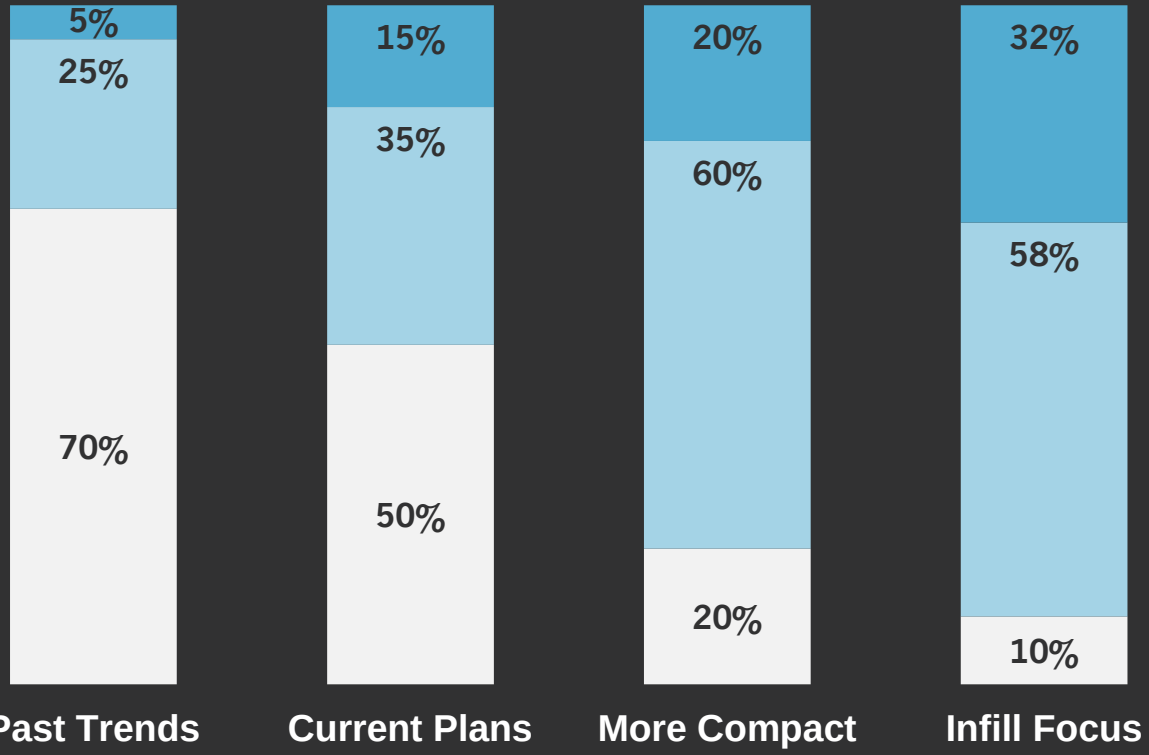
A smart growth future with a greater focus on infill within existing urban boundaries

LAND USE MIX – NEW GROWTH

URBAN
Higher-density, downtown and infill

COMPACT
Mid-density, walkable, and/or transit-oriented

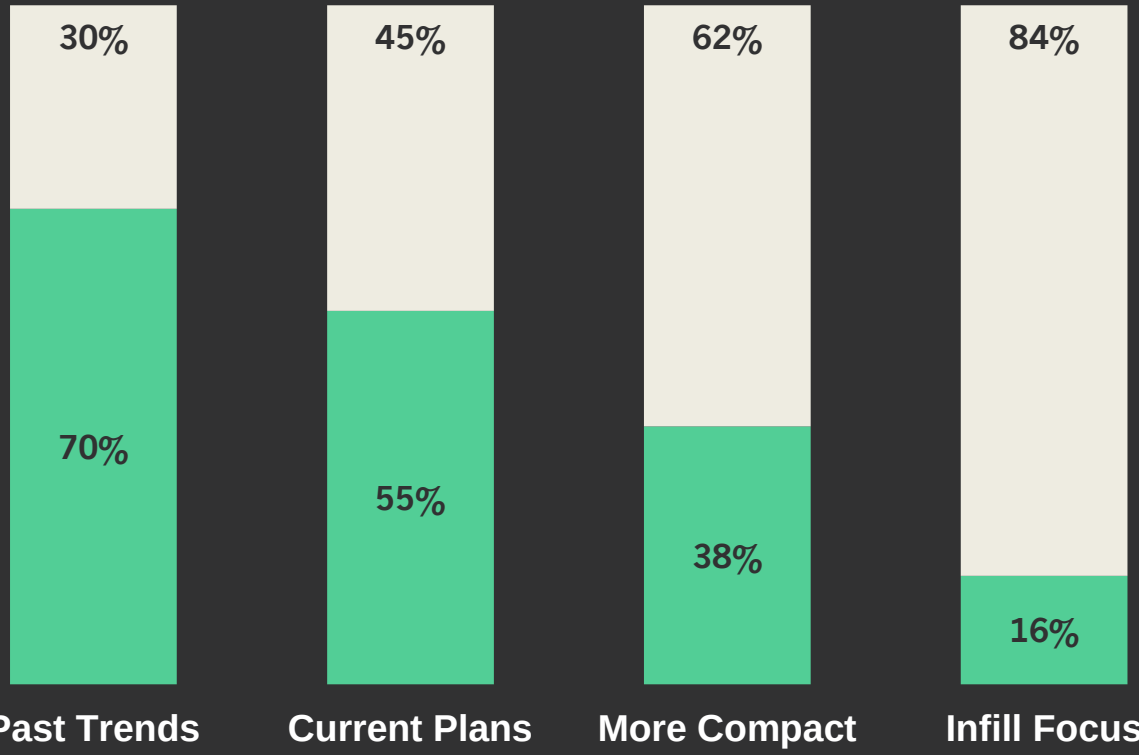
STANDARD
Lower density auto-oriented suburban



DEVELOPMENT LOCATION – NEW GROWTH

REFILL
Infill and redevelopment in existing urbanized areas

GREENFIELD
Growth on previously undeveloped land



STANDARD

Public investment catalyzes development...

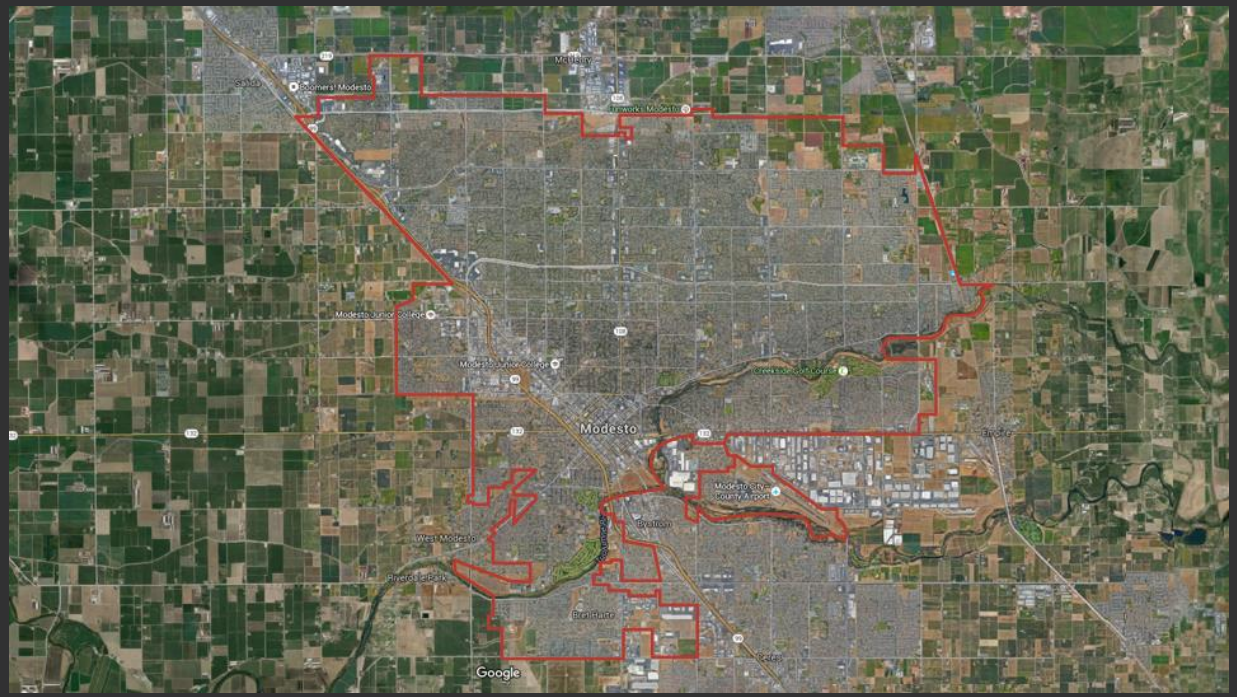
COMPACT

STANDARD

COMPACT

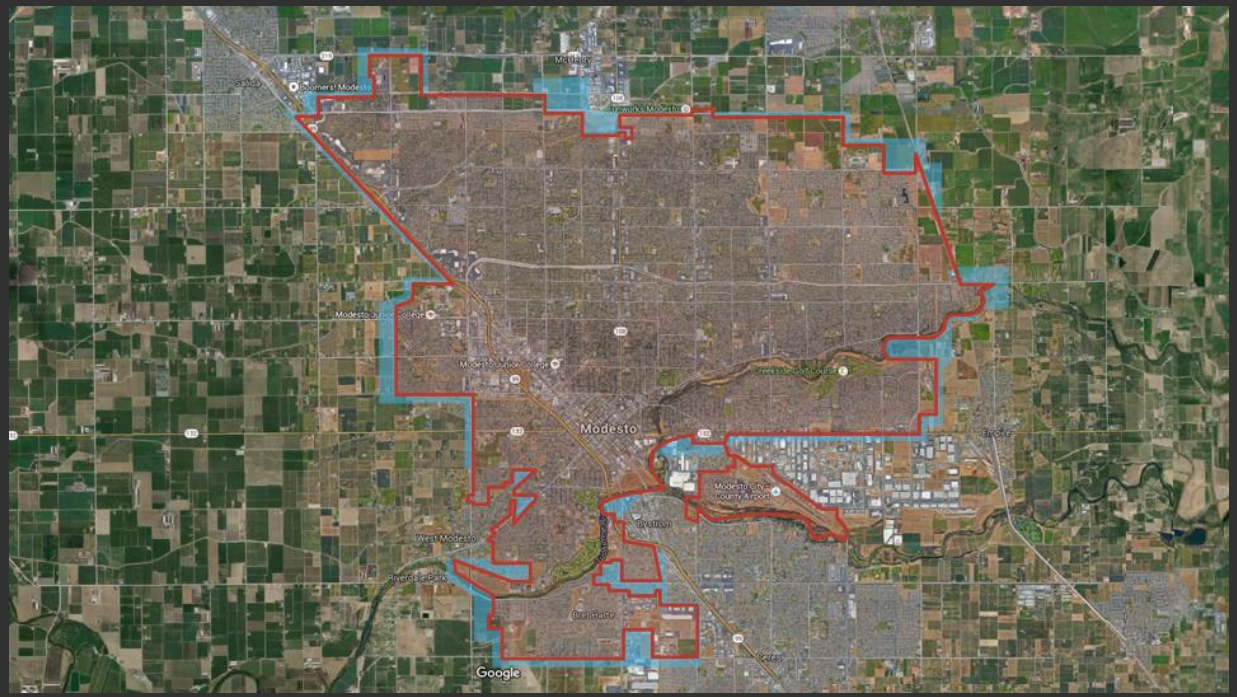
Visual example #1: Modesto

Current boundary



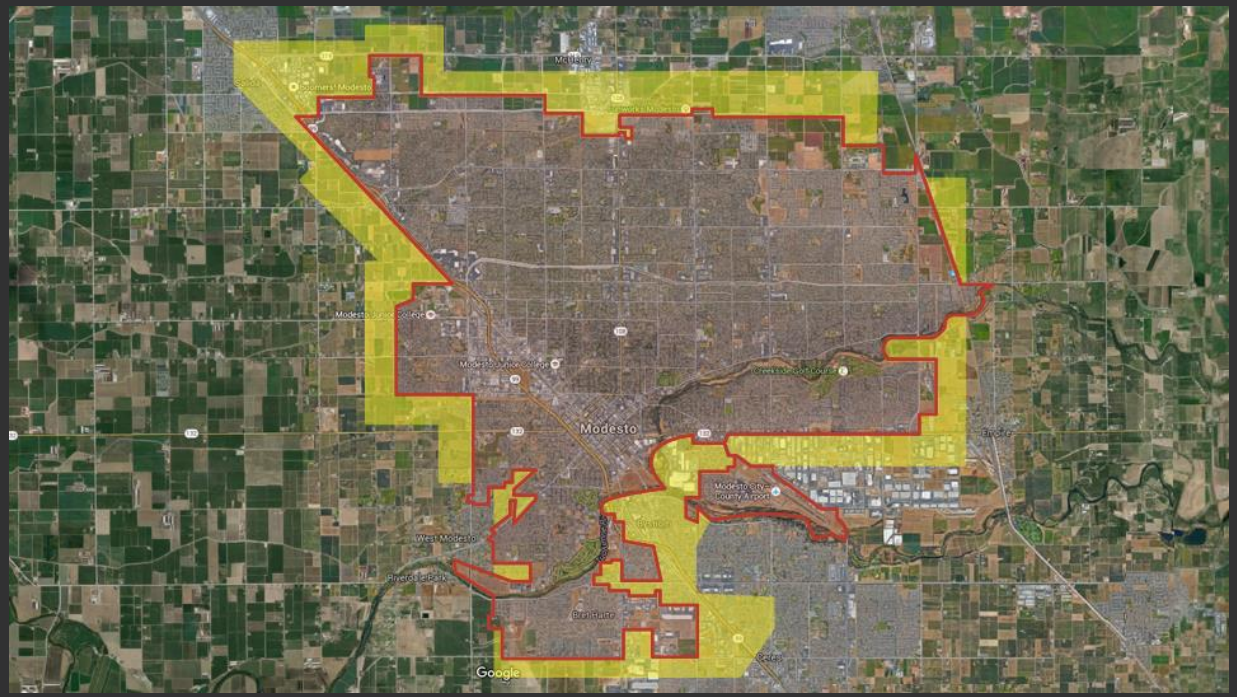
Visual example #1: Modesto

2030 stylized result illustrated under Infill Focus scenario



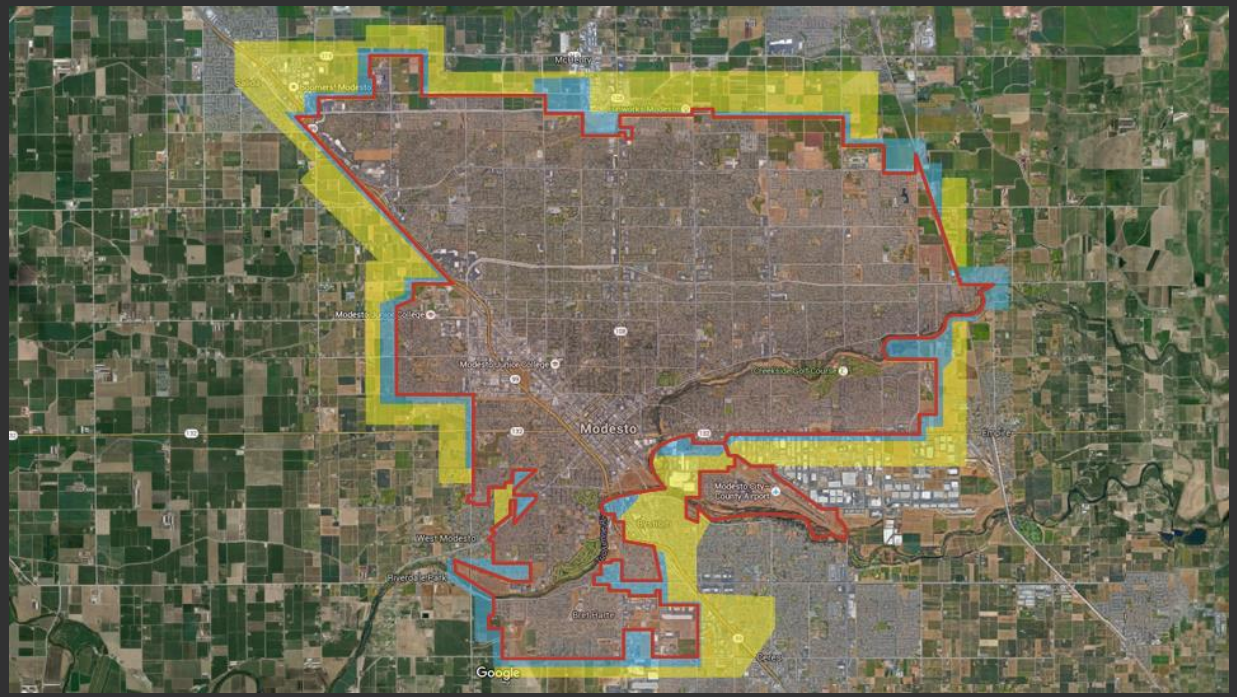
Visual example #1: Modesto

2030 stylized result illustrated under Past Trends scenario

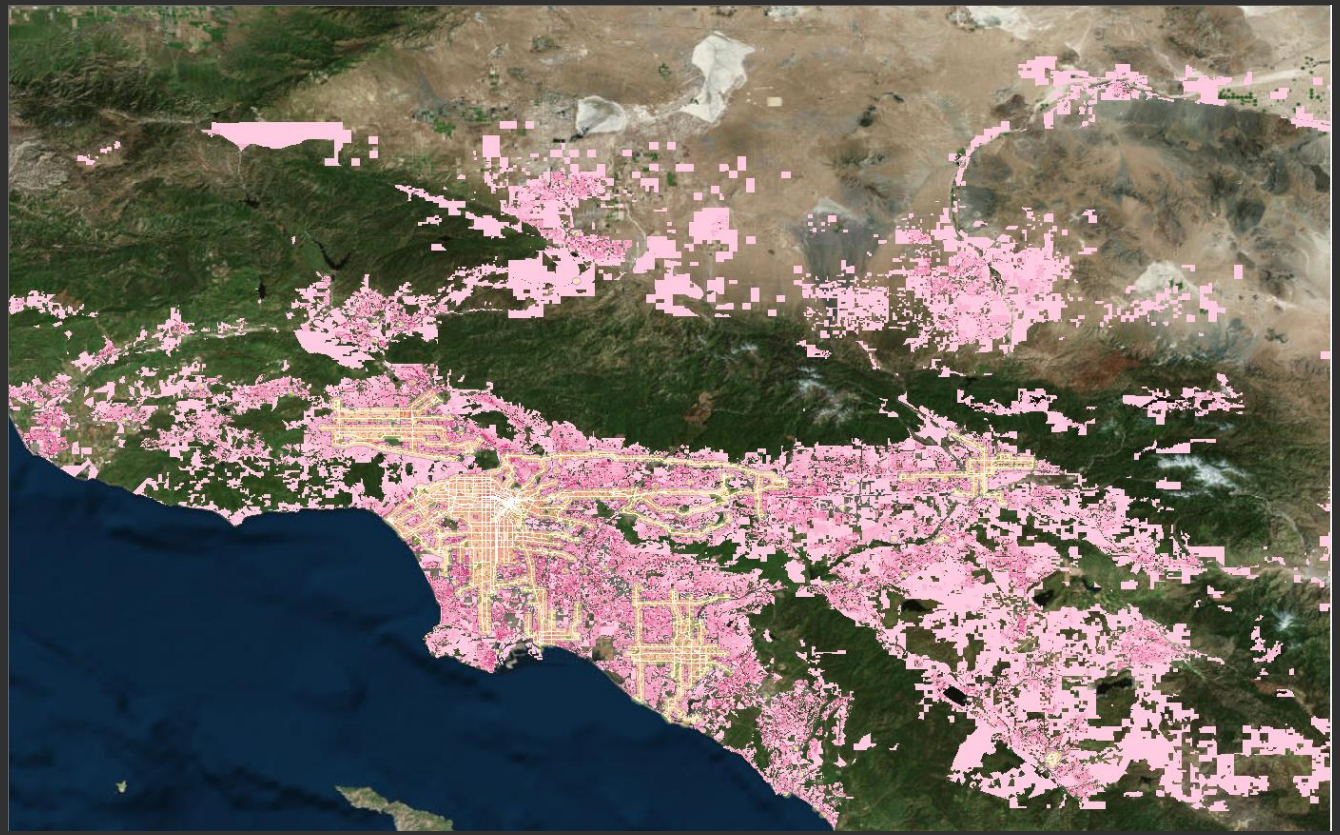


Visual example #1: Modesto

Difference in 2030 between Infill Focus and Past Trends scenarios

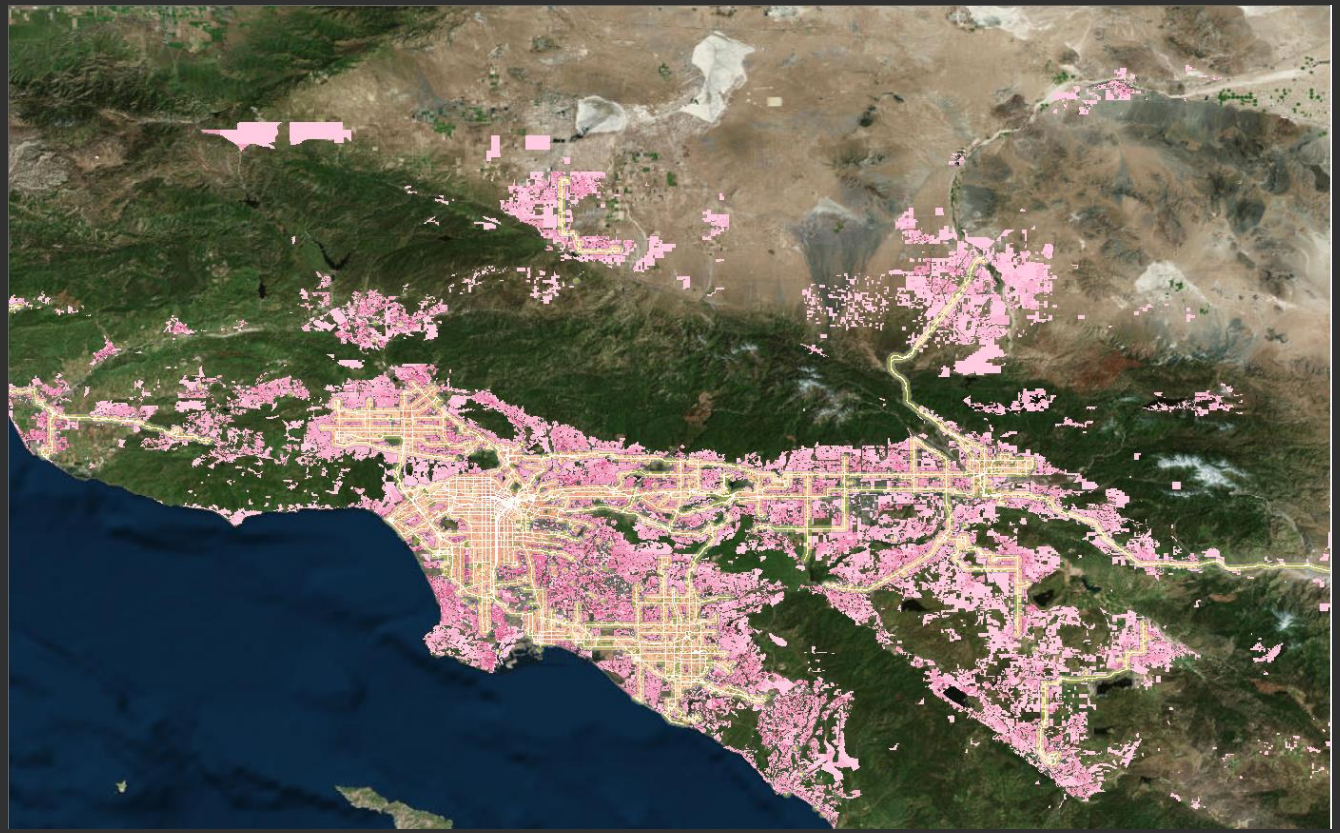


Visual example #2: Past Trends



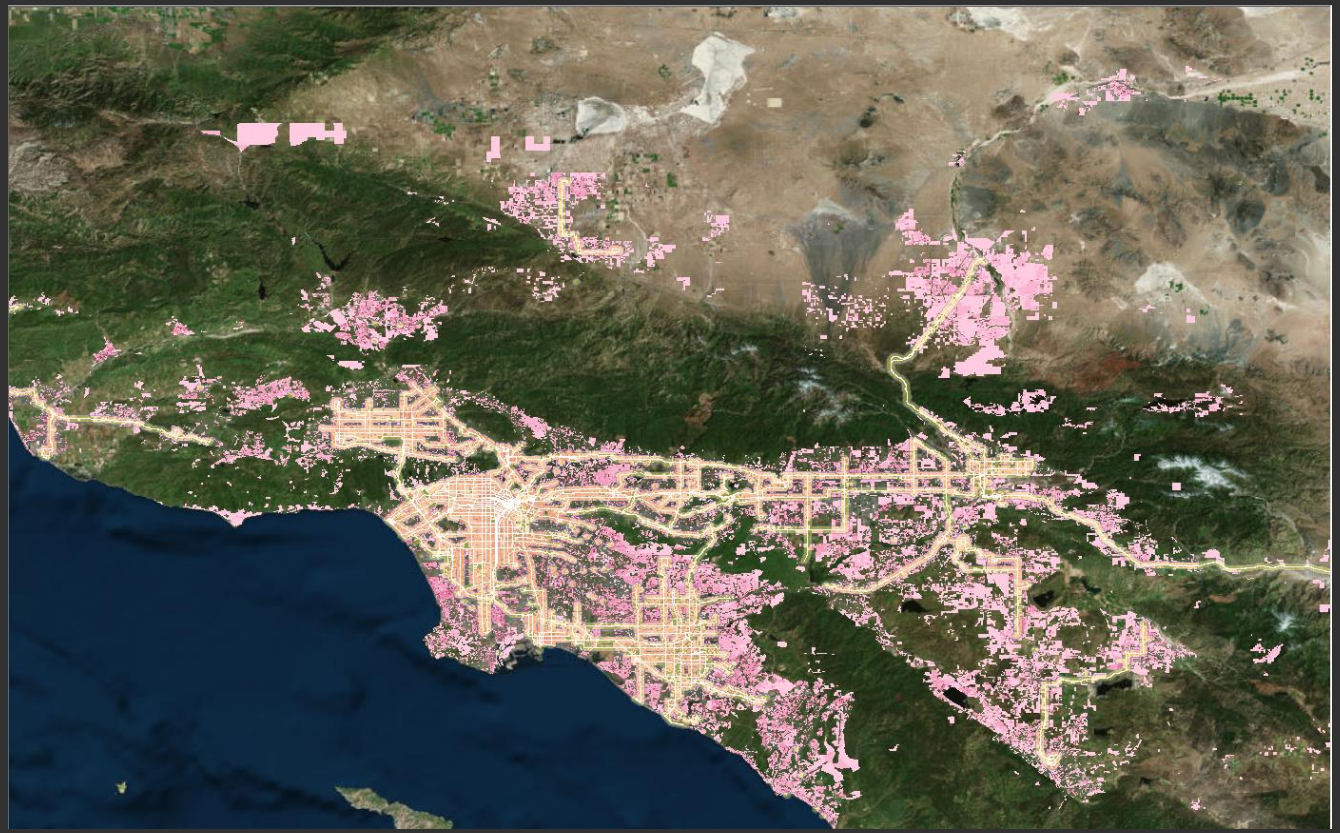
Illustrative only

Visual example #2: Current Plans



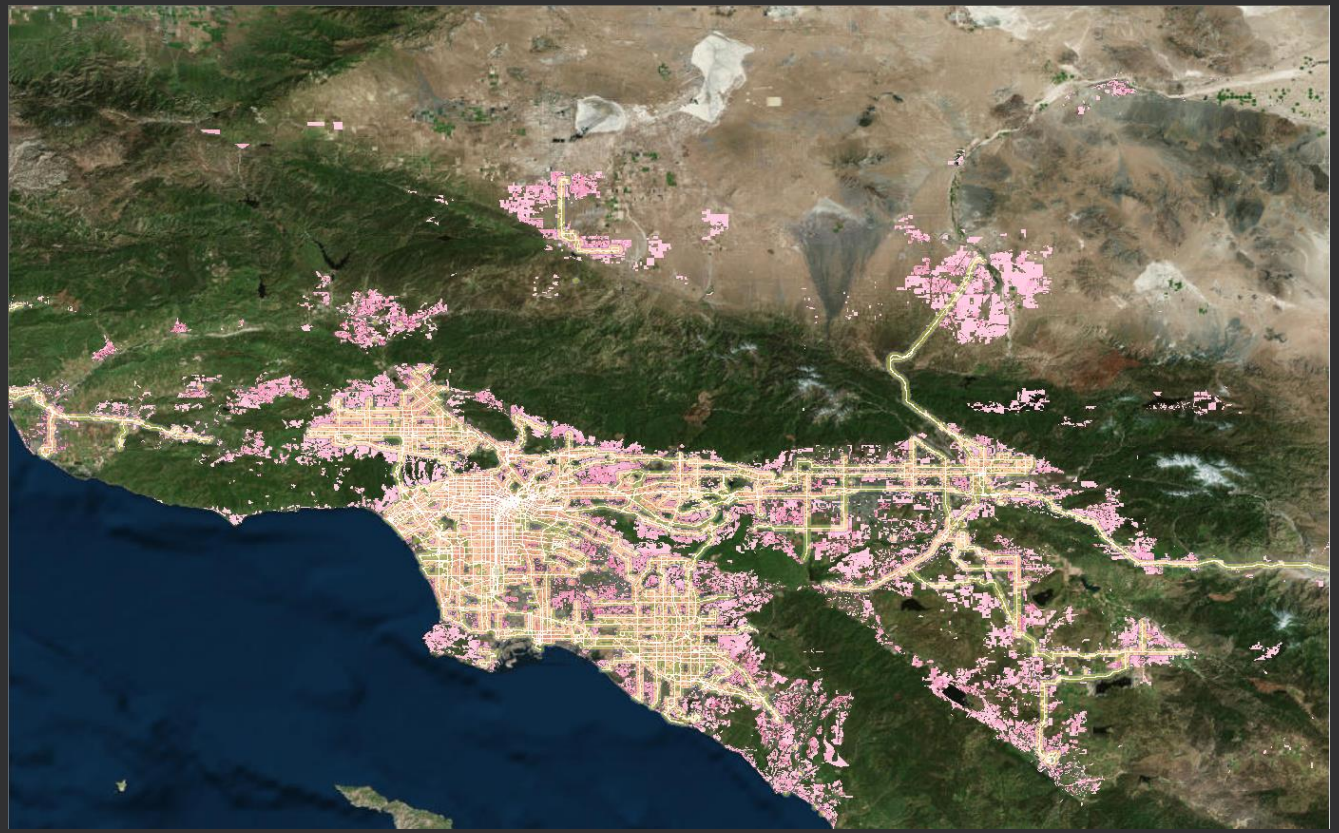
Illustrative only

Visual example #2: More Compact



Illustrative only

Visual example #2: Infill Focus



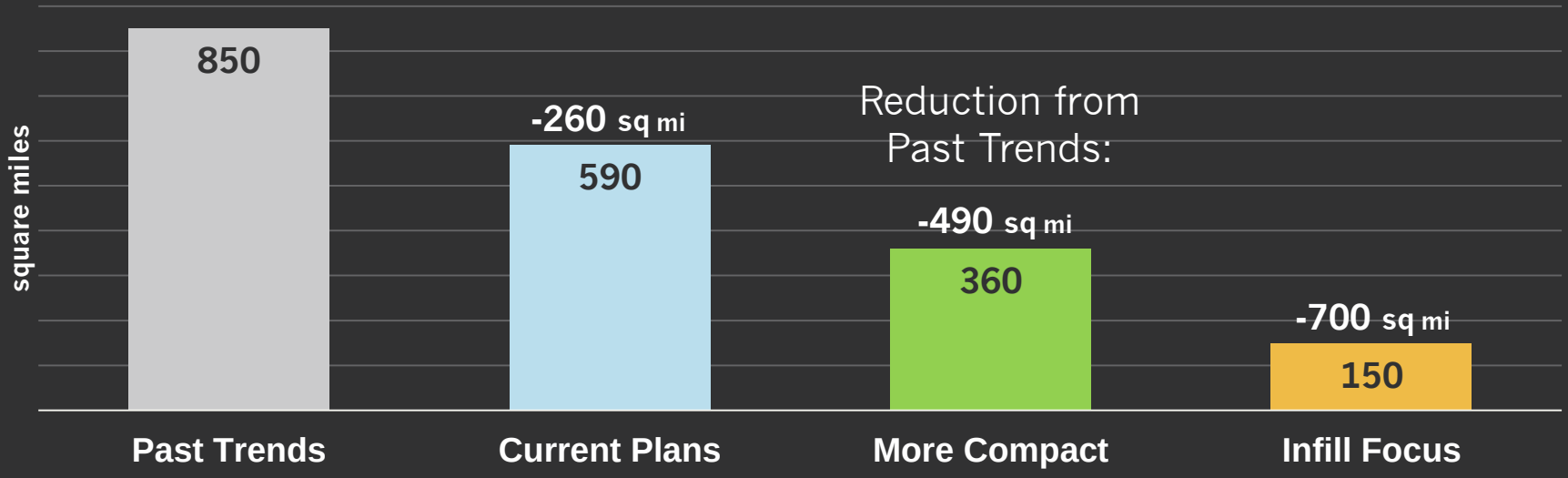
Illustrative only

SCENARIO RESULTS!

(Selected results presented here; see report for full results.)

LAND CONSUMPTION

New (greenfield) land consumed to accommodate growth to 2030

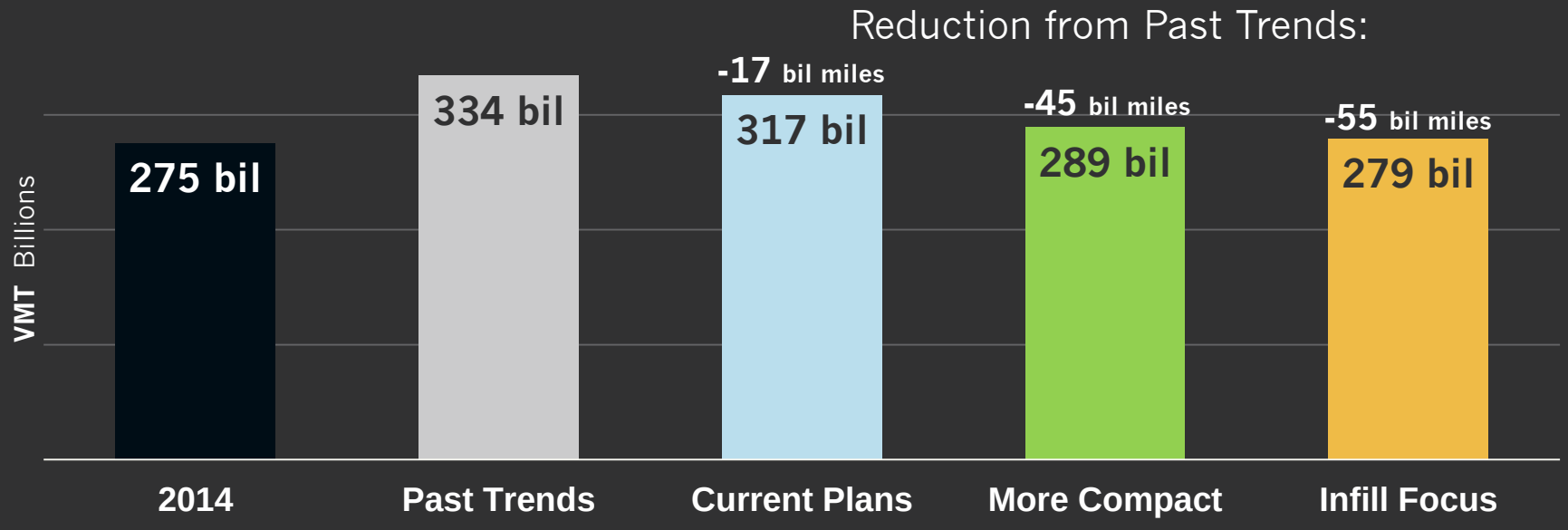


Compared to Past Trends:

Land saved in Infill Focus is equivalent to 14 times that of San Francisco

HOUSEHOLD DRIVING

Annual Passenger Vehicle Miles Traveled (VMT), 2030

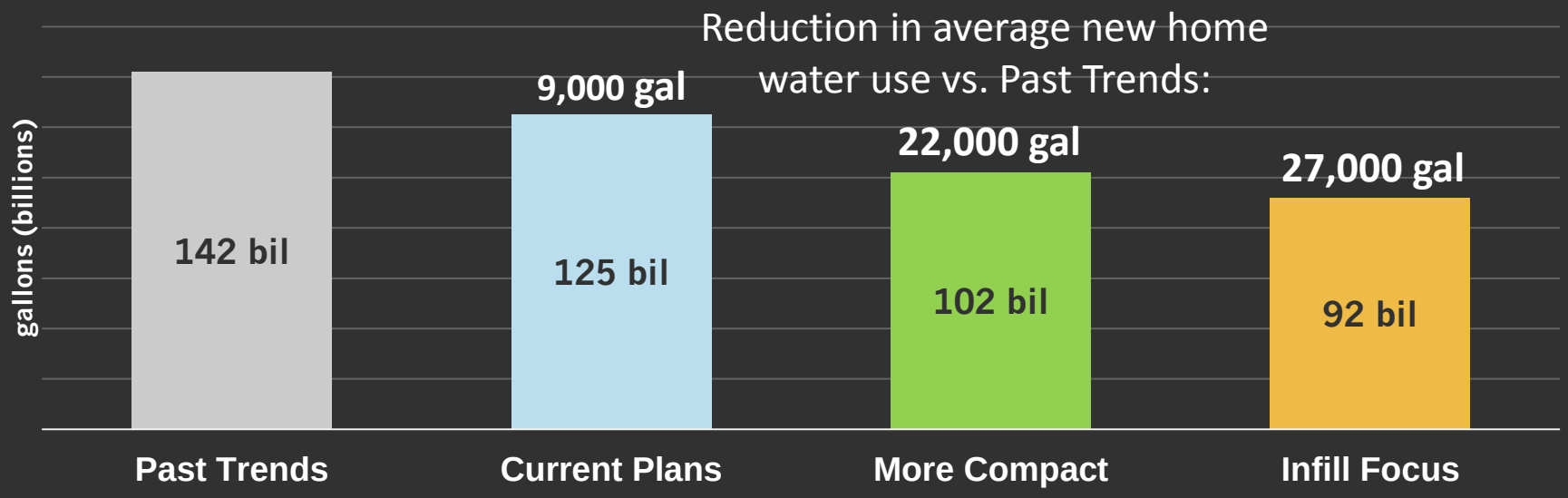


Compared to Past Trends:

VMT reduction in Infill Focus is like taking 4.6 million cars off California roads.

WATER USE

Residential water use for new homes in 2030

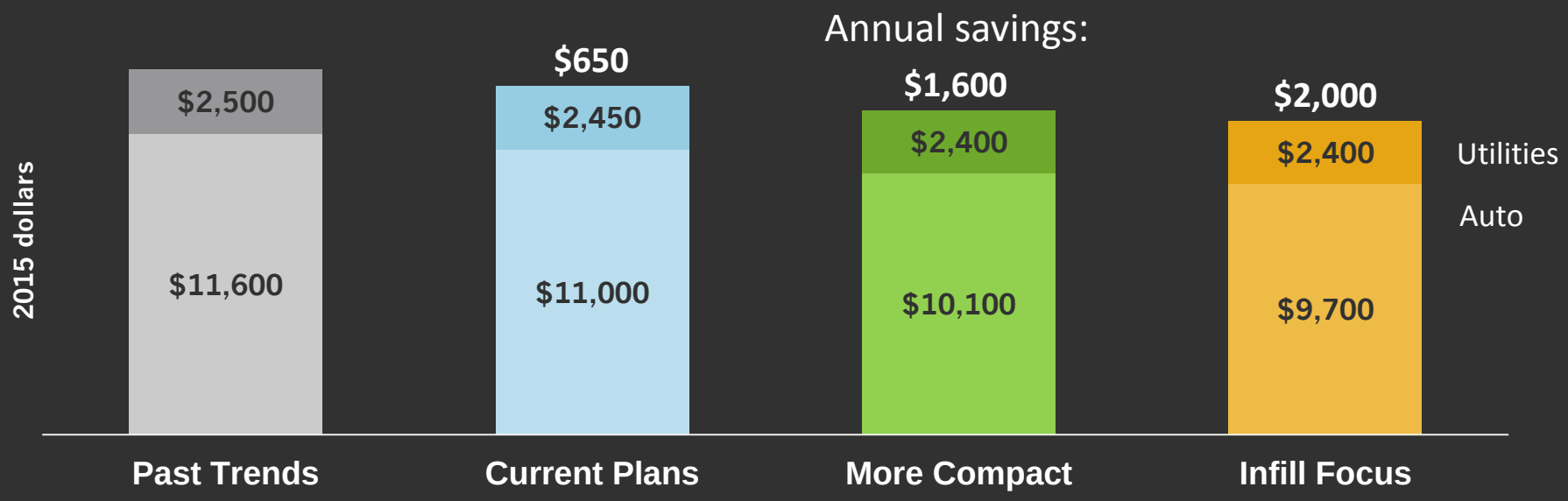


Compared to Past Trends:

Infill Focus saves enough water to supply 470,000 homes in 2030.

HOUSEHOLD AUTO & UTILITY COSTS

Household costs for auto fuel, ownership, and maintenance + energy and water use in 2030

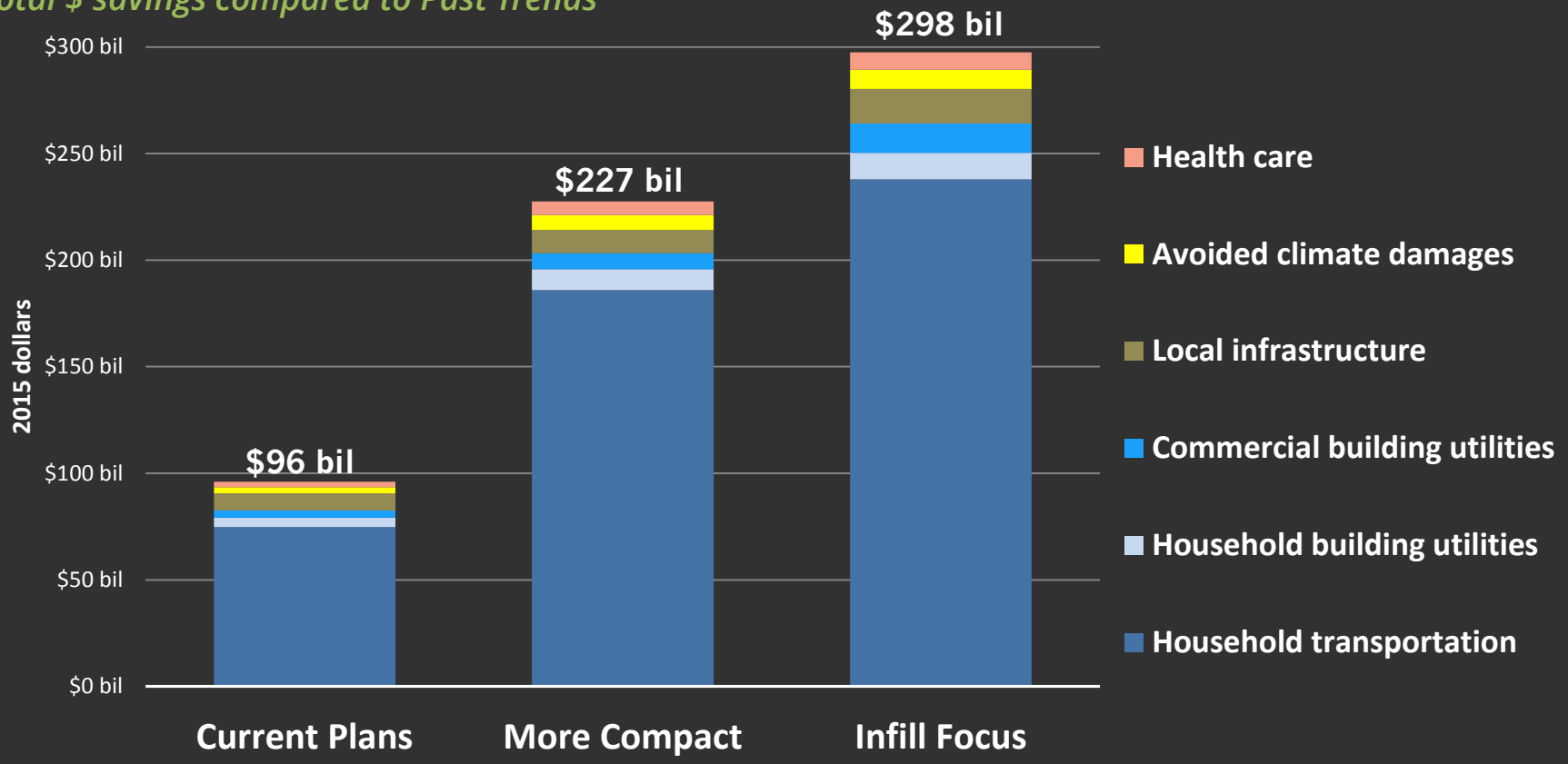


Compared to Past Trends:

Infill Focus saves California households a cumulative total of $250 billion to 2030.

COST SAVINGS: CUMULATIVE TO 2030

Total $ savings compared to Past Trends



POLICY REVISITED

Top three targets for statewide policy

1. SB 375 target re-evaluation
2. 2030 Scoping Plan
3. GHG Reduction Fund spending


THANK YOU
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ANALYTICS