Sacramento Area Council of Governments

Toolboxes, Languages, and Co-benefits:

Considerations for Policy Issues

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Sacramento Area Council of Governments

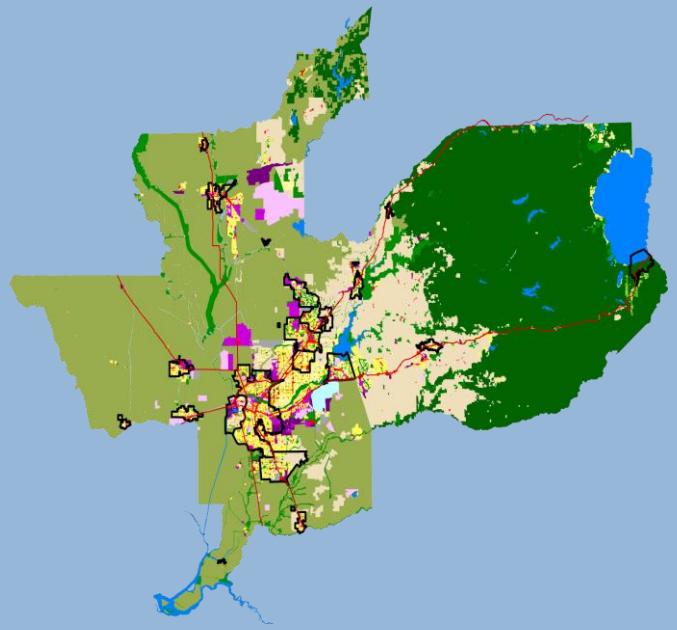
The context of my remarks

- A performance-based integrated scenario planning process
- Regional land use & transportation plan (the Blueprint Vision)
- The Plan is moving to implementation by our cities and counties
- SB 375
  - California legislation to integrate land use, transportation, and climate change

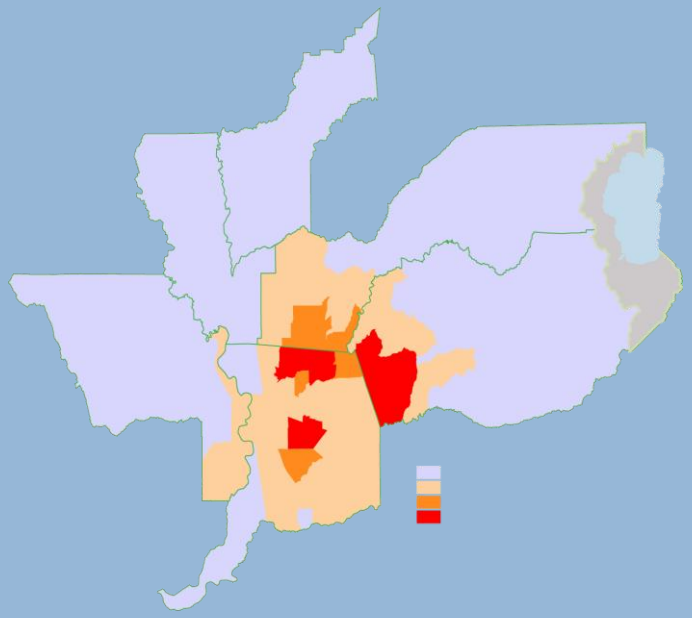
Why Improve SACOG Models?

- Models are tools to apply research in the most effective and comprehensive manner to address policy issues
- Research points to interrelated causes and consequences
- Policy issues are often, and more frequently, interrelated

Develop Better Information and Tools for Decision Making

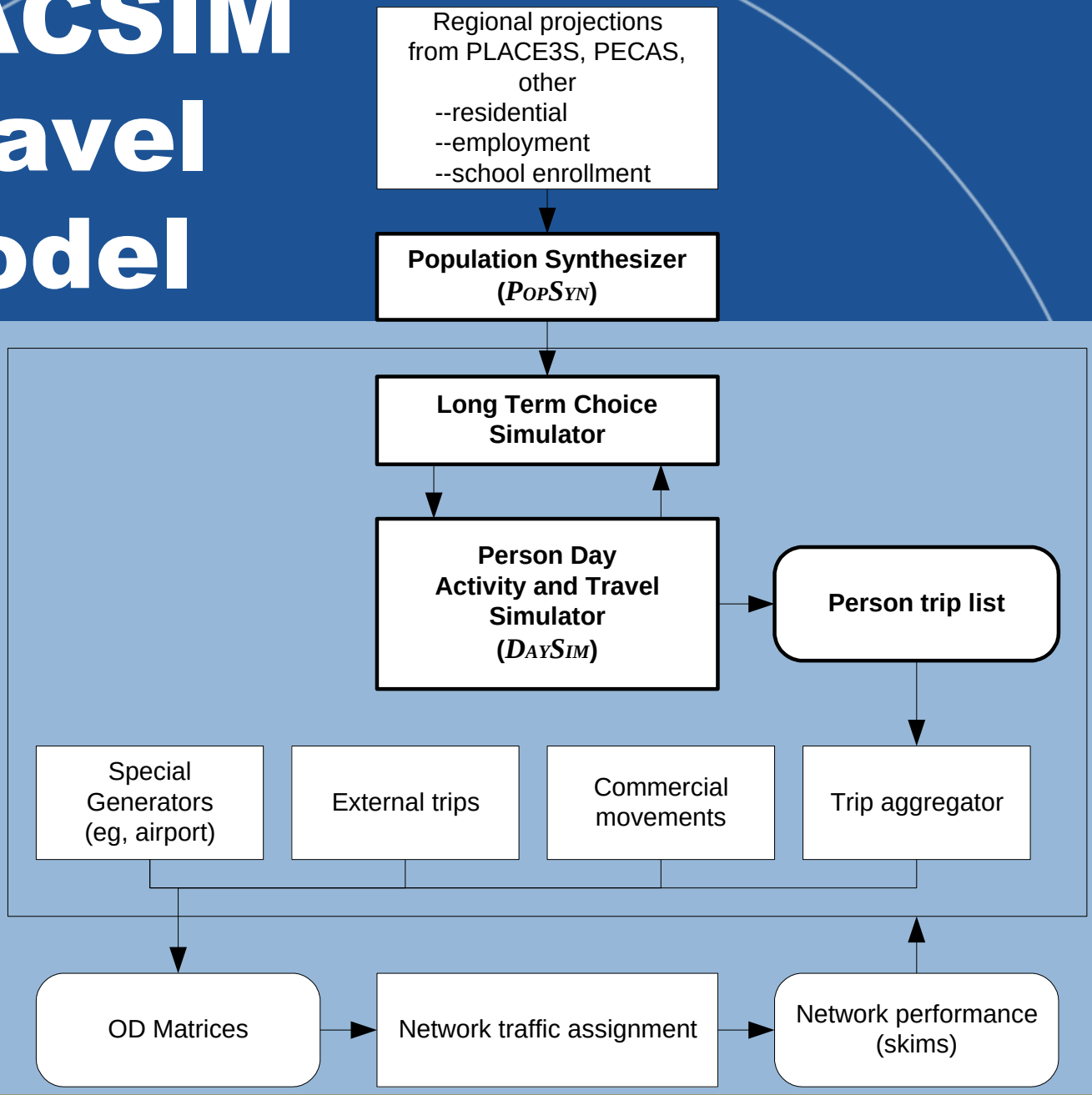


I-PLACE^{3}S - Land Use Planning Model



SACSIM Tour-based travel model

SACSIM Travel Model



I-PLACE^{3}S Planning Model

- **PLA**nning for **C**ommunity **E**nergy, **E**conomic and **E**nvironmental **S**ustainability
  - Land Use and Growth "Visioning" Tool
  - Parcel based to meet planning and public outreach needs
  - Modular framework to enhance current functions and add new functions

I-PLACE^{3}S Modules

- Land use development
- Return on investment
- Transportation
- Energy demand - buildings
- Public health/physical activity
- Agriculture/open space
- Future modules (Infrastructure cost, Fiscal analysis, Water demand)

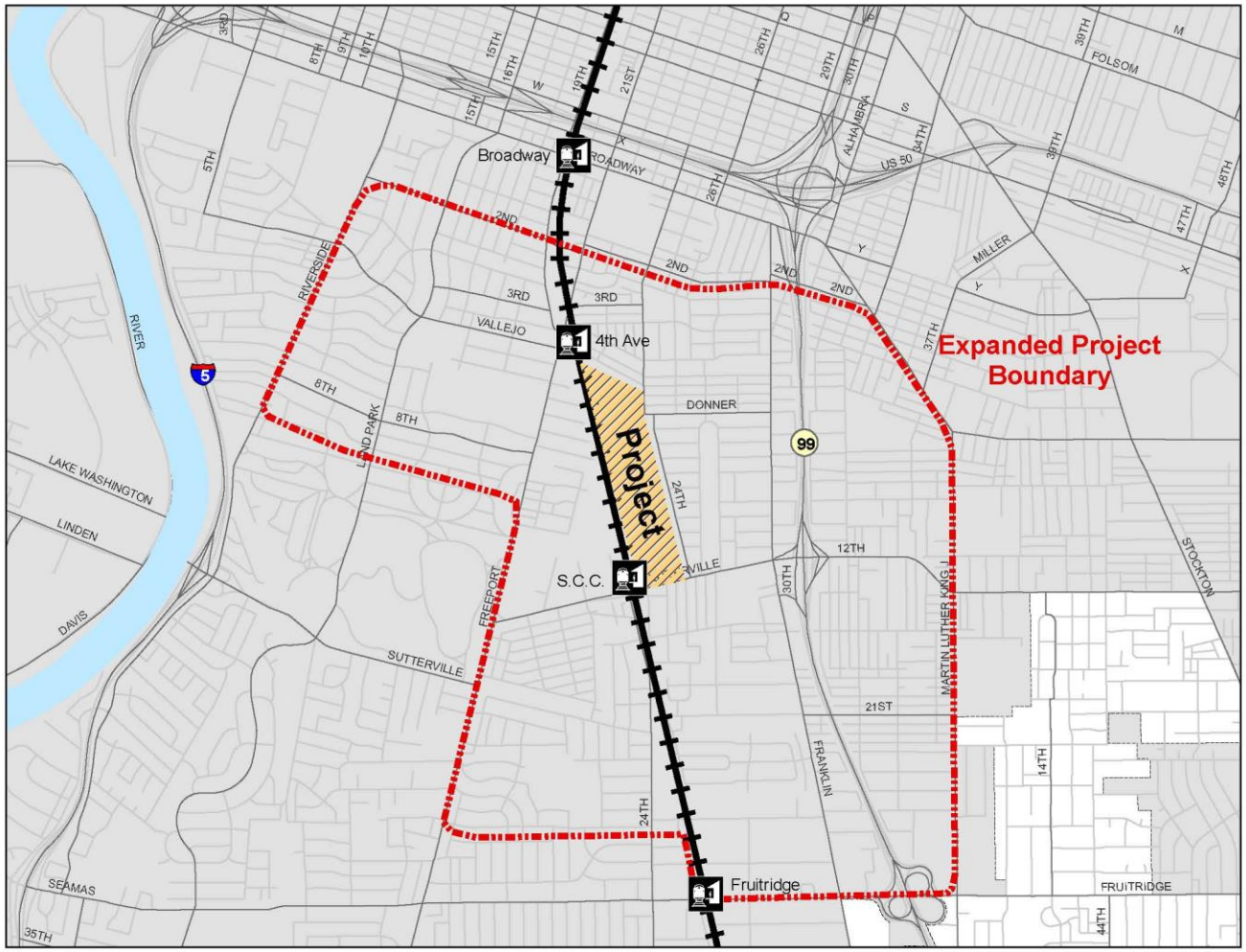
Placer Vineyards, a Sub-regional Analysis

- 5,200 acre site at the edge of the current urban area
- “Blueprint” alternative 21,000 households
- Lower development alternative 14,000 households
  - Add the “surplus” 7,000 households to next-most-likely locations in the sub-region

Travel Statistics for Placer Vineyards Households (Including Reallocation)							
	Blueprint Alternative	Placer Co. Unincorp. Alternative			Sub-Regional Market Alternative		
	All HH's in PV Area	HH's Remaining in PV Area	HH's Allocated to Other Areas	All HH's	HH's Remaining in PV Area	HH's Allocated to Other Areas	All HH's
Households	21,367	13,162	8,205	21,367	13,138	8,048	21,186
Percent of Daily Person Trips							
Transit	1.4%	1.1%	0.3%	0.8%	1.0%	0.2%	0.7%
Bike+Walk	6.5%	4.7%	4.2%	4.5%	4.7%	3.0%	4.1%
Private Auto	91.0%	93.1%	94.0%	93.5%	93.1%	95.3%	93.9%
Daily Person Trips per Household							
Transit+Bike+ Walk Trips /HH	0.78	0.57	0.41	0.51	0.57	0.30	0.47
Vehicle Miles Traveled / HH	43.1	49.8	64.1	55.3	48.6	59.7	52.8
Daily Vehicle Miles Traveled	921,021	656,117	526,069	1,182,186	638,358	480,138	1,118,496

Source: SACOG, May 2007.

Curtis Park Village: A Neighborhood analysis



Project Area Travel Metrics

	Year 2035 Weekday Travel Indicators for Curtis Park Village		
	Developer Option B	Developer Aug2009 Plan	SCNA Plan
Project Area Only			
Vehicle Miles Traveled	12,830	17,198	15,343
VMT Per Person+Job	*6.7*	*7.3*	*7.4*
Transit Trips	156	177	202
Transit Mode Share	*3.8%*	*3.5%*	*4.3%*
Bike+Walk Trips	474	591	560
Bike+Walk Mode Share	*11.7%*	*11.7%*	*11.9%*
Source: Sacramento Area Council of Governments, October 2009.			

Project + Neighborhood Travel Metrics

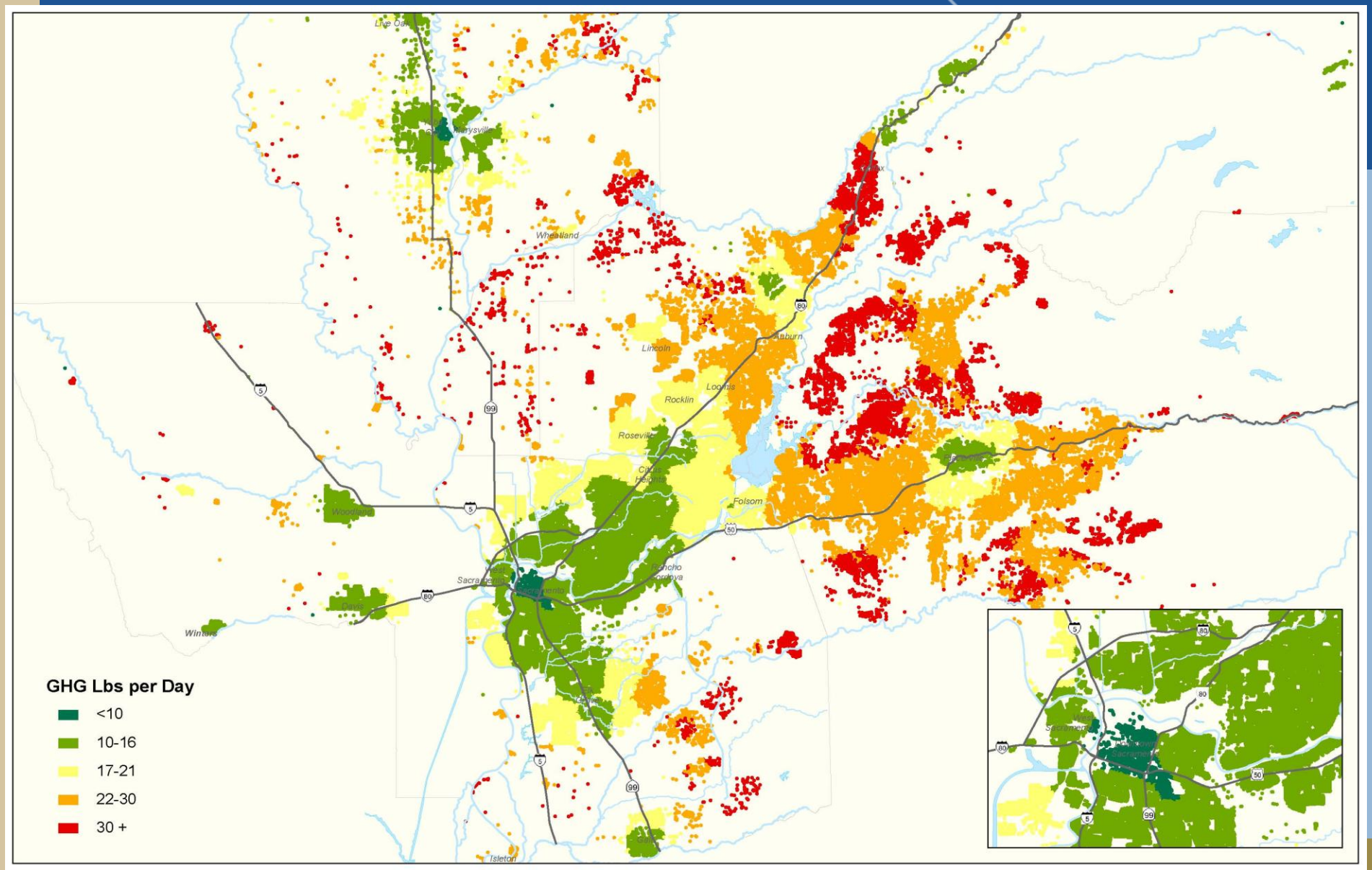
	Year 2035 Weekday Travel Indicators for Curtis Park Village and Neighborhood Area		
	Developer Option B	Developer Aug2009 Plan	SCNA Plan
Expanded Project Area			
Vehicle Miles Traveled	571,499	575,327	571,534
VMT Per Person+Job	*16.3*	*16.2*	*16.2*
Transit Trips	9,909	10,441	9,998
Transit Mode Share	*6.3%*	*6.6%*	*6.4%*
Bike+Walk Trips	13,930	14,135	14,110
Bike+Walk Mode Share	*8.9%*	*9.0%*	*9.0%*

Source: Sacramento Area Council of Governments, October 2009.

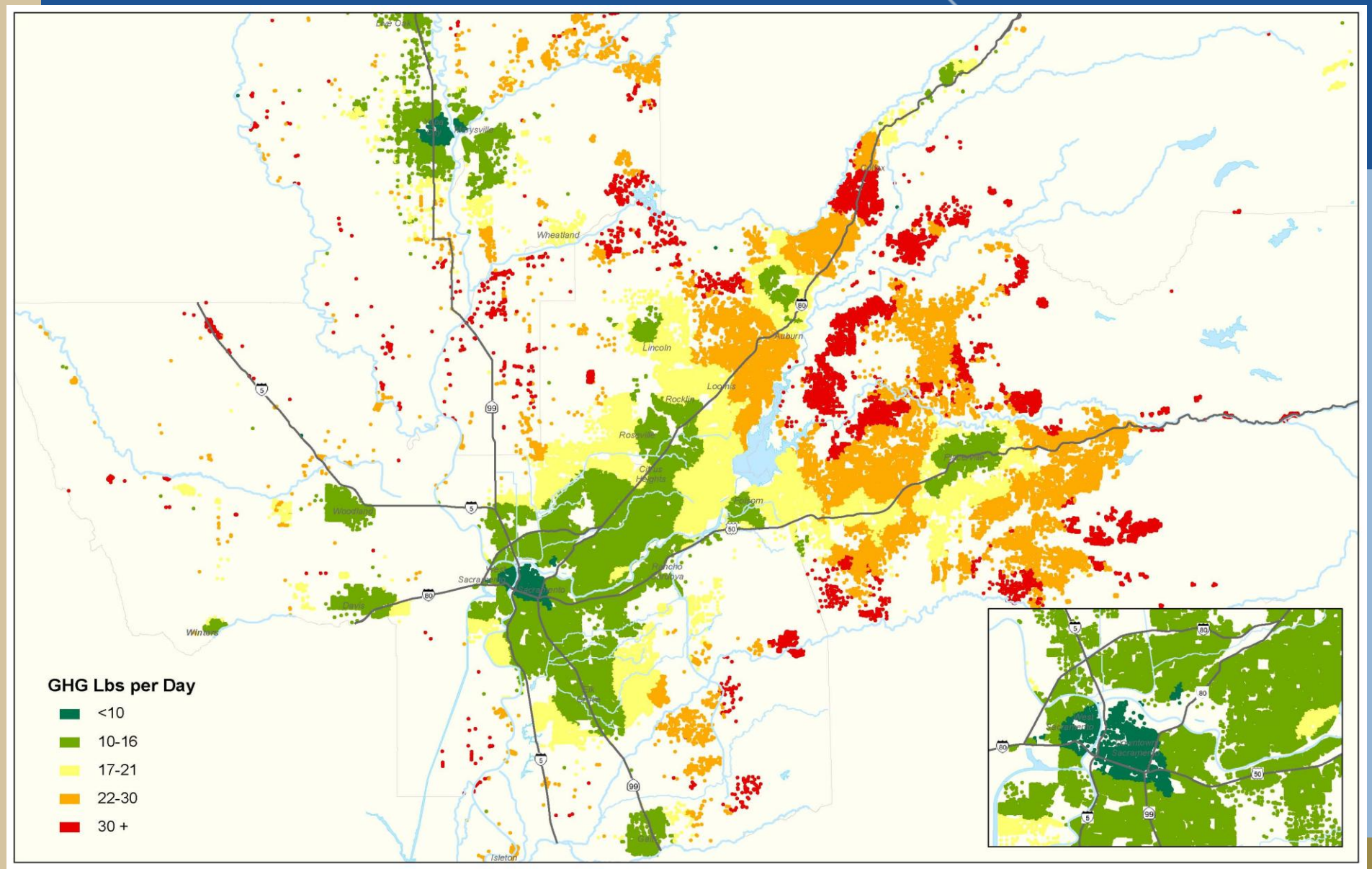
Greenhouse Gas Analysis, A RTP Analysis

- SB 375 requires RTP meet greenhouse gas targets, either in the adopted or alternative plan
- If targets are met, residential projects can receive environmental streamlining
- Apply the travel model + emissions models for total and per capita GHG

2005 GHG per Capita



2035 GHG per Capita



Current Development Projects

- Travel pricing improvements to SACSIM
- Integrate SACSIM with DynusT and MOVES
- Public health and urban form
- PECAS calibration

Lessons from Integrated Analysis of Policy Issues

- Complex policies require clear descriptions to a variety of audiences
- Recognize that models can be policy instruments
  - Models need to remain objective tools so the analysis is credible
  - Models need to be understood
- The analysis (and the analyst) has the responsibility to communicate effectively in the "language" of the audience

Lessons (continued)

- Travel models need to, and finally are getting close to, acknowledge that there are many impacts that are important to a wide range of interests
  - Travel is derived demand
  - Travel impacts and connections are pervasive
- Impacts are seen as primary and secondary, depending on the audience
  - Co-benefits

A Travel Model Toolbox

Researchers

Model Developers

Practitioners

A Travel Model Toolbox

Network Systems (Supply)

Researchers

Model Developers

Practitioners

A Travel Model Toolbox

Network Systems (Supply)

Travel Behavior (Demand)

Researchers

Model Developers

Practitioners

A Travel Model Toolbox

Network Systems (Supply)

Travel Behavior (Demand)

Personal **Commercial**

Researchers

Model Developers

Practitioners

A Travel Model Toolbox

	Network Systems (Supply)	Travel Behavior (Demand)	
		Personal	Commercial
Researchers			
Model Developers			
Practitioners			

Complex Policies Mean Moving to a Bigger Box

- Transportation planners
  - Management
  - Finance
- Traffic engineers
- Elected officials
- News media
- Land use

More Parts of the Bigger Box

- Demographics & economics
- Public health
  - Safety
  - Physical activity
  - Pollution exposure
- Air pollution
- Climate change

A Short List of Modeling Issues

- Activity patterns
  - time use, multi-day patterns, telecommuting and other tele-actvities
- Network fidelity
  - Network dynamics and management interaction with travel demand in short run and long run
- Emissions models
  - MOVES modal complexity, vehicle fleet changes due to travel demand, land use, and economics, non-trip emissions

OK, So the List is a Little Longer

- How do these systems interact through time? Can path dependent model systems reasonably represent this level of dynamics?
  - How do we model learning curves, rates of change from economic and policy changes
- How do the analytical and communication priorities get balanced within time and budget constraints?
- Finally remember we should have as simple a model as possible to address the problem

Questions ?