

Greenhouse Gas Reduction Target

Summary data from the March 1st, 2011
ODOT, ODOE, ODEQ Agencies' Technical Report

Proposed Metropolitan
GHG Reduction Rule

Latest version: 4/1/11

- Focus is on light vehicles (10,000 lbs or less)



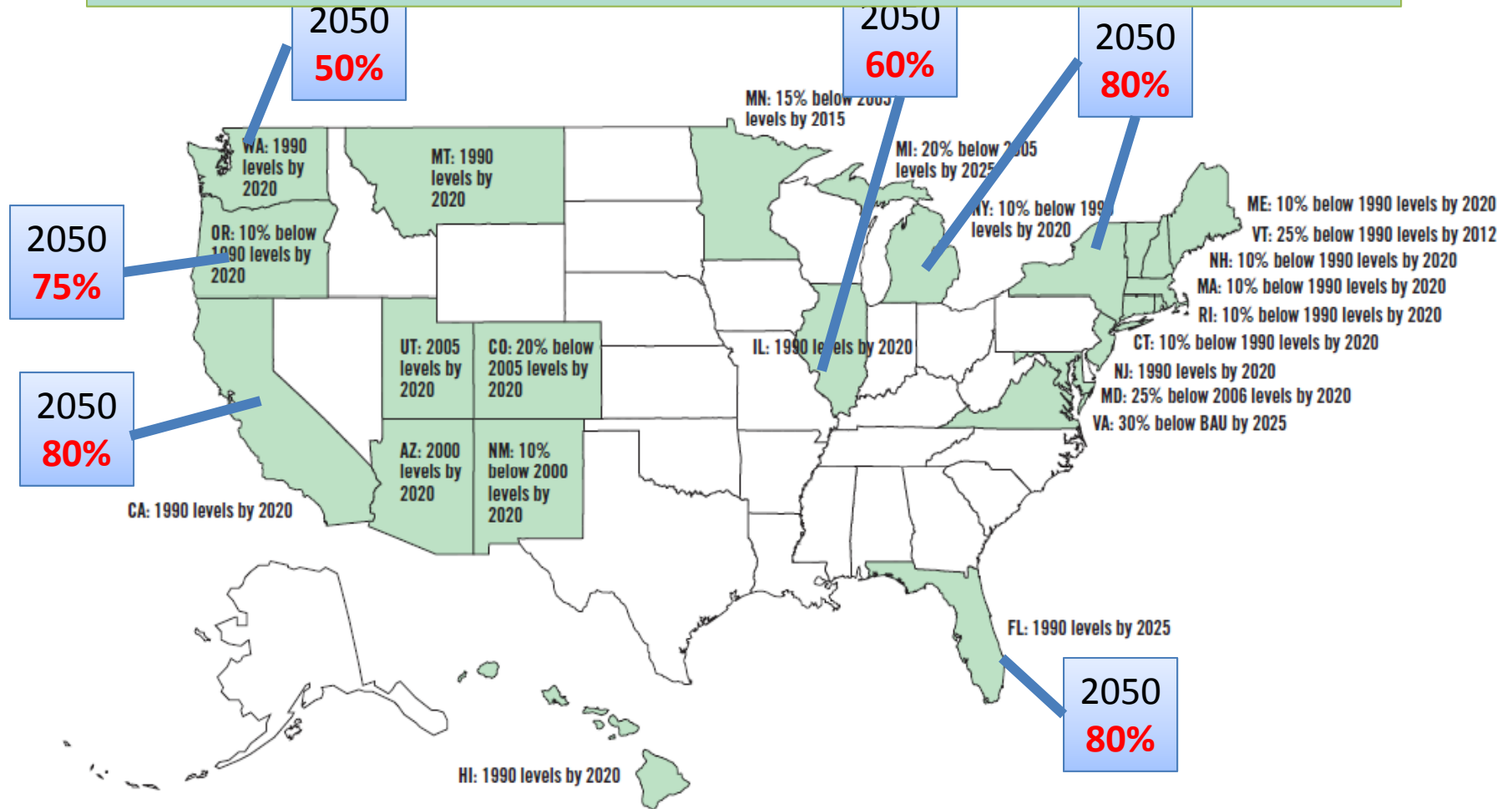
- Large trucks to be covered by Statewide Transportation Strategy
- GHG from other sectors (energy/utilities, buildings, industry, forestry, agriculture, materials and waste management) are being reviewed by sub-committees of the Oregon Global Warming Commission



Oregon
Sustainability
Board

GHG Targets by State (2020 & 2050)

2020 Targets vary: obtain 1990/2000 levels or 10% below 1990 levels



Year	Statewide Goals (reduction from 1990 GHG levels)	
2020	10%	
2035	52%	← <u>Agency Technical Report</u> recommendation
2050	75%	

2020 & 2050 goals – House Bill 3543 (2007), House Bill 2001 (2009), Senate Bill 1059 (2010)

1990 to 2035 percent reduction varies by MPO area, depending on travel characteristics

- When population is growing, per capita reductions have to be larger than goal reduction.
- Landfill example:

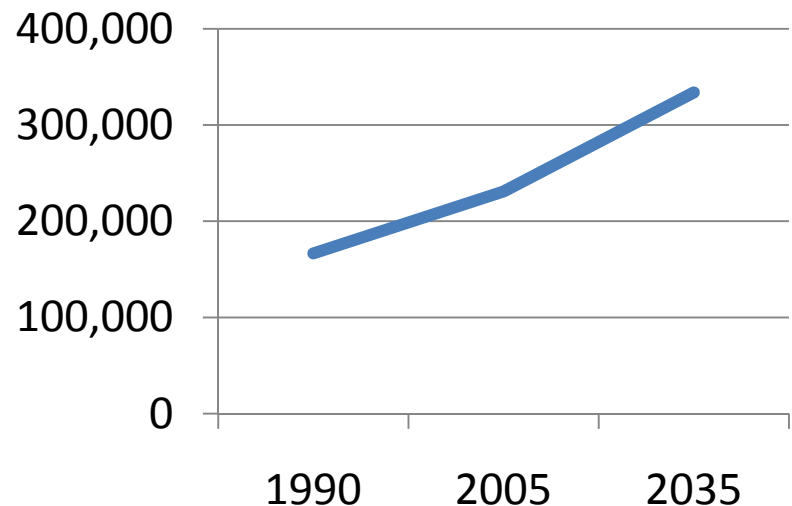
Year	Population	lbs garbage per person per year	Total waste entering landfill (lbs.)
2010	10,000	1000	10,000,000
2030 BAU	15,000	1000	15,000,000
2030 (meeting goal)	15,000	333	5,000,000
so per capita reduction is:		67%	

Goal:
Reduce
entering
waste
by 50%

When calculating future GHG reductions, you need to consider population growth

SKATS area Population*

- 1990 – 166,000
- 2005 – 231,000
- 2035 – 334,000





* Agency Technical Report values

GHG emissions per capita target for SKATS area

	1990	2035	Change
Metric Tons CO ₂ _e /yr	625,000	319,000	- 49% <i>(close to the 52%)</i>
Population	166,000	334,000	+ 101%
MT CO ₂ _e /person/yr	3.75	0.96	- 74%



Emission estimates based on Vehicle Technology, Carbon Intensity of Fuels, and Composition of Fleet (from GreenSTEP)

Year	GHG Emission Rates in SKATS (grams CO ₂ _e per mile)
1990 vehicles	596* 
2035 vehicles	170 – 244 (177 assumed in rule**) 

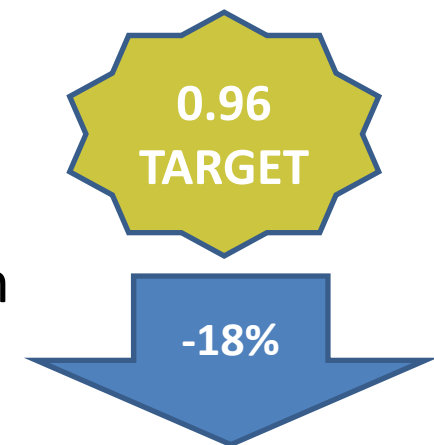
***510** (year 2005)

** Represents Tech Level 3, Fleet Level 3 – See draft rule for specifics

- Assume 2035 vehicle emissions are **177 g/mile** of CO₂e (medium technology)
- VMT/capita for 2035 is assumed to be the same as 2005 (**17.8 miles/capita**)
- VMT includes all travel (internal & **external**) within the metropolitan area
- **Result: ~1.2 Metric Tons/capita/yr within SKATS area**

To reach the 2035 goal, emissions need to be 0.96 MT/person/yr

18% “additional reduction” needed, based on 2035 vehicle/fleet/fuels assumption



“Additional GHG Reduction”: Where would that come from?

Combination of:

1. **Land uses and transportation** projects/programs that promote shorter trips, walking and biking (e.g. Safe Route to Schools)
2. **Reduce traffic congestion** (fix “bottlenecks”, traffic signal coordination, ramp meters, etc.)
3. Increase urban area and inter-city **transit**
4. **Other statewide strategies** (pricing, demand management, pay-as-you-drive-insurance, eco-driving, etc.)
5. Push for **additional technology-fuels-fleet** solutions

Metropolitan Area
Scenario Planning

Statewide
Transportation Strategy

ISSUES and CONCERNS

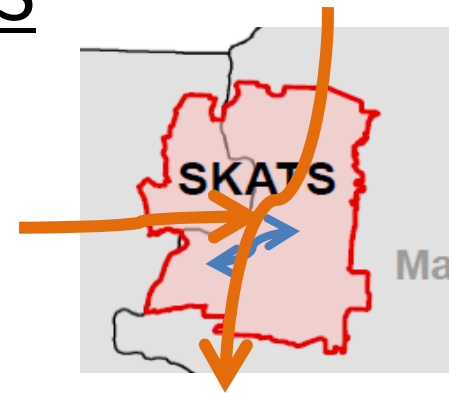
1. Methodology, Targets and Rule are complex and difficult to explain to the public

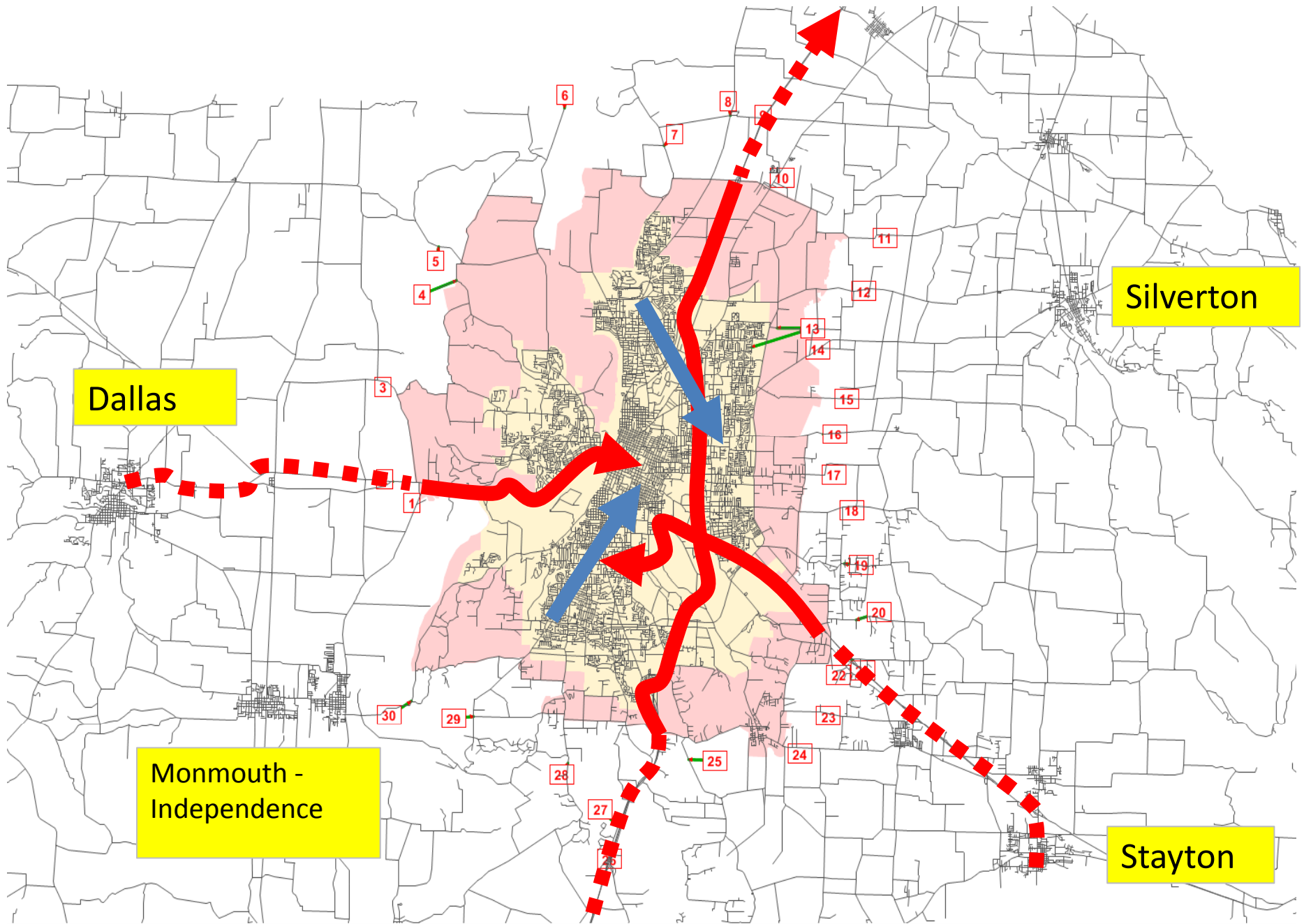
2. SB1059: Deadline for LCDC to adopt targets is **June 1, 2011**.
 - March 30th TRAC meeting to make recommendation on rules & targets to LCDC
 - DLCD has noticed only one Public Hearing (on **April 21st**). Second hearing uncertain.
 - Proposed rule includes a review of targets in 2015 and every 4 years afterwards.

ISSUES and CONCERNS

3. As designed by SB1059, metro area emissions include **GHG from external trips:**

- About 55% of the VMT within SKATS come from external trips
- Concern is that external trips are largely beyond the control of local strategies
- In California, they allow consideration for different treatments for inter-regional trips





VMT by Origin-Destination

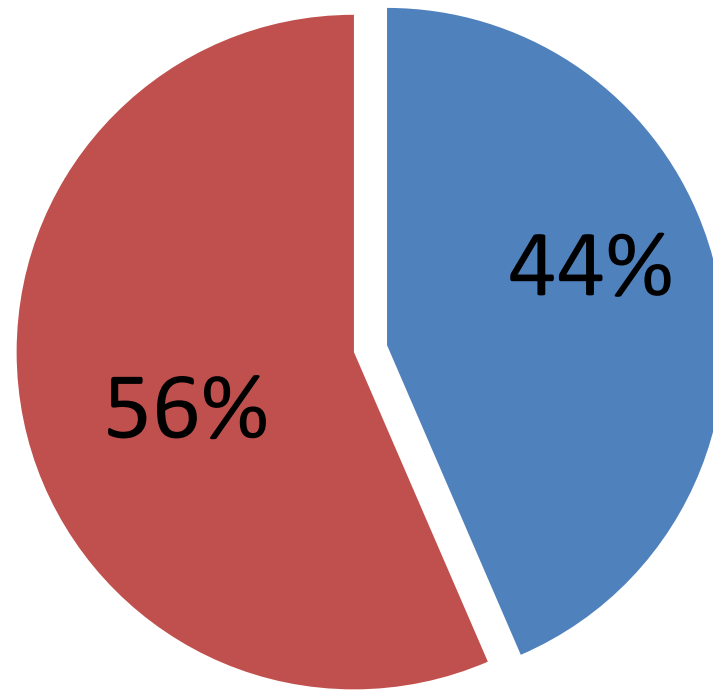
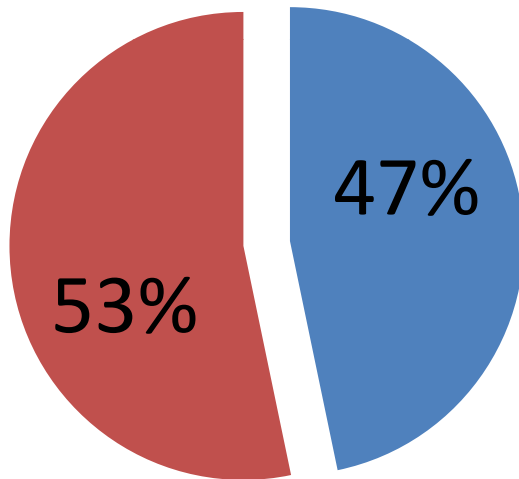
(light vehicles only)

2035

Daily VMT = 6.2 million miles/day

2005

Daily VMT = 4.1 million miles/day



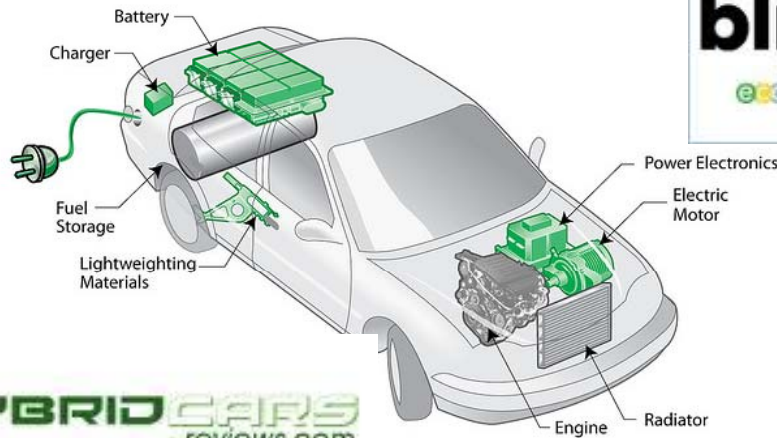
- Both trip-ends internal
- One/two trip-ends external

ISSUES and CONCERNS

4. Other potential Statewide Transportation Strategies (pricing, pay-as-you-drive insurance, i.e. “missing piece of the pie”) needs to be part of the rule. Added by TRAC at March 30th meeting
5. Additional Reductions of 26% to 30% would be **highly aggressive** if they are to be reached primarily through a land use and transportation scenario.

Next Steps

- TRAC Meeting: March 30th
 - Recommend targets to LCDC and other changes to proposed rule
- April 21st LCDC Hearing on Rule
- May 19th LCDC Meeting
 - Unsure if there will be 2nd public hearing for that date
 - Rule adoption
- Scenario Planning Guidelines & Toolkit
- Public Education & Outreach
- Finish Statewide Transportation Strategy (heavy vehicles)
- 76th Legislature – Financing Report
- 77th Legislature – Progress and Recommendations Report
 - (SB1059: “Whether additional actions or a different framework is necessary to carry out the GHG reduction goals set forth in ORS 468A.205”)



HYBRID CARS
- reviews.com



EPA Fuel Economy and
DOT Environmental Comparisons

All Electric (when fully charged)

98 MPGequivalent
34 kW-hrs per 100 mi.

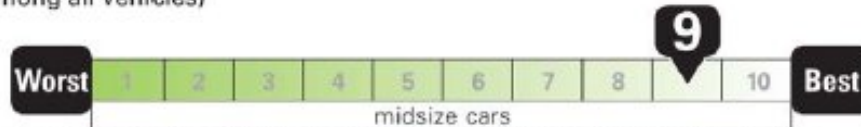
Charge takes **4** hours
Range **30** miles before switching to Gas Mode

Gas Only (when battery is empty)

38 MPG
2.7 gallons per 100 mi.

Annual Fuel Cost **\$847** All Electric and Gas Only combined

Fuel Economy & Greenhouse Gas Rating
(among all vehicles)



Fuel economy for all mid-sized cars ranges from 12 to 103 MPGequivalent. This vehicle gets 56 MPGequivalent.

Your actual mileage and costs will vary with fuel cost, temperature, driving conditions, and how you drive and maintain your vehicle. Cost estimates are based on 15,000 miles per year at \$2.80 per gallon and 12 cents per kW-hr. MPGequivalent: 33.7 kW-hrs = 1 gallon gasoline energy.

Dual Fuel Vehicle:
Plug-in Hybrid Electric

Environment Rating
(among all vehicles)

111 CO₂ grams/mile (tailpipe only)

Other Air Pollutants
★★★★☆
4 out of 5 (5 is best)



Visit www.fueleconomy.gov

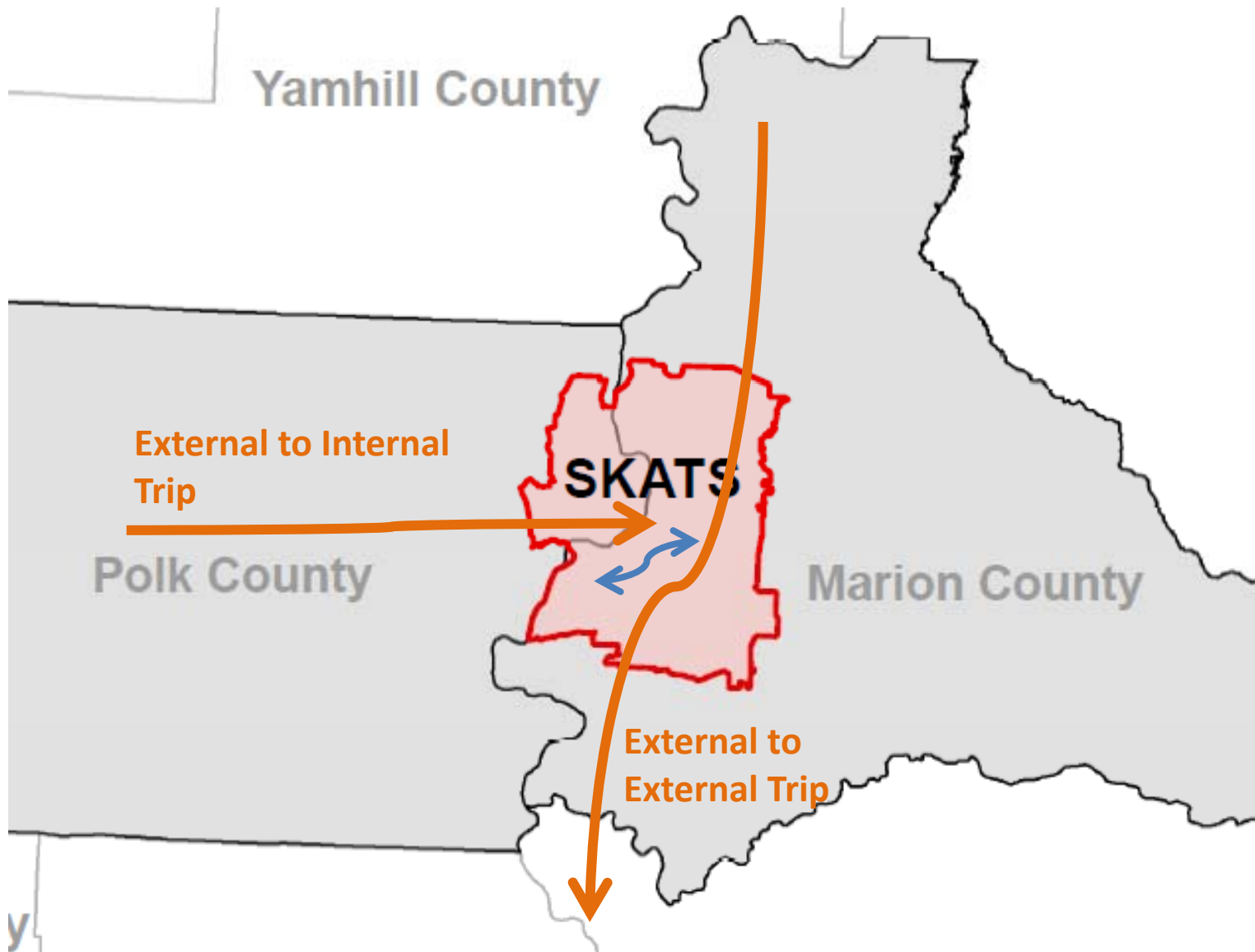
- Calculate personalized driving estimates
- Download the Fuel Economy Guide (also available at dealers)

Smartphone Interactive

Scan code for more information about this vehicle or to compare it with others.



<http://gm-volt.com/2010/08/30/epa-proposes-new-phev-and-ev-fuel-economy-labels-wants-your-comments/>



VMT by Origin-Destination

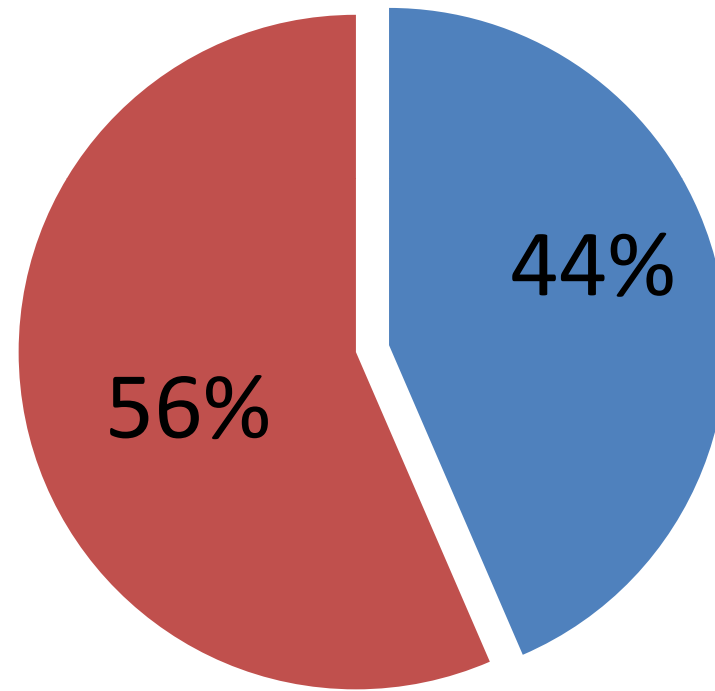
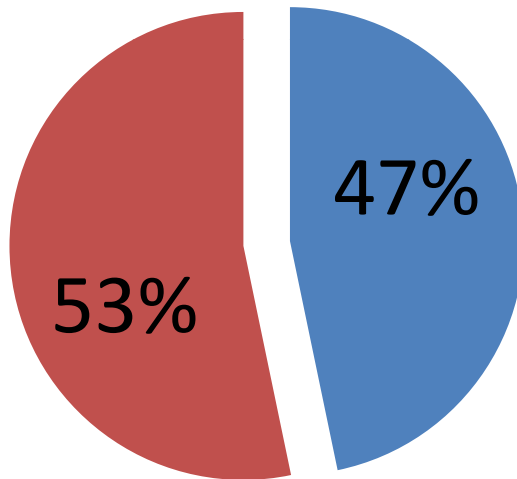
(light vehicles only)

2035

Daily VMT = 6.2 million miles/day

2005

Daily VMT = 4.1 million miles/day



- Both trip-ends internal
- One/two trip-ends external

MPO Comparison

ATR table	Population	Bend	Corvallis	Eugene	Metro	Rogue Valley	SKATS	All MPOs
3	1990 Population	37,800	52,700	197,500	1,062,000	105,000	166,500	1,621,500
A.12	2035 Population	119,600	78,400	298,500	2,110,900	228,100	333,900	3,169,400
	% Increase	216%	49%	51%	99%	117%	101%	95%
Compare Targets by MPO								
A.10	1990 Light Veh. Emissions	156,300	133,600	692,600	4,474,500	431,200	624,700	6,512,900
none	2020 Emissions target (10% below 1990)	140,670	120,240	623,340	4,027,050	388,080	562,230	5,861,610
A.12	2035 Emissions Target	130,000	56,000	256,400	2,235,400	251,800	319,100	3,248,700
none	Reduction 1990-2035	16.8%	58.1%	63.0%	50.0%	41.6%	48.9%	50.1%
A.10	1990 Per capita emissions	4.13	2.54	3.51	4.21	4.11	3.75	4.02
A.12	2035 Per capita emissions	1.09	0.71	0.86	1.06	1.10	0.96	1.03
	Reduction in per capita emissions	73.7%	71.8%	75.5%	74.9%	73.1%	74.5%	74.5%
A.6	2050 Light Veh. Emissions						225,772	
A.9	2050 Target (75% below 1990)						158,583	

2005 SKATS Daily Trip
Totals

	I-I VMT	E-I VMT	I-E VMT	E-E VMT	Total
Num of Trips	496,419	99,808	95,558	46,838	738,624
Percent	67.21%	13.51%	12.94%	6.34%	100.00%

2005

	I-I VMT	E-I VMT	I-E VMT	E-E VMT	Total
Factored Daily VMT	1,928,610	791,685	761,597	645,871	4,127,763
Share of VMT by origin-destination	46.7%	19.2%	18.5%	15.6%	100.0%

2035

	I-I VMT	E-I VMT	I-E VMT	E-E VMT	Total
Factored Daily VMT	2,698,297	1,236,755	1,181,774	1,084,669	6,201,494
Share of VMT by origin-destination	43.5%	19.9%	19.1%	17.5%	100.0%

Percent growth in factored VMT

39.9% 56.2% 55.2% 67.9% 50.2%