

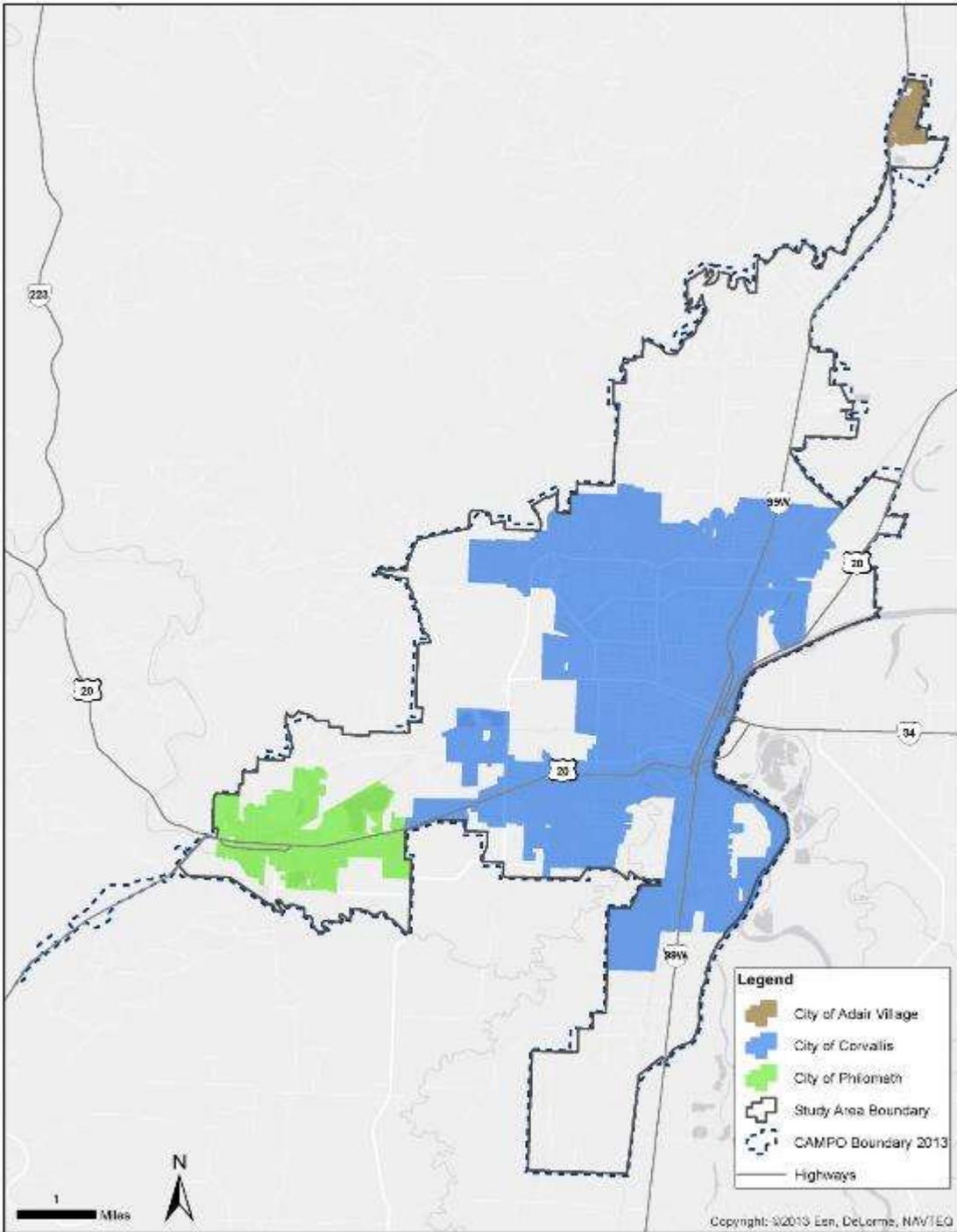
# **Greenhouse Gas Emission Reduction**

Corvallis Area MPO

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# CAMPO's Planning Area



# Background



- ❖ In 2007 Oregon Legislature required reducing GHG emissions by 75% from the 1990 level by 2050
- ❖ HB2001 (2009) and SB 1059 (2010) directed ODOT to develop Oregon Sustainable Transportation Initiative (OSTI) and Statewide Transportation Strategy (STS)
- ❖ ODOT and DLCD worked with MPOs to develop Guidelines, Targets and Tools for MPOs.
- ❖ Portland Metro and Eugene were required to perform Scenario Planning for GHG Reduction

# Resources



- ❖ State developed GHG Emission Model (GreenSTEP-RSPM), provided fund and expertise.
- ❖ CAMPO deliberated the issue and evaluated all benefits and encumbrances of the task.
- ❖ CAMPO volunteered to undertake GHG Emission Reduction Planning

# Phase I - Strategic Assessment

- ❖ GHG Emission of all current policies and plans in place, if implemented by 2035
- ❖ About 37% of GHG in Oregon comes from the Transportation Sector
- ❖ CAMPO provided local land use, transportation data (current & projected)



# Strategic Assessment Model (RSPM)

## Inputs

Regional Context  
Vehicles & Fuels  
Pricing  
Parking Policies  
Alternative Modes  
Community Design  
Marketing & Incentives

1. Create MPO Households
2. Estimate Daily VMT



3. Add Vehicles & Estimate Greenhouse Gas Emissions

## Outputs

Environment

- Greenhouse gases
- Air quality

Land Use

- Mixed Use

Mobility

- Vehicle miles traveled

Economy

- Travel costs
- Travel delay

# SA Key Findings:

## Finding #1 – Greenhouse gases per capita decline

Output	2010	2035	% Change
Annual GHG emissions per capita from light vehicles including reductions from vehicle changes (metric tons)	2.2	0.9	-61%
Reduction in GHG emissions per capita	n/a	n/a	Adopted Plans: 2.1% Adopted Plans + State: 18.5%

### Key Factors:

- Vehicle fuel efficiency
- Fuel price

## SA Key Findings:

### Finding #2 –

Transportation energy use is expected to decline, significantly

### Key Factors:

- Cleaner vehicles and buses
- Fareless transit

Output	2010	2035	% Change
Annual fuel consumption per capita (gallons)	374	173	-54%
Annual vehicle miles per gallon	24	54	122%



## SA Key Findings

**Finding #3** – Vehicle miles traveled increase slightly

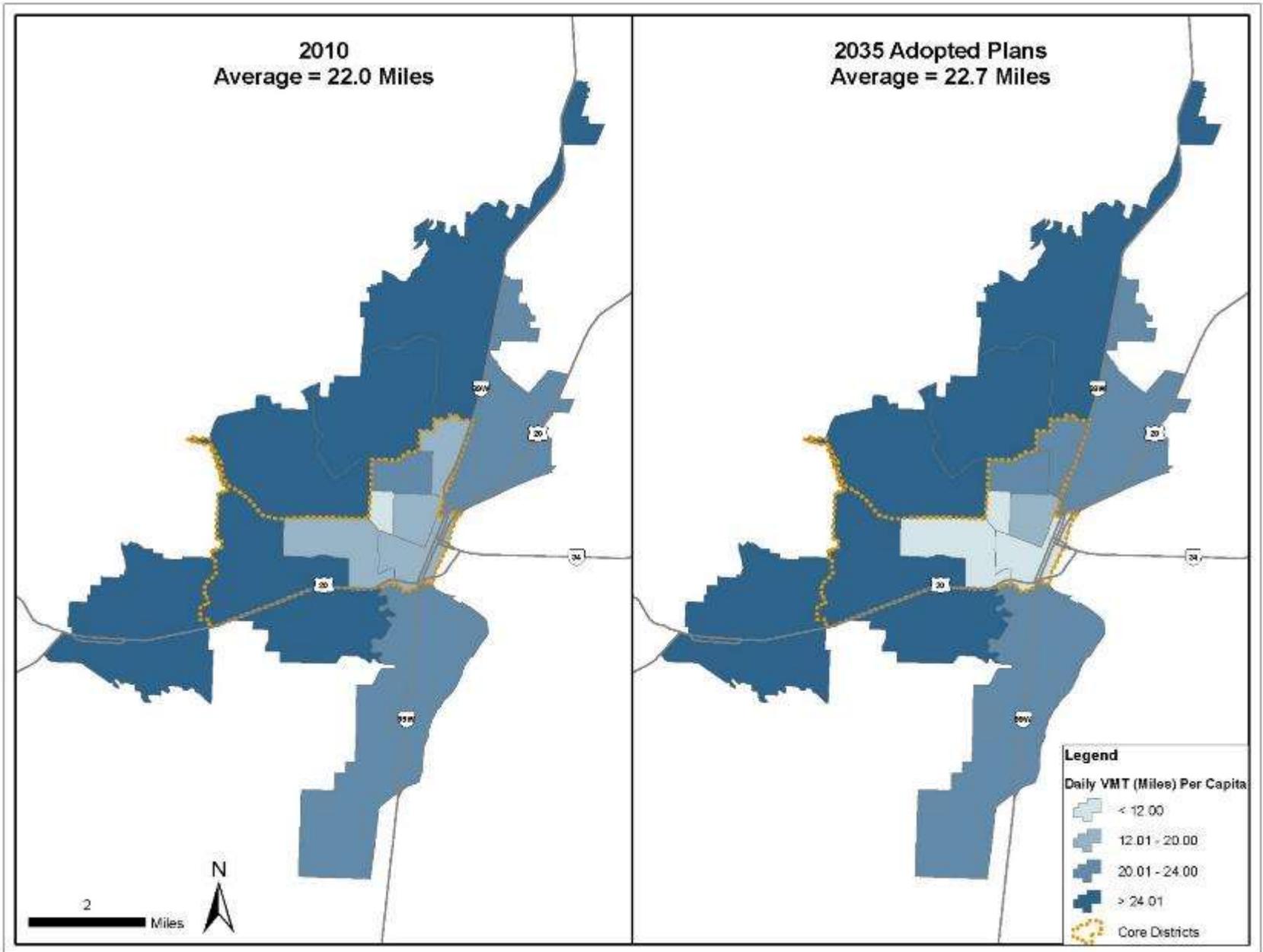
**Key Factors:**

- Income growth
- Vehicle fuel efficiency
- Fuel price

Output	2010	2035	% Change
Household daily vehicle miles traveled per capita	22.0	22.7	3%



# Daily Vehicle Miles Traveled Per Capita



## SA Key Findings:

**Finding #4** – Household transportation costs are likely to increase

**Key Factors:**

- Shift to new vehicles with shorter turnover
- Fuel efficiency offset by fuel price increase
- Parking costs

Output	2010	2035	% Change
Annual household vehicle operating costs (fuel, taxes, parking)	\$2,369	\$2,684	13%
Annual household vehicle ownership	\$5,975	\$7,198	20%



## SA Key Findings:

**Finding #5** – Public health is likely to improve

### Key Factors:

- Cleaner vehicles
- Local efforts related to walking and bicycling
- Walk to transit
- Safer vehicles

Output	2010	2035	% Change
Clean Air Act criteria pollutants (millions kilograms per day)	17.7	7.1	-60%
Annual walk trips per capita	131	134	2%
Daily miles traveled by bicycle per capita	0.4	0.5	35%

# SA Key Findings

**Finding #6** – Social costs from driving are likely to decline

**Key Factors:**

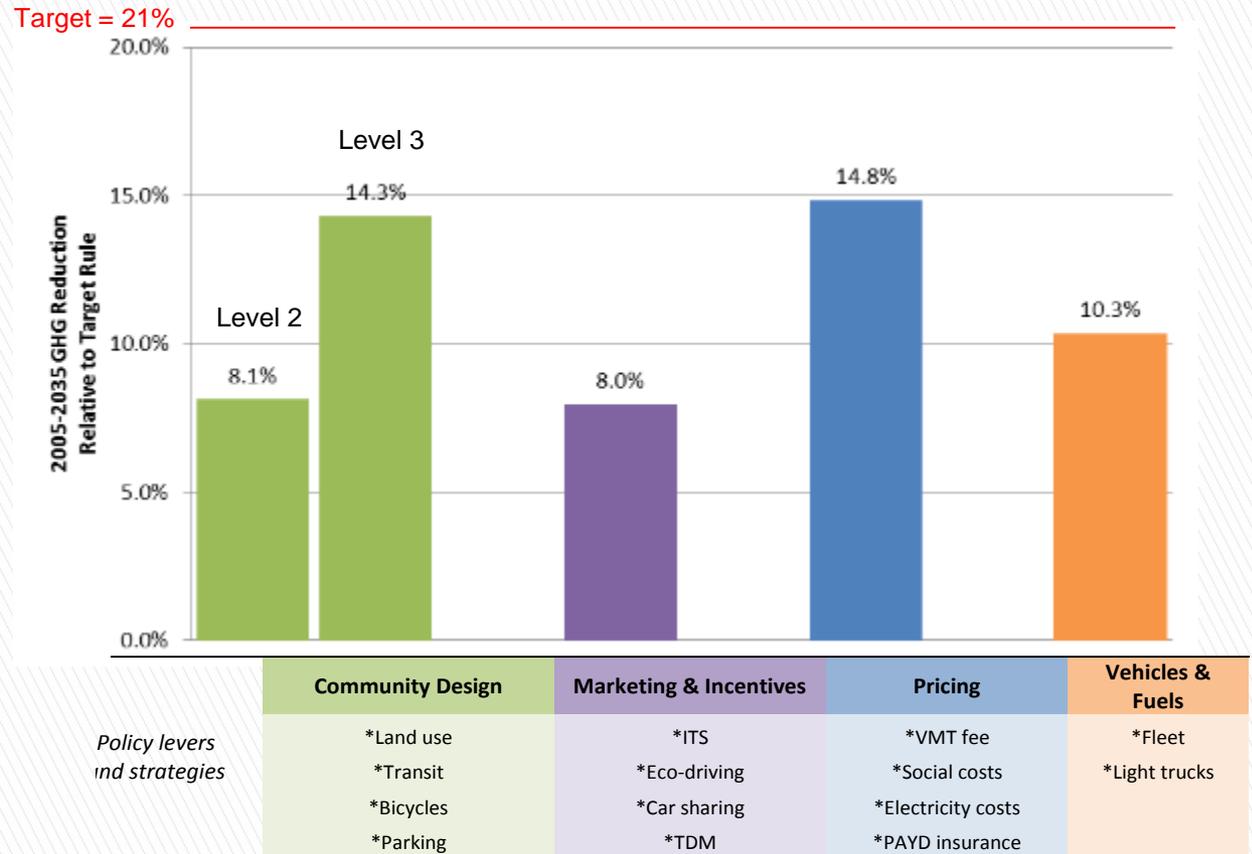
- Cleaner vehicles
- Safer vehicles
- Less noise, water pollution

Output	2010	2035	% Change
Annual external social costs per capita (unpaid)	\$1,062	\$819	-26%



# SA Key Findings

**Finding #7 –**  
 Reaching the target is feasible and requires combinations of strategies



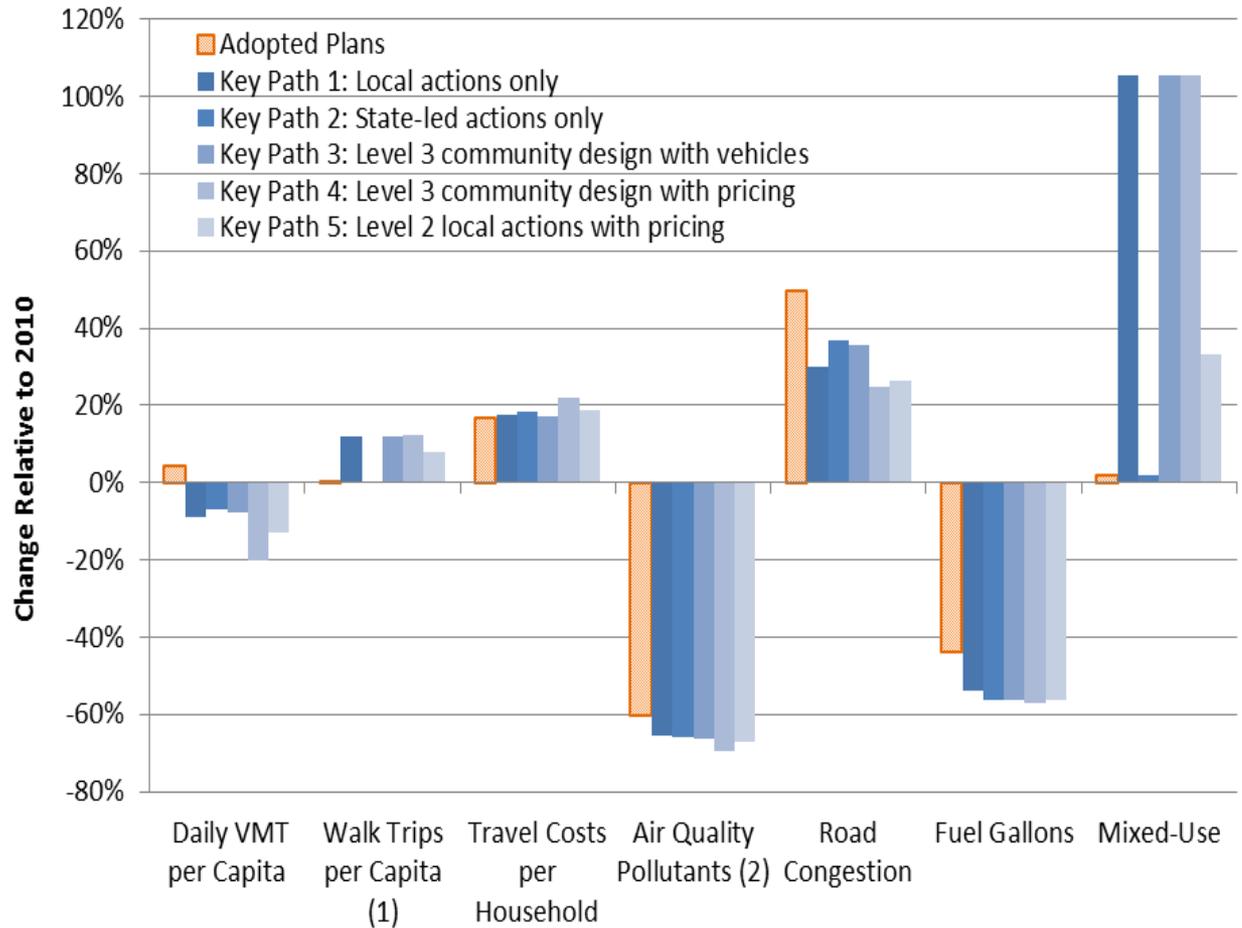
# SA Key Findings

**Finding #8 –**  
Changes to pricing or ambitious changes to vehicles and fuels are critical

	Local Actions		State-Led Actions		GHG Reduction Target = 21%
	Community Design	Marketing & Incentives	Pricing	Vehicles & Fuels	
Key Path 1 =	 Level 3	 Level 2			19.1%
Key Path 2 =			 Level 2	 Level 2	21.2%
Key Path 3 =	 Level 3			 Level 2	21.2%
Key Path 4 =	 Level 3		 Level 2		24.9%
Key Path 5 =	 Level 2	 Level 2	 Level 2		23.0%
<i>Policy levers and strategies</i>	Community Design *Land Use *Transit *Bicycles *Parking	Marketing & Incentives *ITS *Eco-driving *Car sharing *TDM	Pricing *VMT fee *Social costs *Electricity costs *PAYD insurance	Vehicles & Fuels *Fleet *Light trucks	

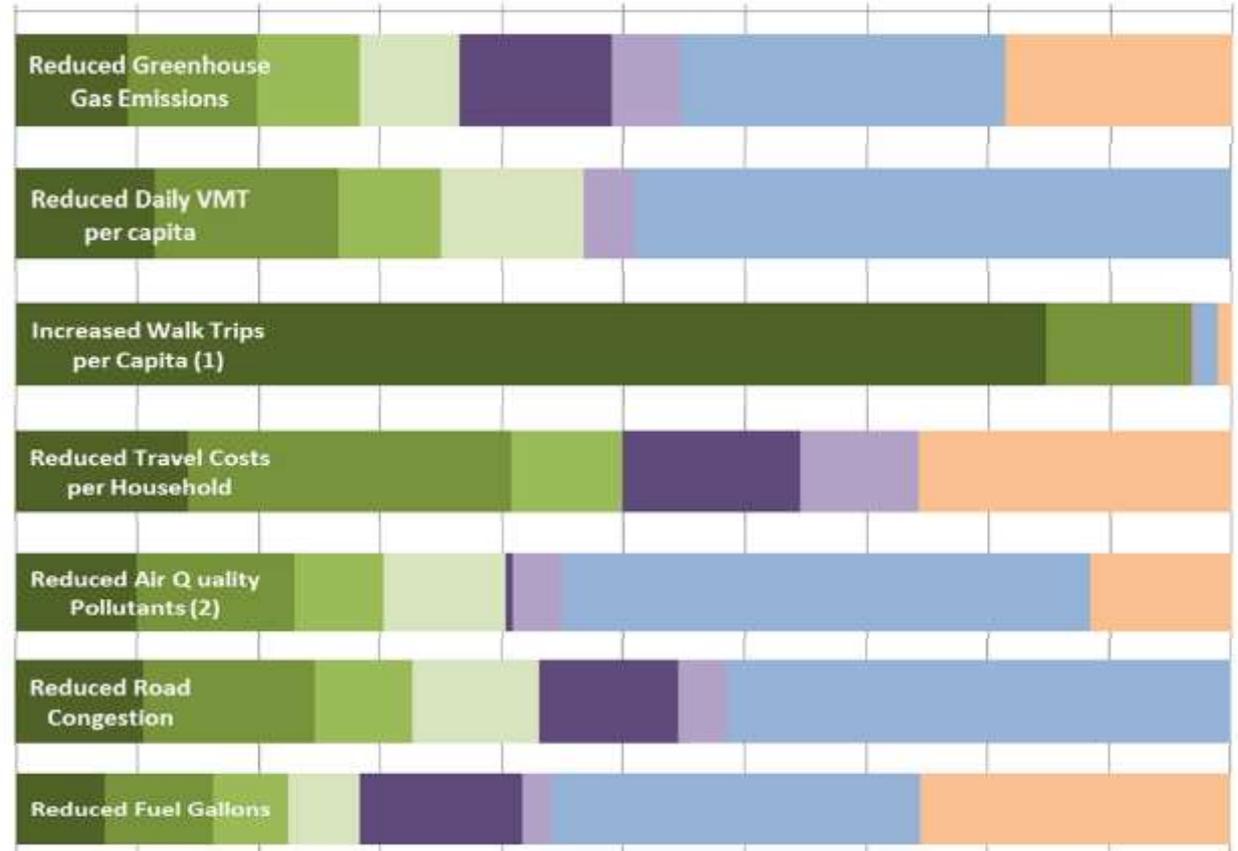
# SA Key Findings

**Finding #9 –**  
The region has multiple options to consider



# SA Key Findings

## Finding #10 – The region has multiple options to consider



### Community Design:

- Land Use
- Transit
- Bicycles
- Parking

### Marketing & Incentives:

- Driving Efficiency / ITS
- Demand Management / C

### Pricing:

- Pricing (VMT, PAYD, Soci

### Vehicles & Fuels:

- Vehicles / Fuels (3)

# Phase II - Scenario Analysis

- ▶ **Purpose** - What are the land use and transportation decisions that would get us to our target
- ▶ **Approach** - Worked with planners and leaders to identify community issues and values
- ▶ **Scenarios:**
  - Increase/decrease density in central area
  - Increase investment in alternative modes
  - New developments in form of Mixed Use
  - Increase Parking Management and Fee
  - Home-based & work-based marketing
  - car share program



# Scenario Planning

- ▶ Scenario's will be evaluated by for yardsticks
  - GHG Emission Reduction
  - Public Health
  - Equity
  - Sustainability



- ▶ CAMPO demonstrated a small MPO can partner with a large agency to perform a big project.
- ▶ Helped other MPOs to voluntarily engage in the process.

# Questions?



▶ Comments?

# Key Findings in 2035



- ▶ GHG per capita declines(2.2%-18.5)
- ▶ Transportation energy use is expected decline significantly, (%)
- ▶ Per capita VMT will increase slightly
- ▶ Household transportation cost will increase(13%)
- ▶ Public Health will likely improve
- ▶ Social cost of driving will likely decline
- ▶ Reaching target is feasible and requires combination of strategies
- ▶ Change to pricing or ambitious change to technology and fuel are critical
- ▶ The region has multiple options to consider