

Kern Council of Governments

**Proposed Climate Change Targets
For
Cars, SUVs and Light Trucks**

**Federal Designate Metropolitan Planning
Organization (MPO) for Kern County
May 25, 2010**

1.5 Year Public Participation Process

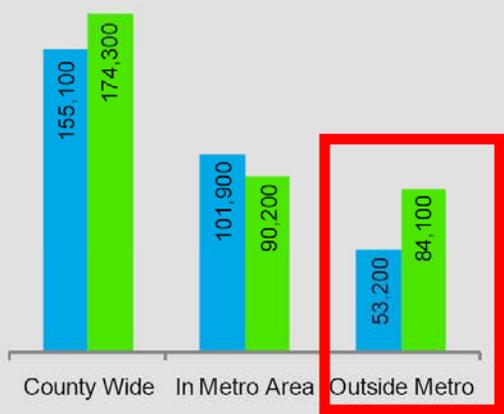
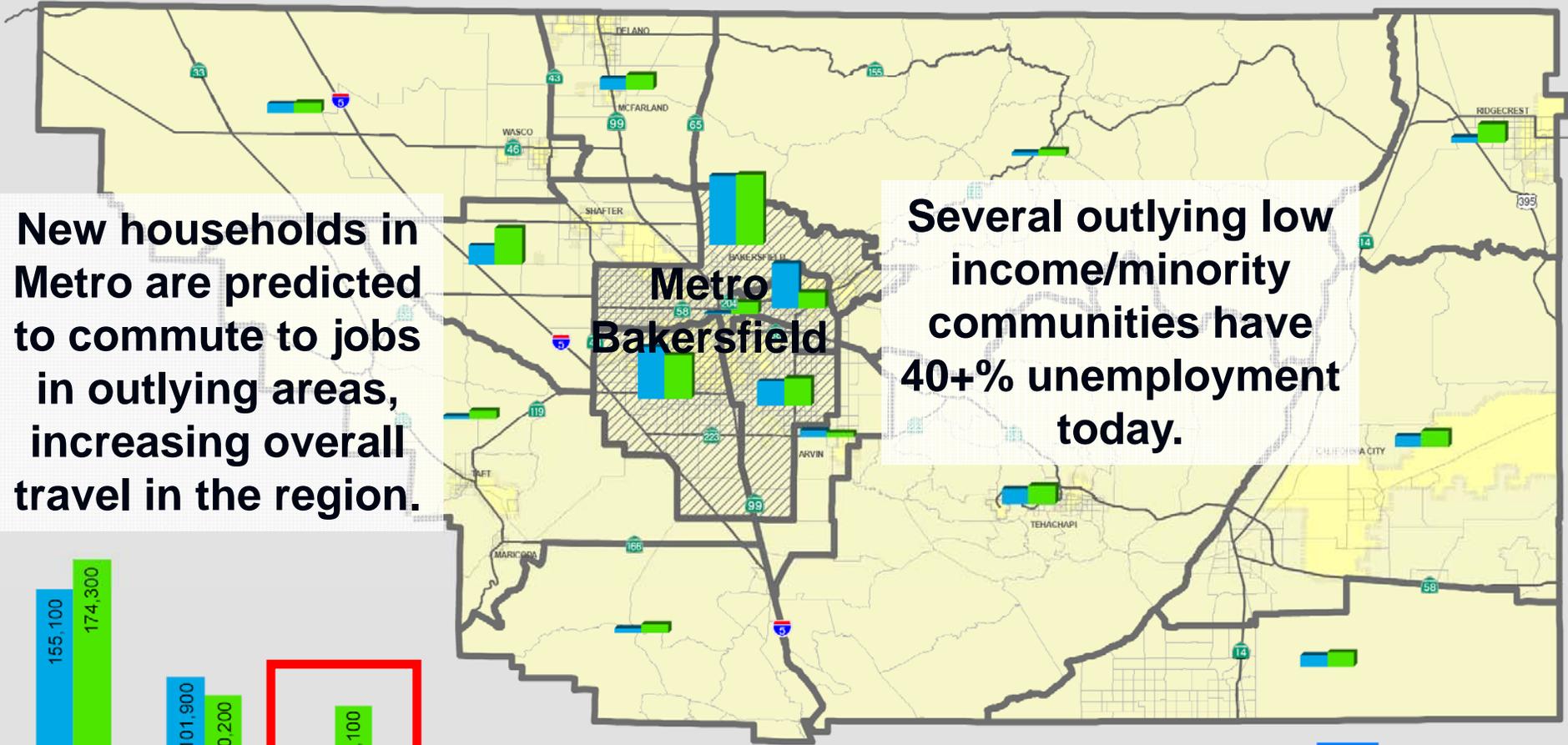
- 28 Meetings (Task Force, Local govt. visits, workshops, Summit w/175 attendees) including Stakeholder representatives from non-profit/ environmental organizations, private sector, and local governments.
- 3,100 participants in Blueprint required Emphasis on Co Benefits of Climate Change Emission Reduction

Source of 8-12% Emissions Increase in Kern: More Employment Growth Than Housing In Outlying Areas

Employment/Household Growth 2006-2035

New households in Metro are predicted to commute to jobs in outlying areas, increasing overall travel in the region.

Several outlying low income/minority communities have 40+% unemployment today.

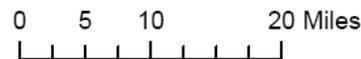


Strategic Employment Exemption Areas



Rural Employment Clusters

- Military
- Prisons
- WindEnergy
- CityLimits



ARB RTAC Method

Emissions model:

NO Credit for State Strategies - Pavley/LCF

**The more exemptions,
the greater the percent
reduction realized by the
alternative to current
trends (ACT) scenario.**

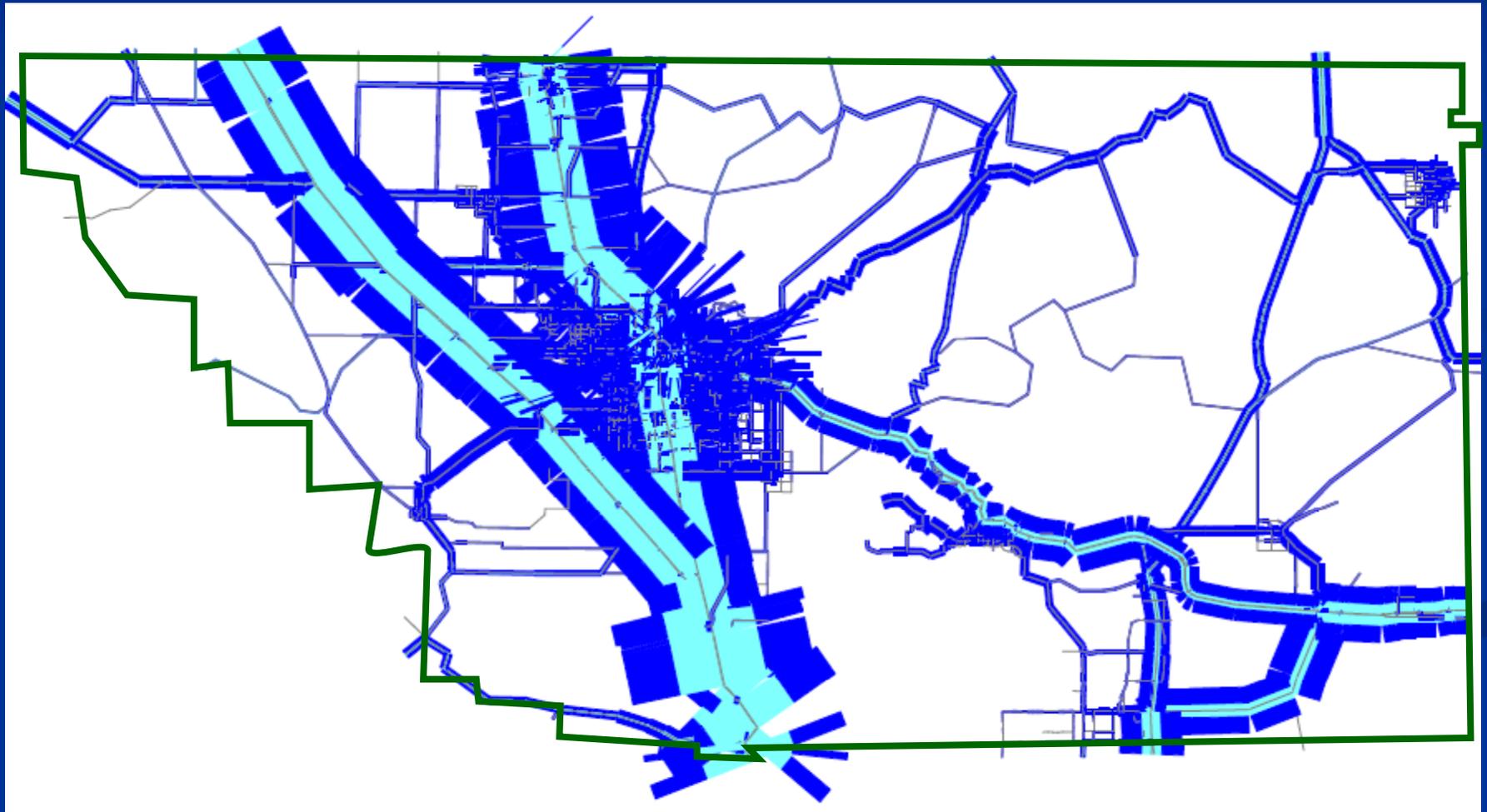
Factor or Variable

All Travel within Kern	All Travel minus pass thru trips (-XX)	RTAC Method (-XX, -50%IX, -50% Mil)	KERNCOG (-XX, -50%IX, -100%Mil, -50%Pris,- 50%Wind)
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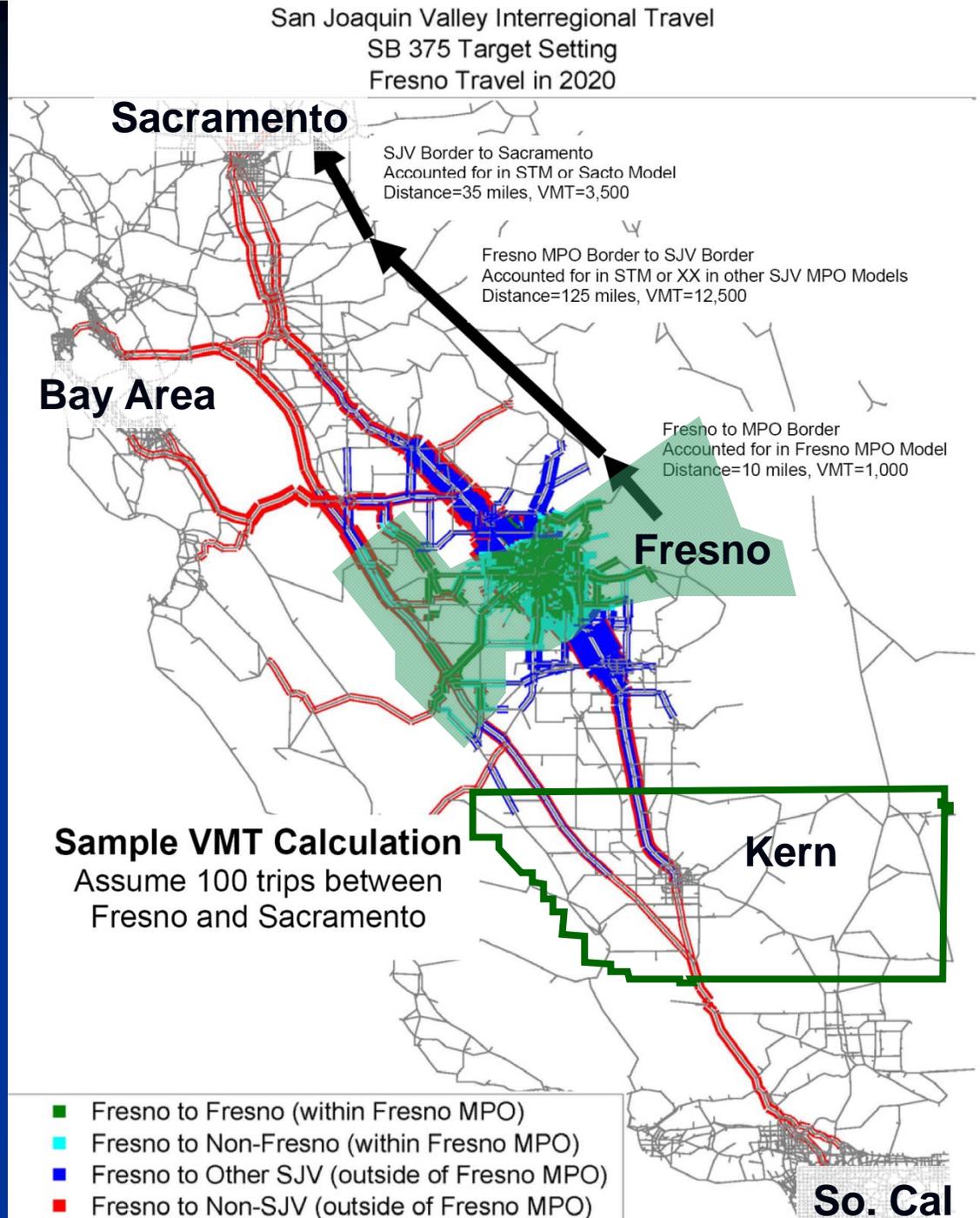
Computed or Adjusted Values,
based on MPO Data

Weekday CO2 Emissions by Passenger Vehicles Per Capita (Pounds)				
Base Year (2005)	22.02	15.41	14.32	13.58
SB 375 Horizon Year (2035 CT)	23.71	16.71	15.79	15.22
Base Scen Horizon Yr. (2035 NoBuild)	23.94	16.96	16.02	15.41
Alt. Scen. Horizon Yr. (2035 ACT)	23.60	16.64	15.72	15.12
Percent Change in CO2 Per Capita from 2005 (SB 375 Target Format)				
Base Year (2005)				
SB 375 Horizon Year (2035 CT)	7.7%	8.4%	10.3%	12.0%
Base Scen Horizon Yr. (2035 NoBuild)	8.7%	10.0%	11.9%	13.5%
Alt. Scen. Horizon Yr. (2035 ACT)	7.2%	8.0%	9.8%	11.3%
Pct. Diff. between 2035 CT and ACT	-0.45%	-0.45%	-0.48%	-0.60%

**Pass-Through Travel (lt. blue)
Accounts for 30% of all Passenger
Vehicle Travel in the Kern Model**



Statewide
 Transportation
 Model Results:
 Bandwidths show
 travel from Fresno
 COG to Southern
 California passing
 through Kern
 (lt. blue from
 previous slide)



Alternative to Current Trend

Beyond Model Travel

Factor or Variable

Emissions model:

New Runs Since Local Adoption 4/28/10

NO Credit for State Strategies - Pavley/LCF

50% Beyond MPO Model Travel (50%BMT)	RTAC Method (-XX, -50%IX, -50% Mil)	RTAC Method +50%BMT (-XX, -50%IX, -50% Mil)	Big 4 MPOs All Travel minus pass thru trips (-XX)	KERNCOG (-XX, -50% IX, -Mil, - 50%Pris, - 50%Wind, +50%BMT
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Computed or Adjusted
Values, based on MPO Data

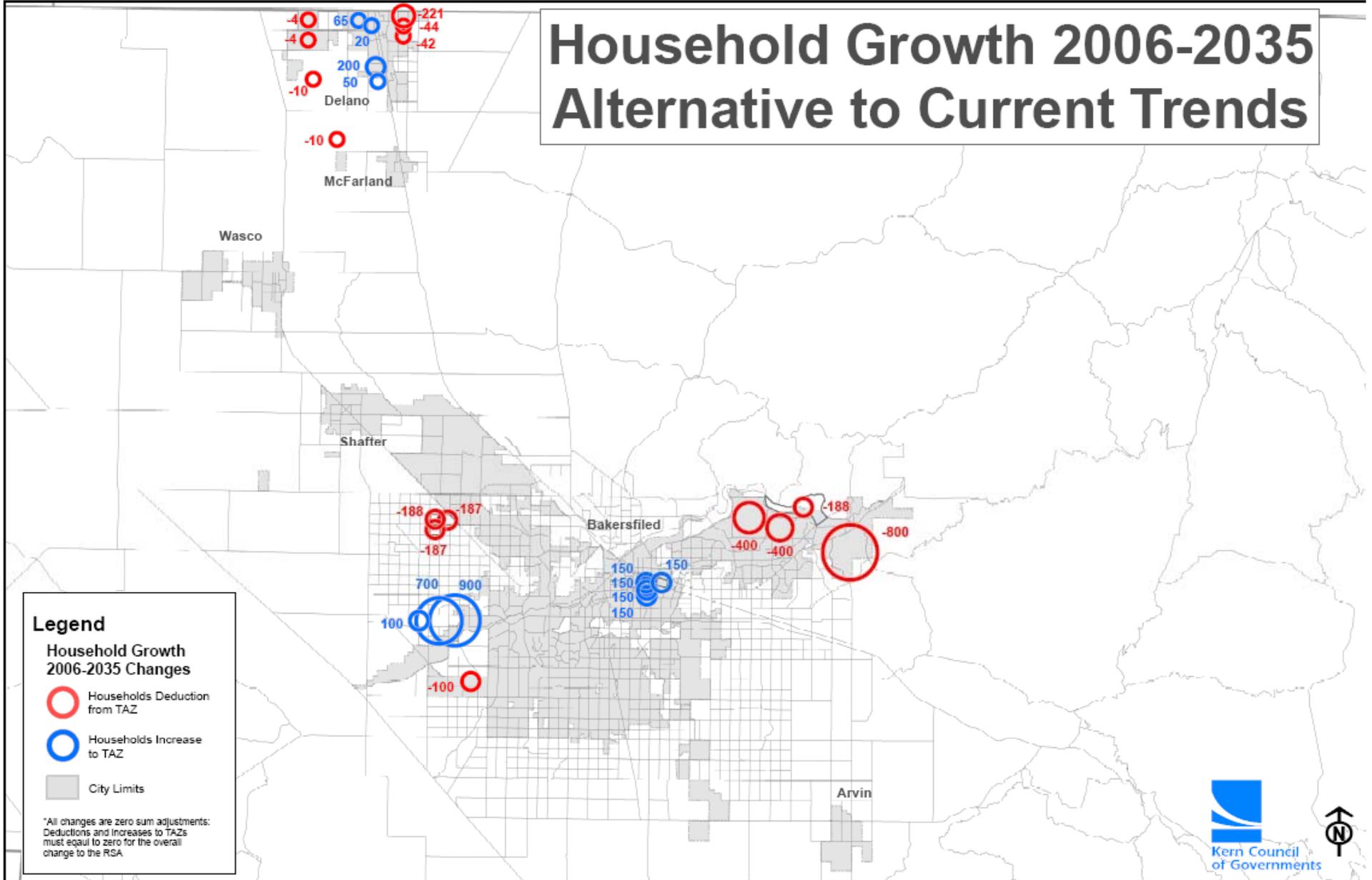
Weekday CO2 Emissions by Passenger Vehicles Per Capita (Pounds)					
Base Year (2005)	2.23	14.32	17.02	15.41	15.81
SB 375 Horizon Year (2035 CT)	1.57	15.79	17.74	16.71	16.79
Alt. Scen. Horizon Yr. (2035 ACT)	1.57	15.72	17.66	16.64	16.69
Percent Change in CO2 Per Capita from 2005 (SB 375 Target Format)					
Base Year (2005)					
SB 375 Horizon Year (2035 CT)	-29.6%	10.3%	4.3%	8.4%	6.1%
Alt. Scen. Horizon Yr. (2035 ACT)	-29.6%	9.8%	3.8%	8.0%	5.6%
Pct. Diff. between 2035 CT and ACT	0.00%	-0.48%	-0.43%	-0.45%	-0.54%

Alternative to Current Trend

- Spreadsheet Model Method – slowed per capita GHG from 10.3 to 9.8% increase (.5% reduction)
 - Affected 24 TAZ (1.5% of all TAZs)
 - Moved 1% of household growth
 - Moved 2% of employment growth
- Land Use Model Method – slowed per capita GHG from 13% increase to -5% (16% reduction)
 - Affected 1000 TAZs (63% of TAZs)
 - Moved 17% of household growth
 - Moved 27% of employment growth

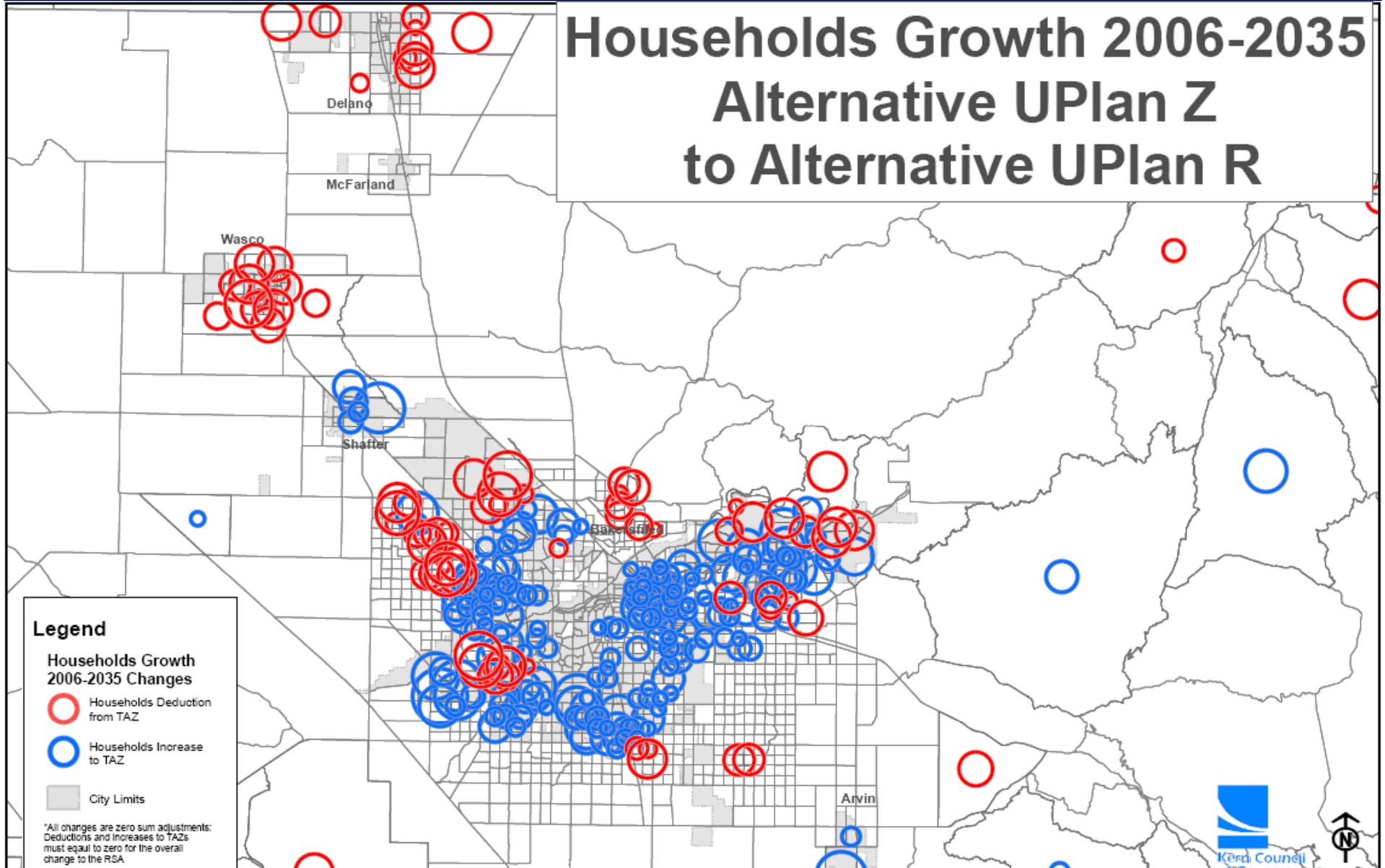
2035 Spreadsheet - Alternative to Current Trend (ACT) Jobs-Housing Balance Scenario

Household Growth 2006-2035 Alternative to Current Trends



2035 Land Use Model - Alternative to Current Trend (ACT) Jobs-Housing Balance Scenario

Households Growth 2006-2035 Alternative UPlan Z to Alternative UPlan R



Alternative to Current Trend

- Trip Making “4D” Adjustments for:
 - Density – Compact Development -6%
 - Diversity – Mixed Use Areas -4%
 - Design – Walkable/Bikeable -2%
- Sensitivity Testing found the Model to be Sufficiently Sensitive to:
 - Distance to Transit – No adjustment
 - Destination – No adjustment

Omitting Pavley & Low Carbon Fuels, Not an Option

- SB 375, Steinberg (2008), 65080.2A(iii) states, “In establishing these targets, the state board shall take into account ... improved vehicle emission standards, changes in fuel composition, and other measures it has approved that will reduce greenhouse gas emissions in the affected regions, ...”

TARGETS WITH PAVLEY & LOW CARBON FUELS

Emissions model: CO2 with Pavley/LCF

Factor or Variable

All Travel within Kern	All Travel minus pass thru trips (-XX)	RTAC Method (-XX, -50%IX, -50% Mil)	KERNCOG (-XX, -50%IX, -100%Mil, -50%Pris, -50%Wind)
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Computed or Adjusted Values, based on MPO Data

Weekday CO2 Emissions by Passenger Vehicles Per Capita (Pounds)				
Base Year (2005)	22.02	15.41	14.32	13.58
SB 375 Horizon Year (2035 CT)	15.28	10.76	10.17	9.80
Base Scen Horizon Yr. (2035 NoBuild)	15.43	10.92	10.31	9.95
Alt. Scen. Horizon Yr. (2035 ACT)	15.22	10.72	10.13	9.75
Percent Change in CO2 Per Capita from 2005 (SB 375 Target Format)				
Base Year (2005)				
SB 375 Horizon Year (2035 CT)	-30.6%	-30.2%	-28.9%	-27.9%
Base Scen Horizon Yr. (2035 NoBuild)	-29.9%	-29.2%	-28.0%	-26.8%
Alt. Scen. Horizon Yr. (2035 ACT)	-30.9%	-30.5%	-29.2%	-28.22%
Pct. Diff. between 2035 CT and ACT	-0.40%	-0.42%	-0.45%	-0.46%

Baseline Assumptions

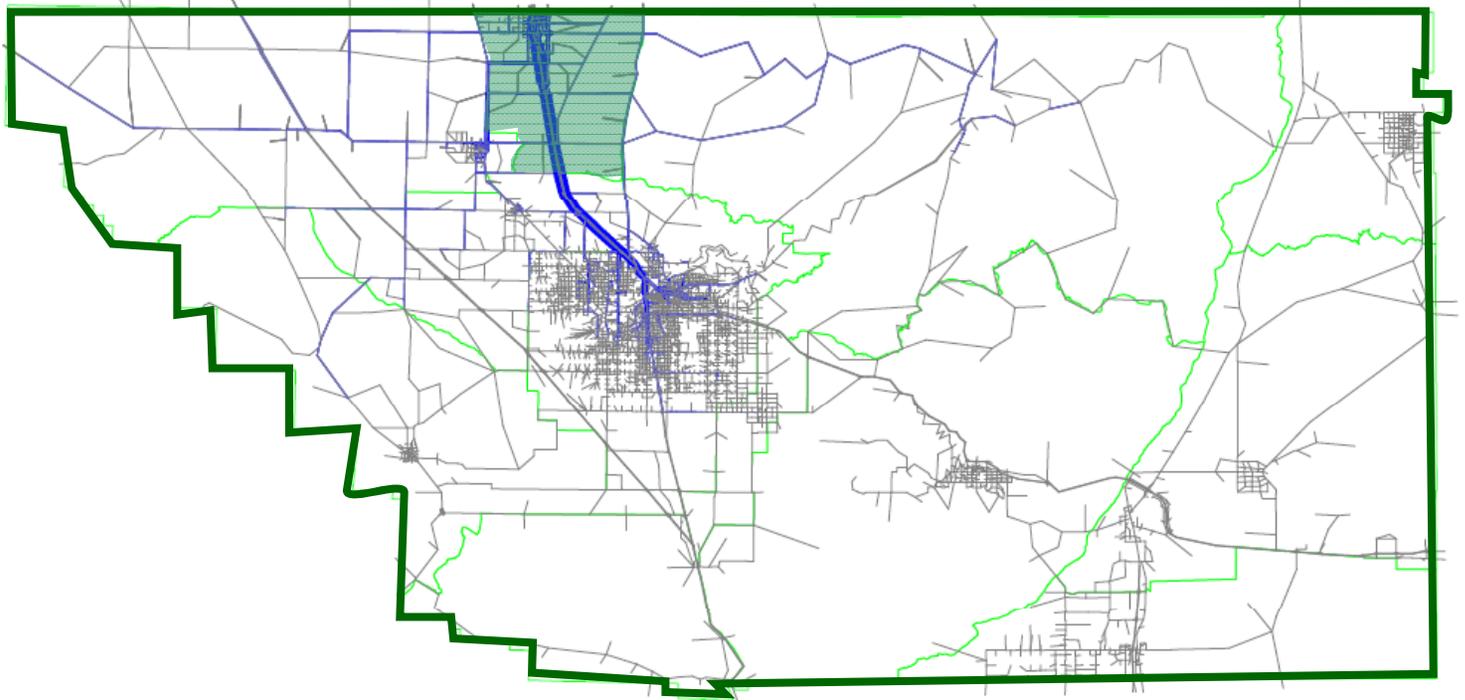
- Population 1,321,000 by 2035 adopted by Kern COG on October 15, 2009.
- SJV Air District Indirect Source Review Rule fee on new development
- Metro Bakersfield Development Impact Fee Incentive Rate for Infill
- 400 Infill Housing Near High Speed Rail Station
- Doubling Transit Fleet, route extensions, new circulator routes.
- Higher vehicle occupancy rates (reflecting informal van pools, etc.)

Tracking Progress: How is My Community Doing?

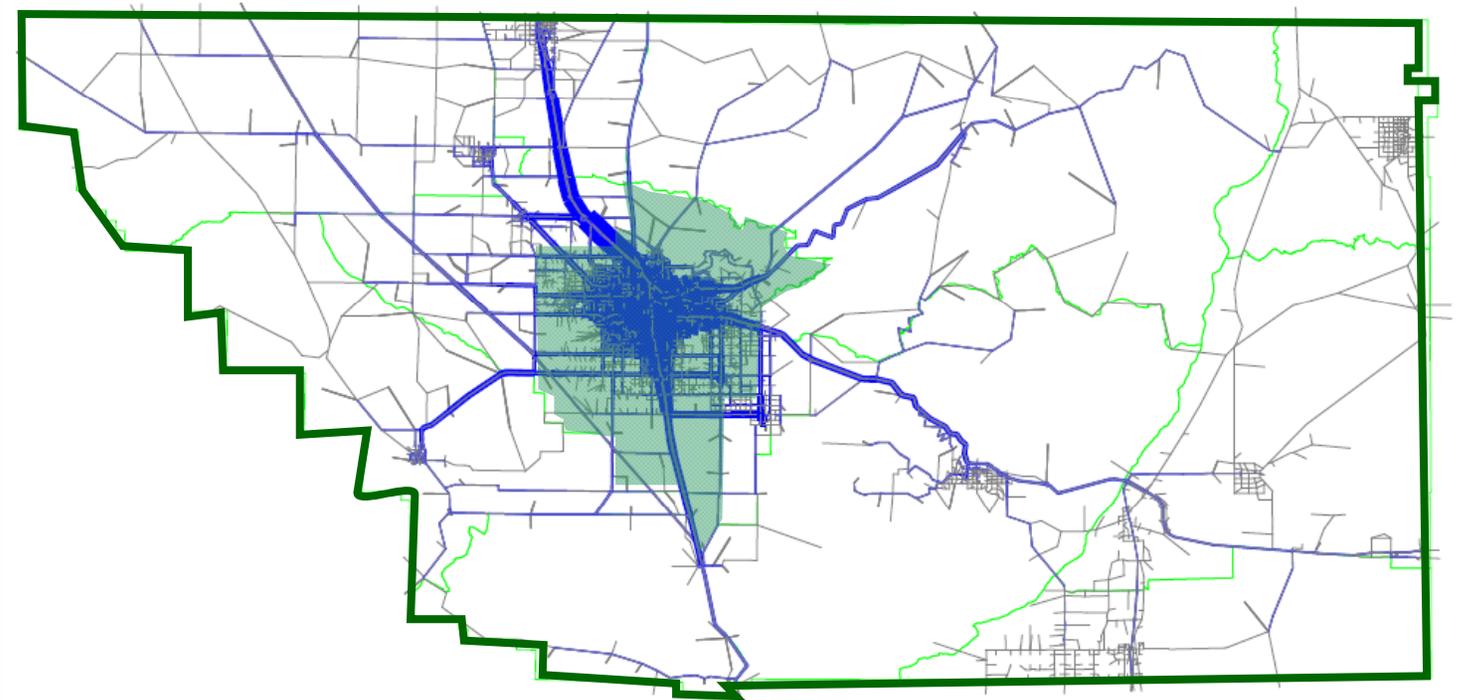
- Progress Tracking Method, Still Under Development, not needed until 2014 RTP/SCS
- SB 375 Tracking Progress Optional
- No CO2 Monitoring network like with other Air Pollutants
- Using Vehicle Miles Traveled Per Person as a surrogate for CO2
 - Transportation Model Validation Run VMT every 5-years
 - Can be broken out by sub areas of the County
 - Use controlled by Kern COG Board, not ARB

2006 Travel

Delano/
McFarland
17.7 VMT/
Pop + Emp



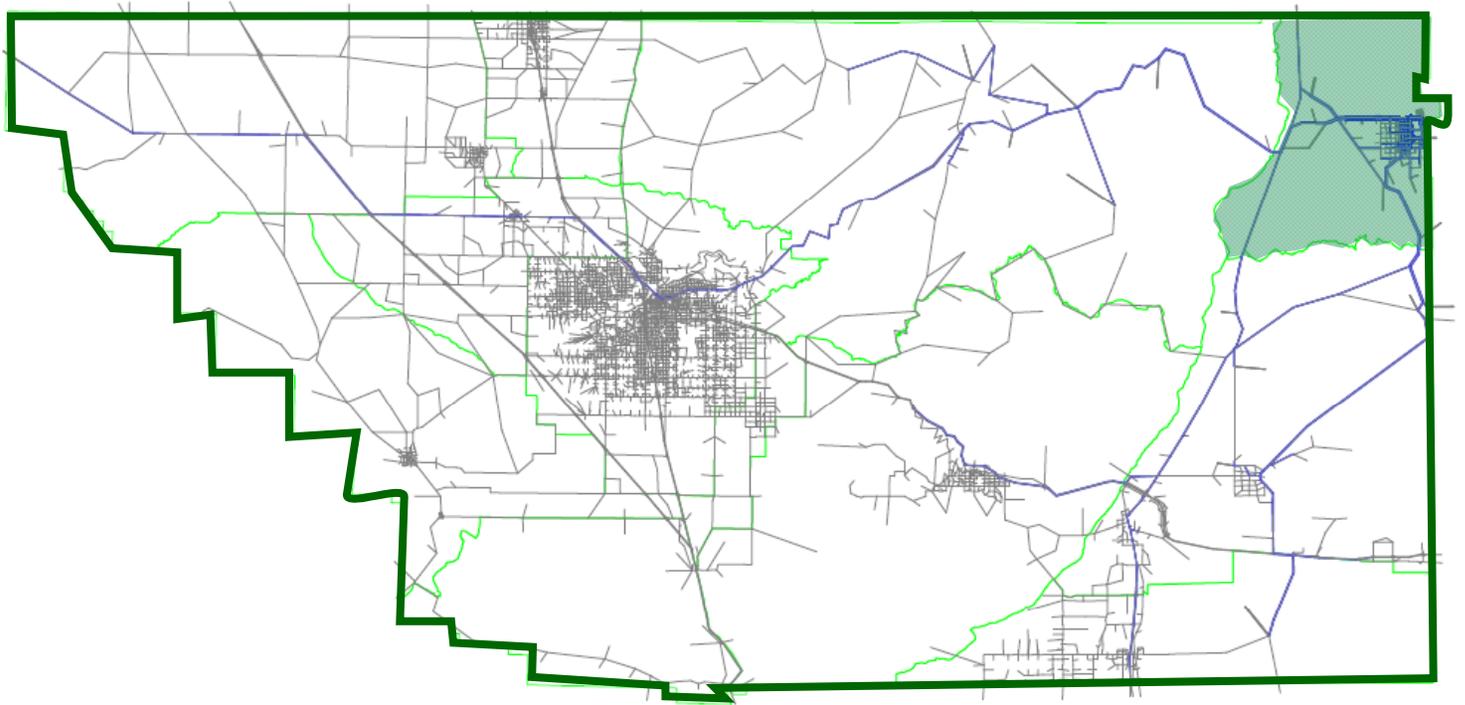
Metro
Bakersfield
16.2 VMT/
Pop + Emp



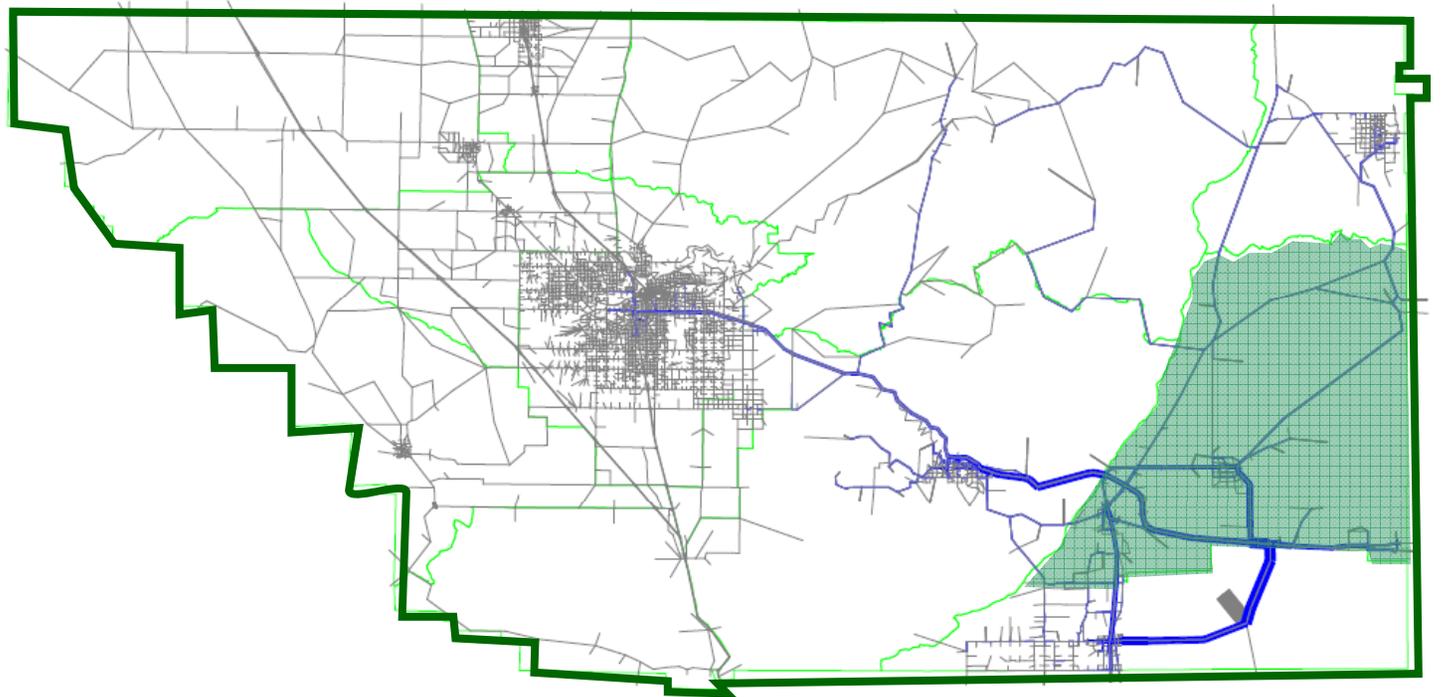
2006

Travel

Ridgecrest
15.4 VMT/
Pop+Emp



Cal City/
Mojave
82.4 VMT/
Pop+Emp



Tracking Progress With VMT

2006 Vehicle Miles Traveled Per Person by Regional Statistical Areas

County Division Regional Statistical Area	Household Population+ Employees	Percent of County Pop.+ Emp.	Vehicle Miles Traveled (VMT)	Percent of County VMT	VMT Per Pop + Emp.
Valley Air Basin	861,609	83.3%	16,385,678	70.9%	19.02
Metro Bakersfield	666,684	64.4%	10,792,956	46.7%	16.19
Greater Arvin	21,424	2.1%	671,434	2.9%	31.34
Greater Delano/McFarland	72,677	7.0%	1,288,375	5.6%	17.73
Greater Shafter	38,691	3.7%	1,493,132	6.5%	38.59
Greater Taft/Maricopa	28,685	2.8%	918,220	4.0%	32.01
Greater Wasco	33,448	3.2%	1,221,561	5.3%	36.52
Mountains	65,276	6.3%	2,931,900	12.7%	44.92
Greater Lake Isabella	19,153	1.9%	1,128,421	4.9%	58.92
Greater Frazier Park	10,508	1.0%	481,037	2.1%	45.78
Greater Tehachapi	35,615	3.4%	1,322,442	5.7%	37.13
Desert	107,581	10.4%	3,802,399	16.4%	35.34
Greater Ridgecrest	45,900	4.4%	704,727	3.0%	15.35
Greater Cal City/Mojave	21,378	2.1%	1,761,599	7.6%	82.40
Greater Rosamond	40,302	3.9%	1,336,073	5.8%	33.15
Kern County Total	1,034,465	100.0%	23,119,977	100.0%	22.35

*Population is the total household population plus employment by work location; does not included group quarters and prisons

Key Points

- High Level of Public Participation – With Emphasis on Co Benefits
- Source of Kern's Increase: Strategic Employment Growth often in EJ Communities
- Consider Statewide Model for Beyond Model Travel (Inter-region travel)
- Alternatives: Reducing from 13.6 to 9.8lbs/capita is ambitious for the first round of target setting including Pavley/LCF.
- VMT Progress Tracking: feedback allows communities/regions to adjust strategies based on observed data

Comments? Contacts:

- Kern COG contact Rob Ball or Troy Hightower (661) 861-2191

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www.kerncog.org Climate Change
Menu

Additional Slides

Planned Model Improvements

- Fuel Cost
- Long Range Transit Plan Update
- SB 84 San Joaquin Valley Model Improvement Plan
 - Statewide Model for Interregional Migration
 - Housing income/ Employment wage balance
 - Feedback loop between VMT and Land Use Model – Optimum mix

Definitions

- SCS – Sustainable Community Strategy is a land use scenario based on reasonable planning assumptions
- APS – Alternative Planning Strategy is a land use scenario need to meet SB 375 goals and differs from latest assumptions
- Baseline/Current Trends – 2005, 2020, & 2035 scenarios based on last adopted General Plans & RTP (July 09)

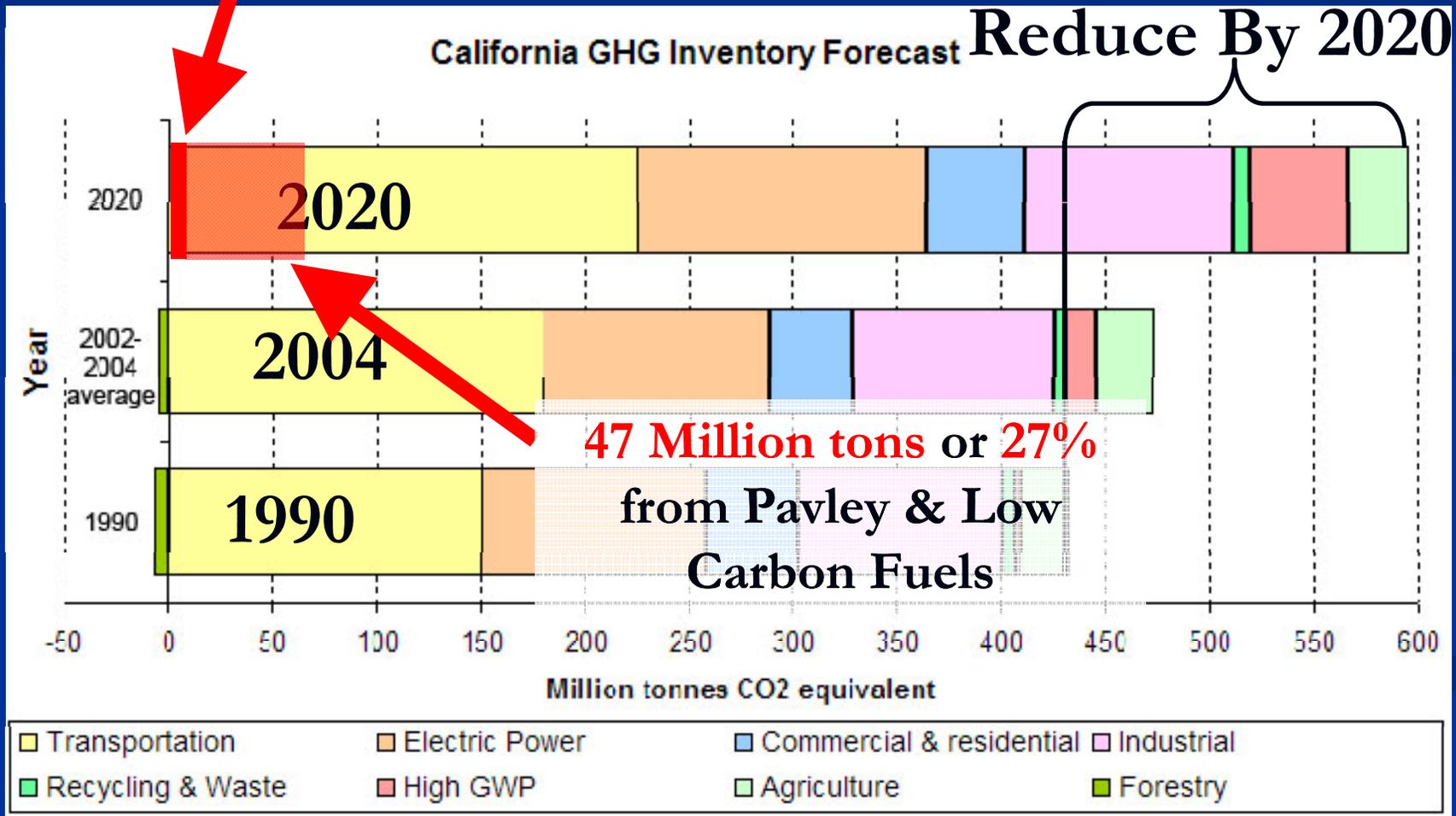
Definitions (contd.)

- Proposed Alternative to Current Trends (ACT) Scenario – Improvement in CO2 reduction using latest assumptions
- Performance Measures – Output or derived data from model scenarios
- XX – External to External or through county trips
- IXXI – Internal to External and External to Internal or out of county trips

Definitions (contd.)

- RTAC – California Air Resources Board Regional Target Advisory Committee created a report that governs the process and methodology for SB375.
- RTP – Regional Transportation Plan – Long range transportation plan for a region prepared by a COG.
- Conformity – Federal process for complying with federal clean air standards. CO₂ is not yet a federal pollutant.

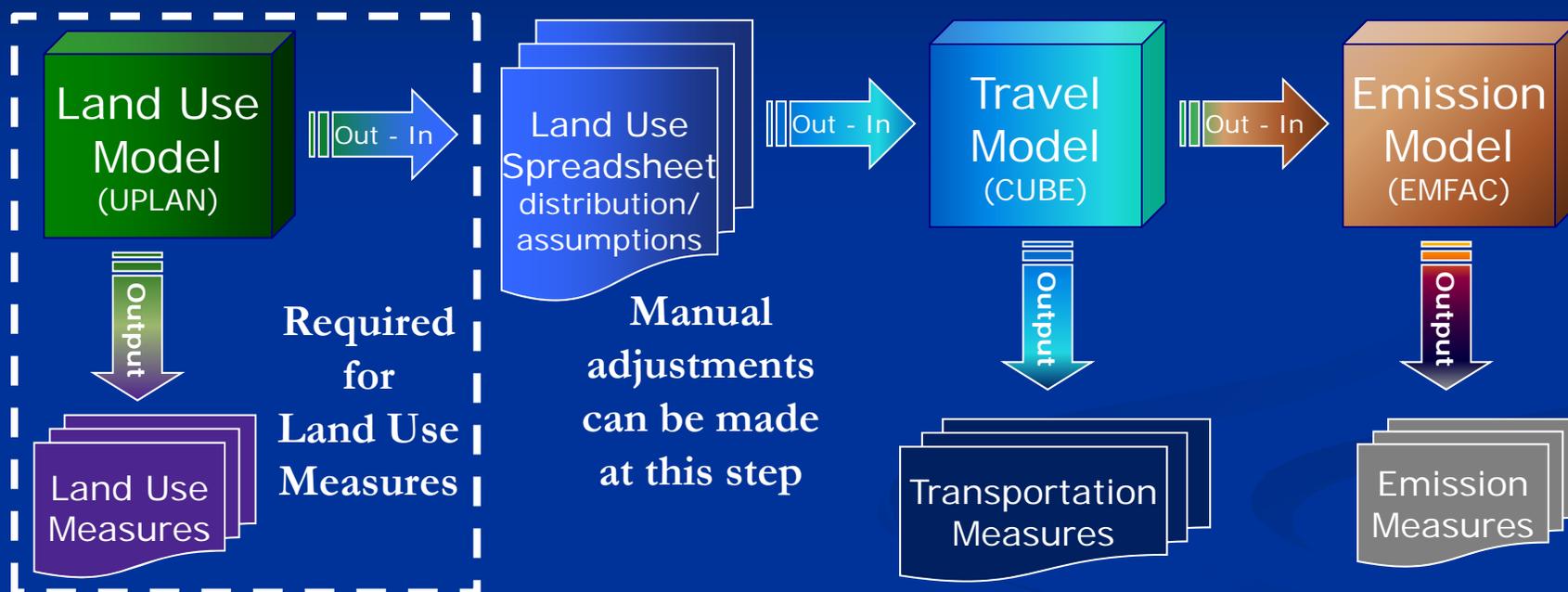
SB375 5 Million tons or 3 % of all CO₂e reductions
 Place-
 Holders are expected from passenger vehicle travel
 AB32



(Source: Cal Air Resource Board Climate Change Scoping Plan, p. 17)

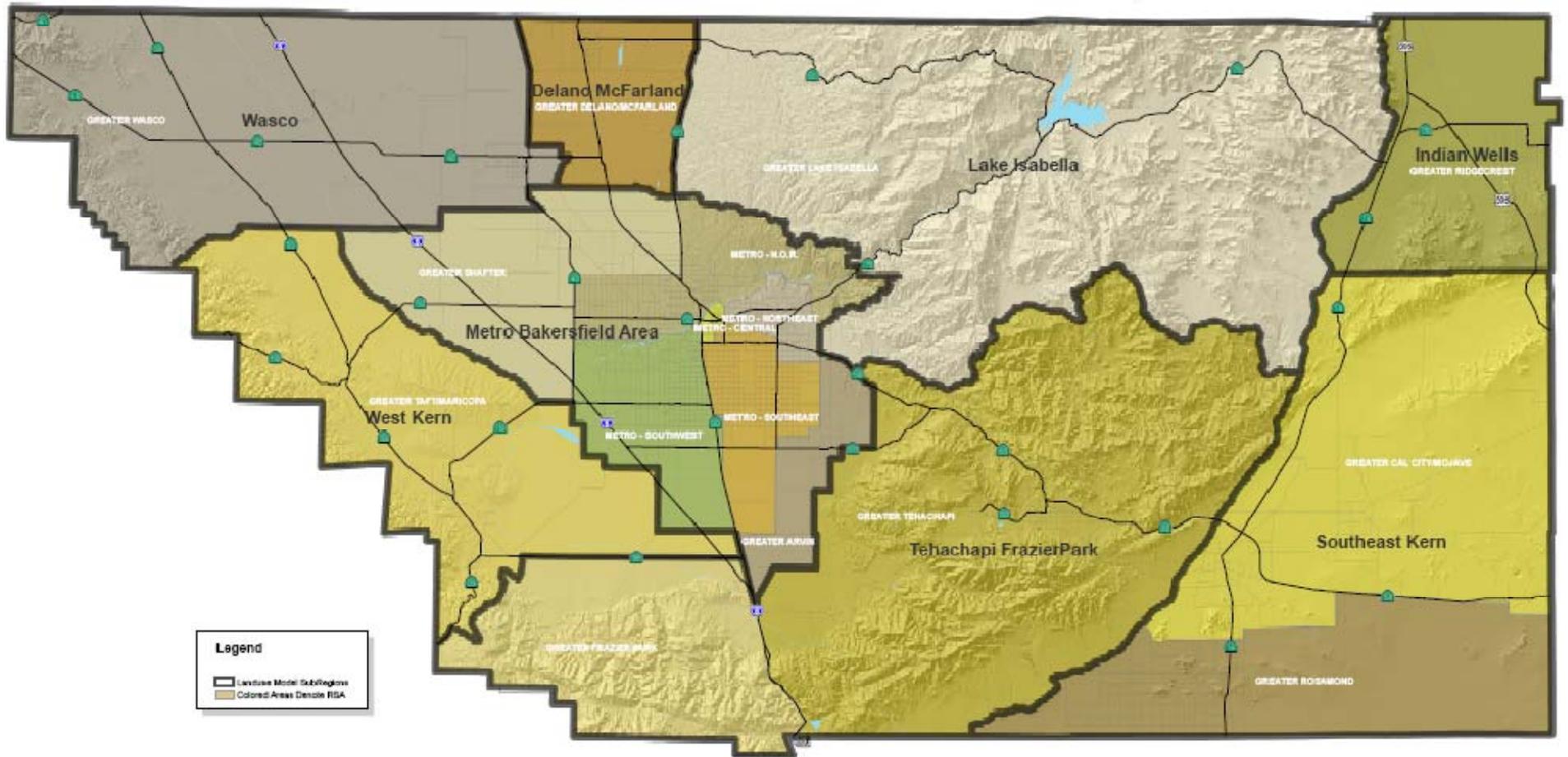
Modeling Flowchart

Sustainable Community Strategy - SCS



- Land Use Model step needed for land use measures related to density (ie. acres of resource areas consumed by urban growth)
- Land Use Measures help support CO2 Target Proposal

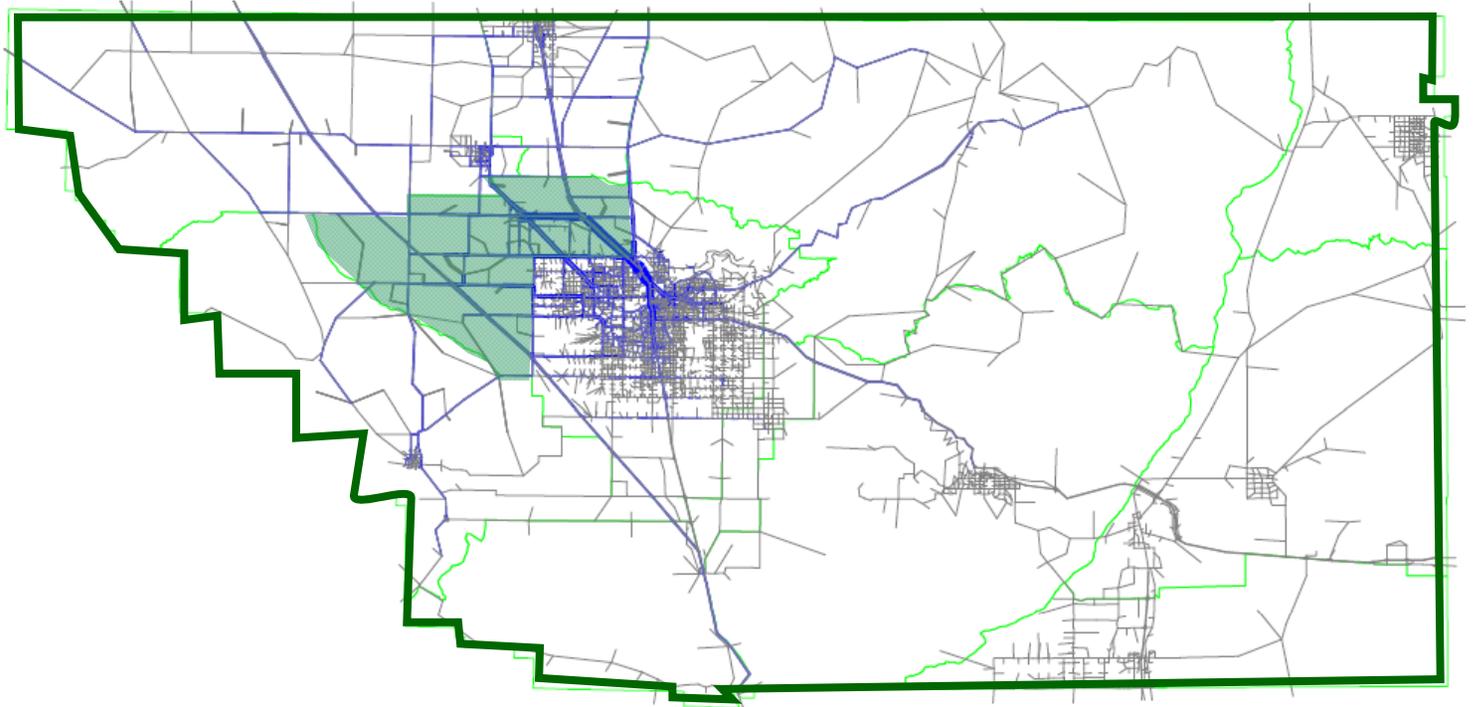
Tracking Progress By Greater Community Areas or RSAs



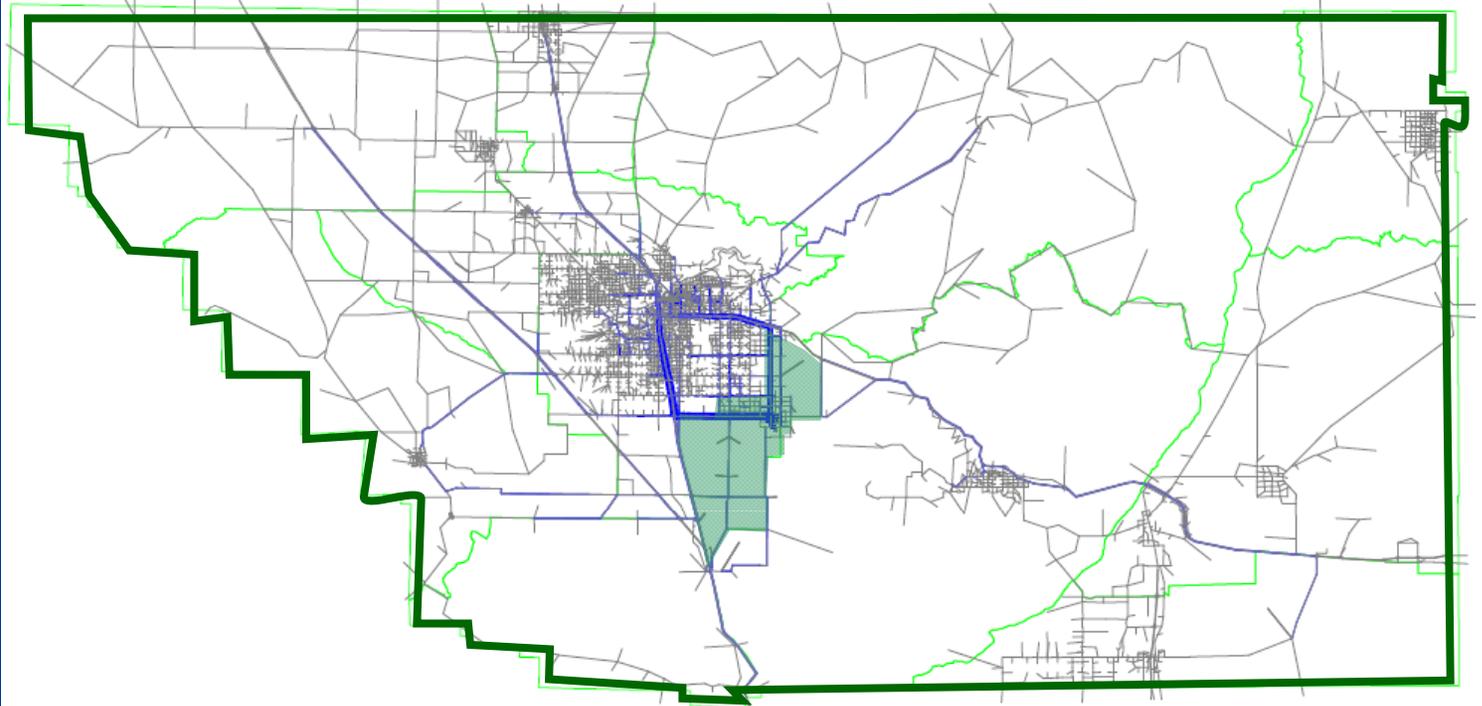
Earthtone colored areas represent 16 Regional Statistical Areas (RSAs)
Dark boundaries represent Land Use Model Sub Areas (LUMSAs)

2006 Travel

Shafter
38.6 VMT/
Pop+Emp

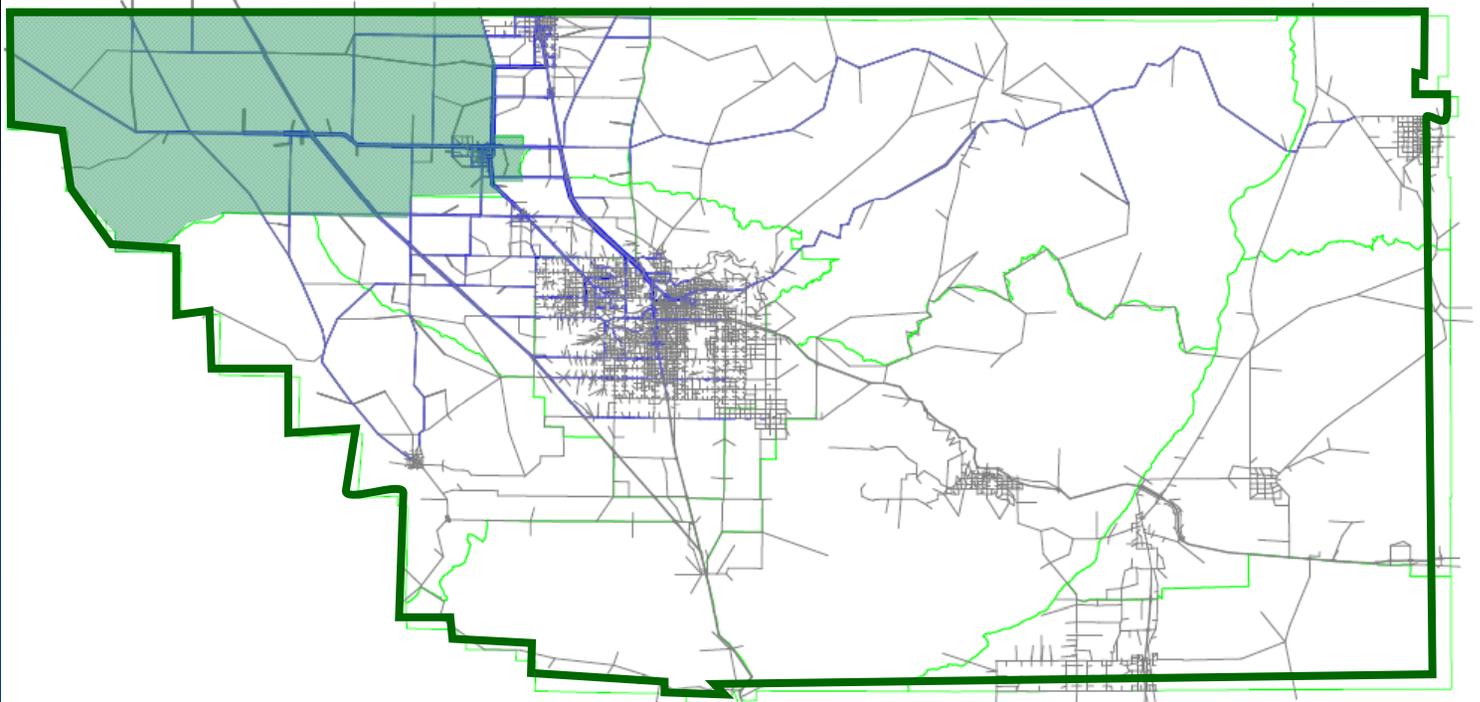


Arvin
31.3 VMT/
Pop+Emp

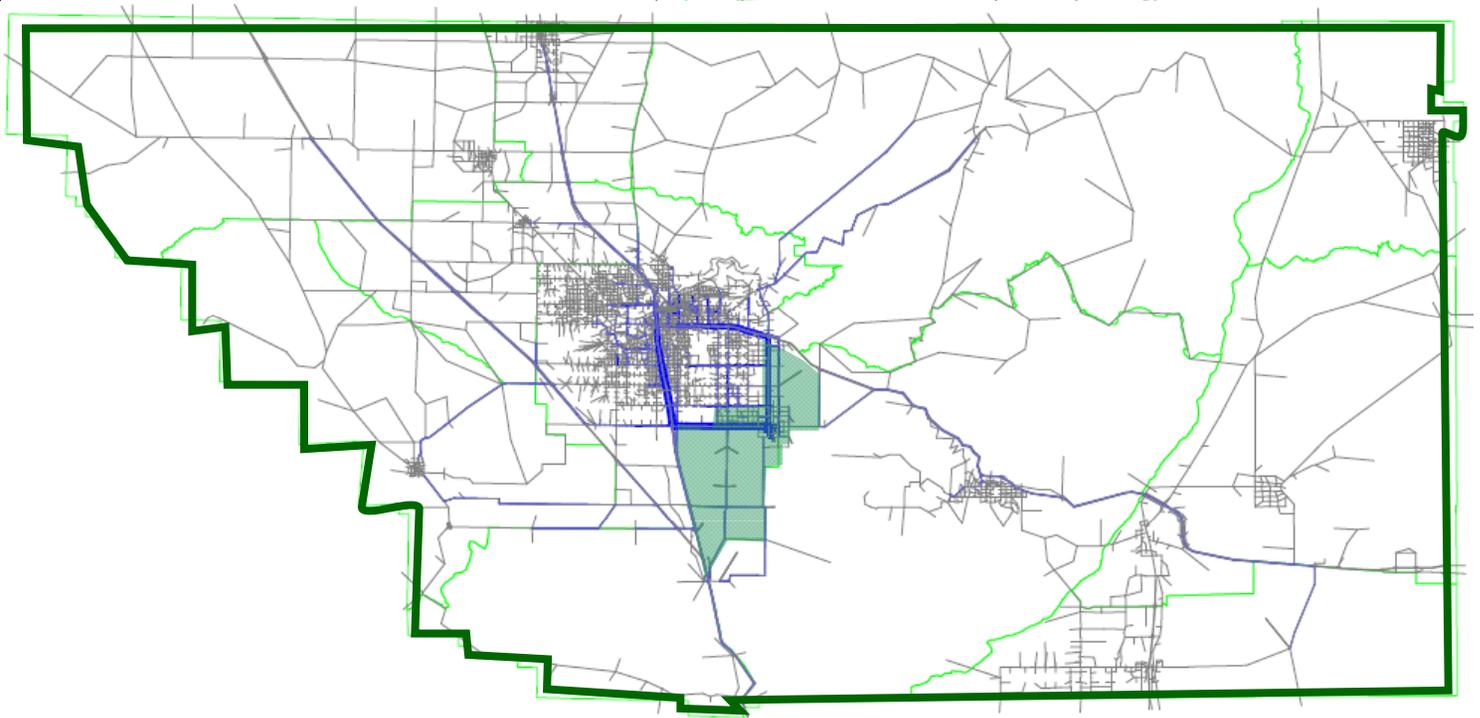


2006 Travel

Wasco
36.5 VMT/
Pop+Emp

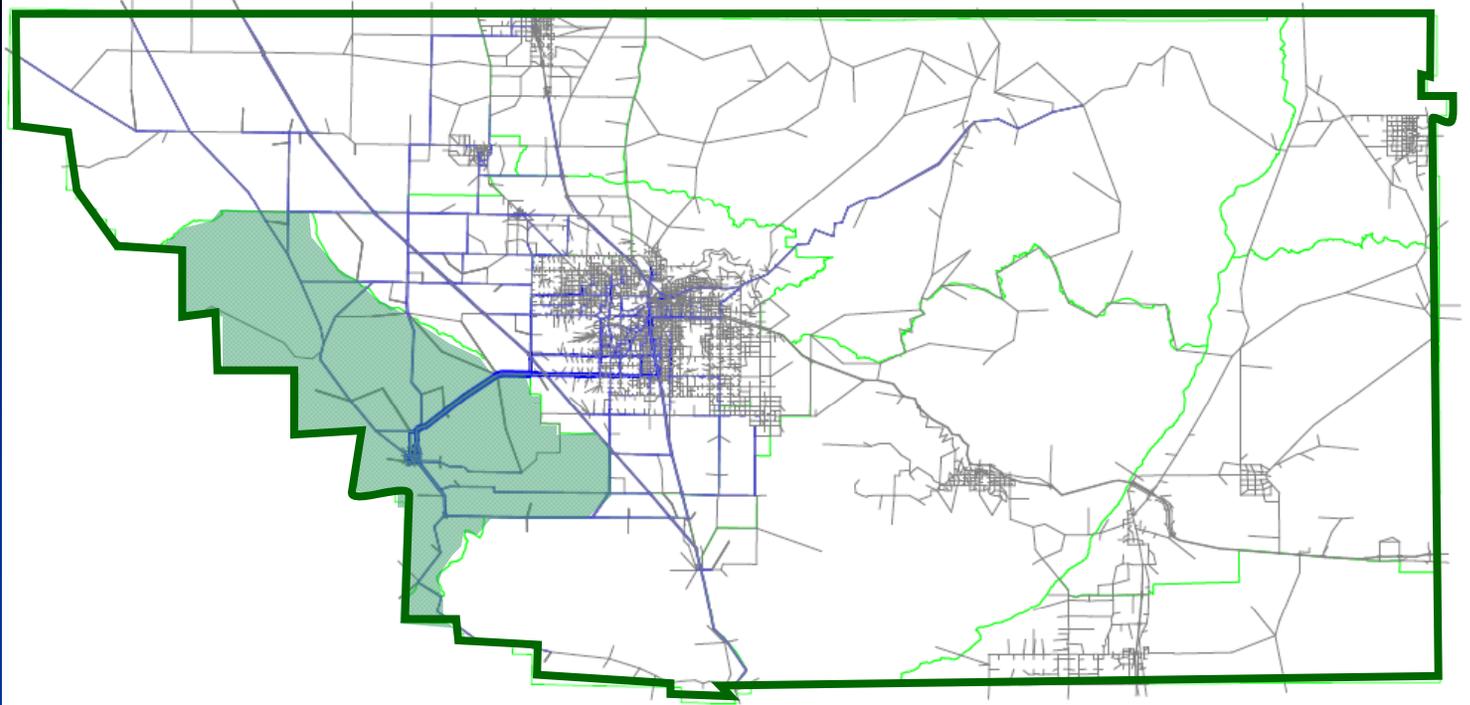


Arvin
31.3 VMT/
Pop+Emp



2006 Travel

Taft/
Maricopa
32.0 VMT/
Pop + Emp



Rosamond/
Edw. AFB
33.2 VMT/
Pop + Emp

