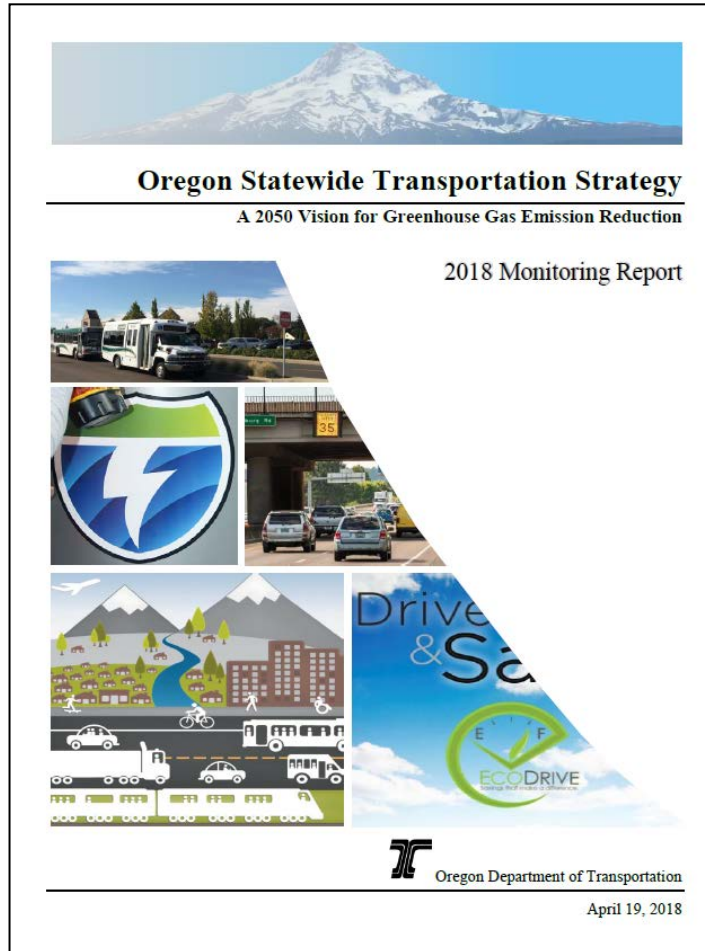


OMUG Agenda

August 22, 2018

Tara Weidner
TPAU, ODOT

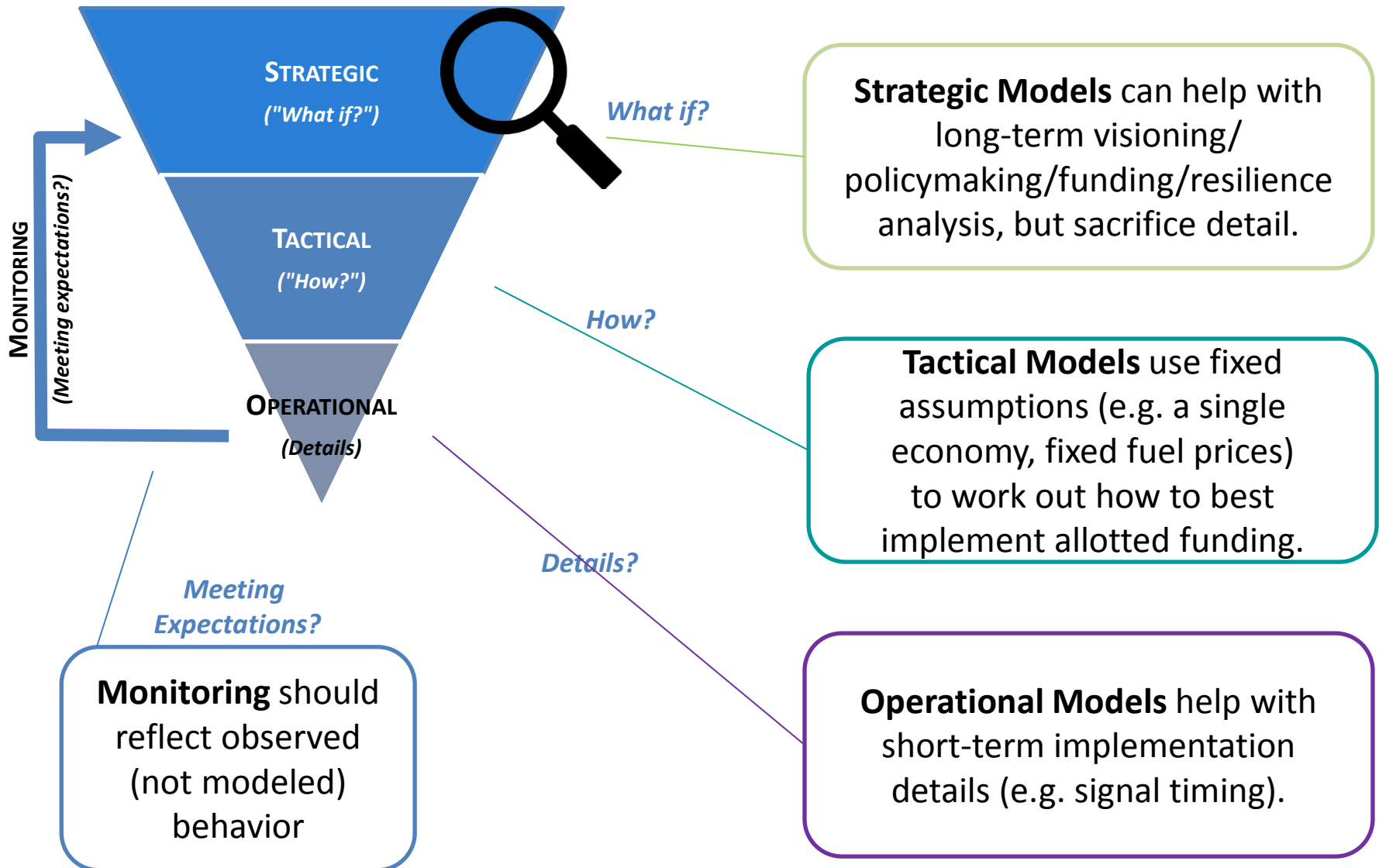
1. Statewide Transportation Strategy Monitoring



2. Testing Autonomous Vehicles with the Regional Strategic Planning Model (RSPM)



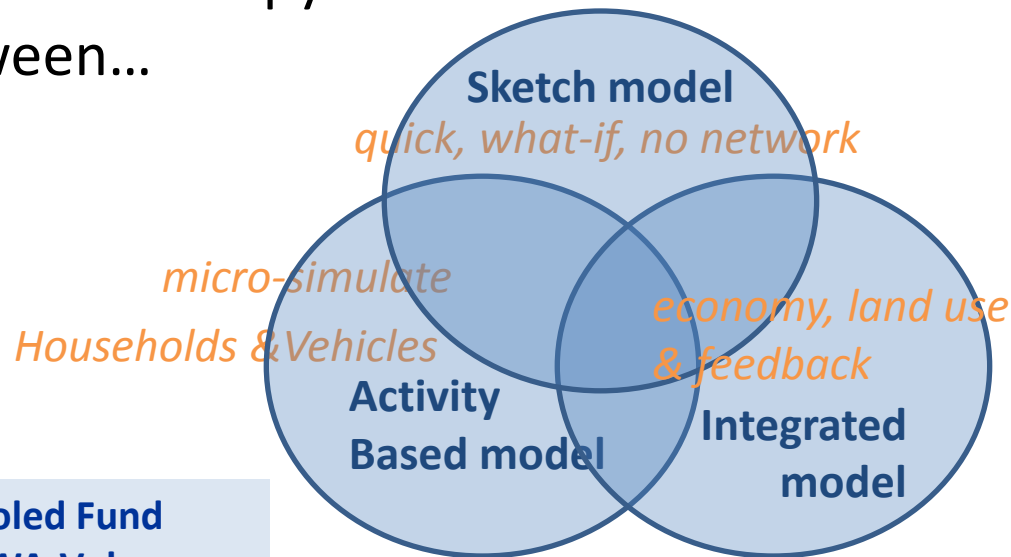
Analysis Toolkit



VisionEval

Strategic Planning Tools

VisionEval tools occupy a niche between...



...balancing
rapid computation &
accurate representation



Pooled Fund
FHWA-Volpe

DOTs

- OR
- MD
- WA
- Ohio
- NC
- CA

MPOs

- Las Vegas
- Atlanta
- Houston

Visioneval.org



Statewide Transportation Strategy

2018 Monitoring Report

Tara Weidner, TPAU, Oregon DOT

Oregon Modeling Users Group August 22, 2108

Statewide Transportation Strategy (STS)



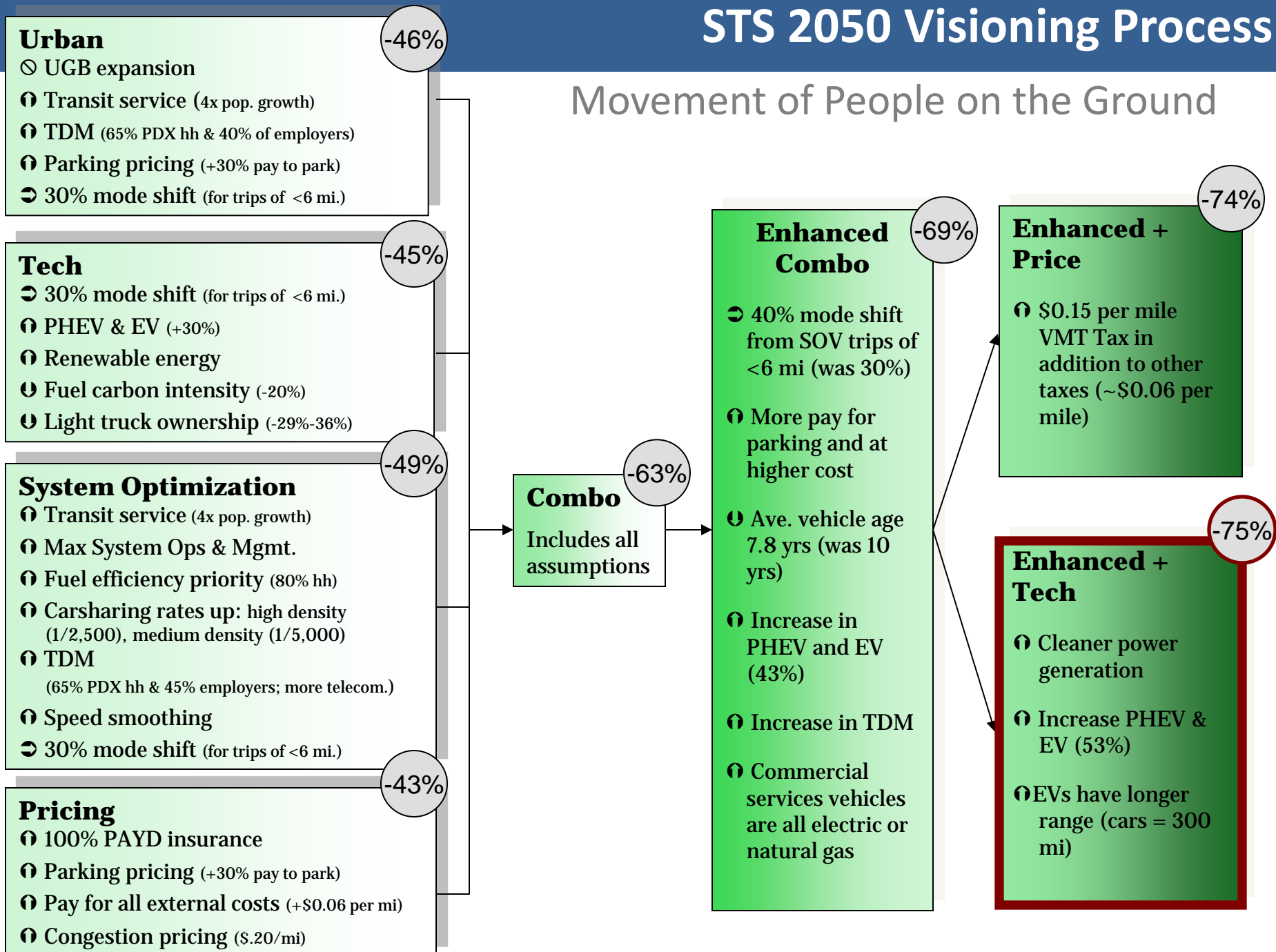
Required by Legislation to Reduce Transportation GHG (SB1059, HB2001)

What will it take by 2050? Ground, Freight, and Air



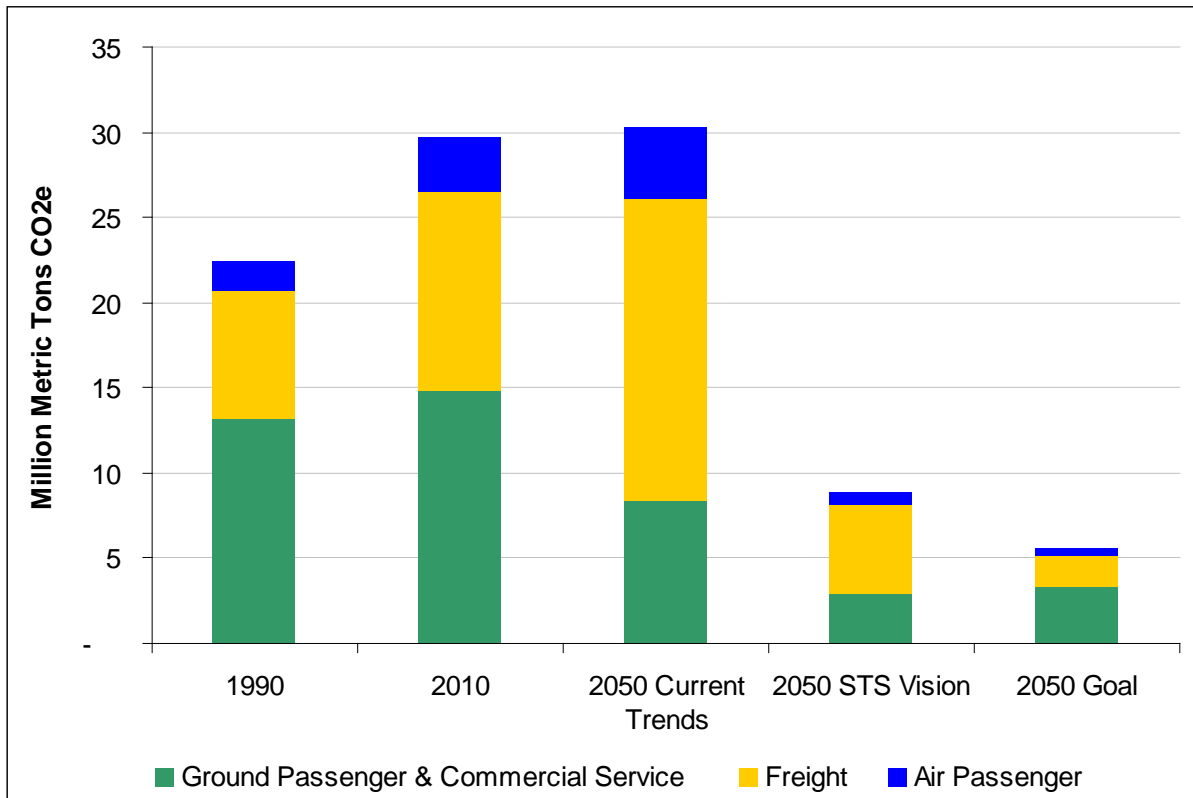
STS 2050 Visioning Process

Movement of People on the Ground



2013 STS Report

- Transportation is 30% of GHG in Oregon
- STS Vision achieves, 60% fewer GHG emissions than 1990 (~80% per capita)



Strategies

Vehicle and
Fuels



Systems and
Operations



Pricing



Transportation
Options



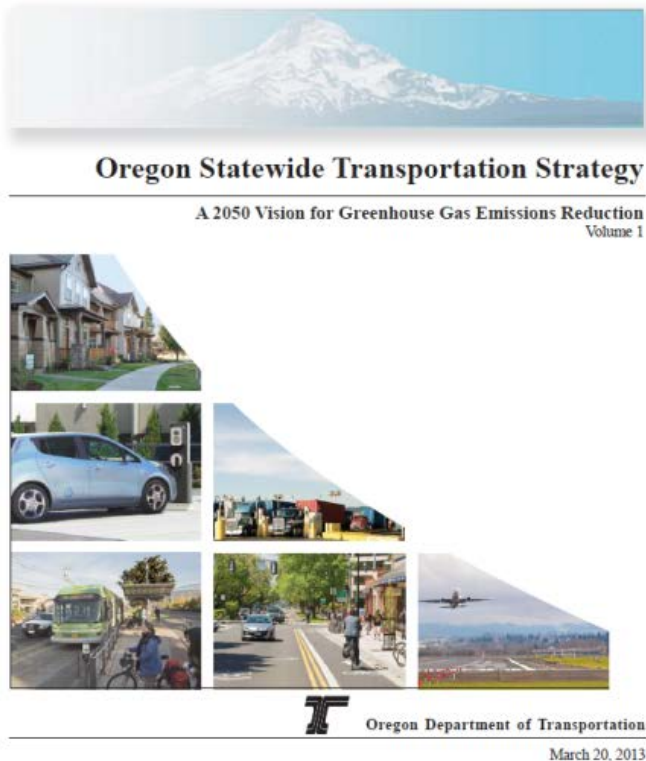
Land
Use



STS Implementation

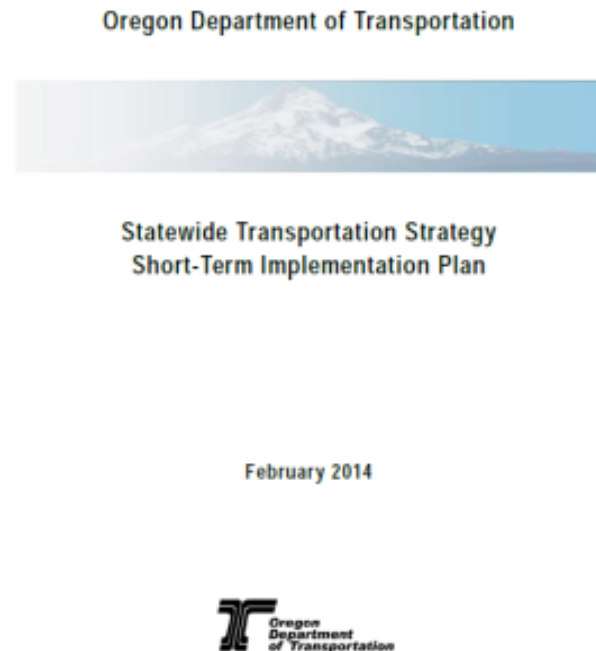
ODOT Efforts

2013 Vision



2018 Monitoring Report (5-yr frequency)

2014 Implementation Plan



STS Implementation

STS Short Term Implementation

- Electric Vehicles & Low Emission Fuels
- Eco-Driving
- Road User Charge
- ITS
- Transportation Planning & Project Selection
- Strategic Assessment & Scenario Planning
- Stakeholder Coordination

ODOT Supporting Activities

- Oregon Sustainable Transportation Initiative (OSTI),
- Mode and Topic Programs,
- HB2017 - Portland Value Pricing, Transit funding, etc.



Scenario Planning

Oregon efforts to date:

- **Statewide:** STS and modal plans
- **Required:** Metro, Central Lane
- **Voluntary:** CAMPO, RVMPO
- Climate Action Plans (Bend, others)

Tools:

- GreenSTEP created for STS, RSPM-metropolitan
- Federal versions (EERPAT state, RPAT metropolitan)

- **VisionEval**

- Common software framework
 - Pooled Fund: FHWA/Volpe- hosted

States: OR, WA, CA, MD, NC, OH

MPOs: Atlanta, Las Vegas, Houston



Keep Oregon Moving (HB2017)



Highlights of HB 2017

Transportation Investments

Roads & Bridges



Most of ODOT's funding will go to road maintenance and preservation for lasting fixes that keep Oregon's roads and bridges in good condition today and for future generations.

Local Control



Half of road funding will go to cities and counties to complete local communities' top priority road maintenance and improvements.

Reduced Value Pricing Congestion Portland



Relieving congestion bottlenecks will help people get where they want to go

quickly and reliably. New lanes on I-5 at the Rose Quarter will save motorists 2.5 million hours wasted in gridlock each year, and widening sections of OR 217 and I-205 in Portland will improve reliability.

Better Public Transportation



Rural and urban bus service will provide choices to help people get around, while reducing air pollution and greenhouse gas emissions.

Safe Biking & Walking Options



Sidewalks, bike lanes, and crossings near schools will help kids get to school safely. Funding from a new bike tax will build

off-road paths that separate bikes and walkers from auto traffic.

Moving Freight



Improvements to rail and ports will get products from Oregon's farms, forests, and factories to markets across the world. New intermodal rail facilities will shift freight from truck to train, freeing up space on crowded freeways.

Electric Vehicle Incentives



Rebates for zero emission vehicle purchases will help Oregon transition to a sustainable transportation system.

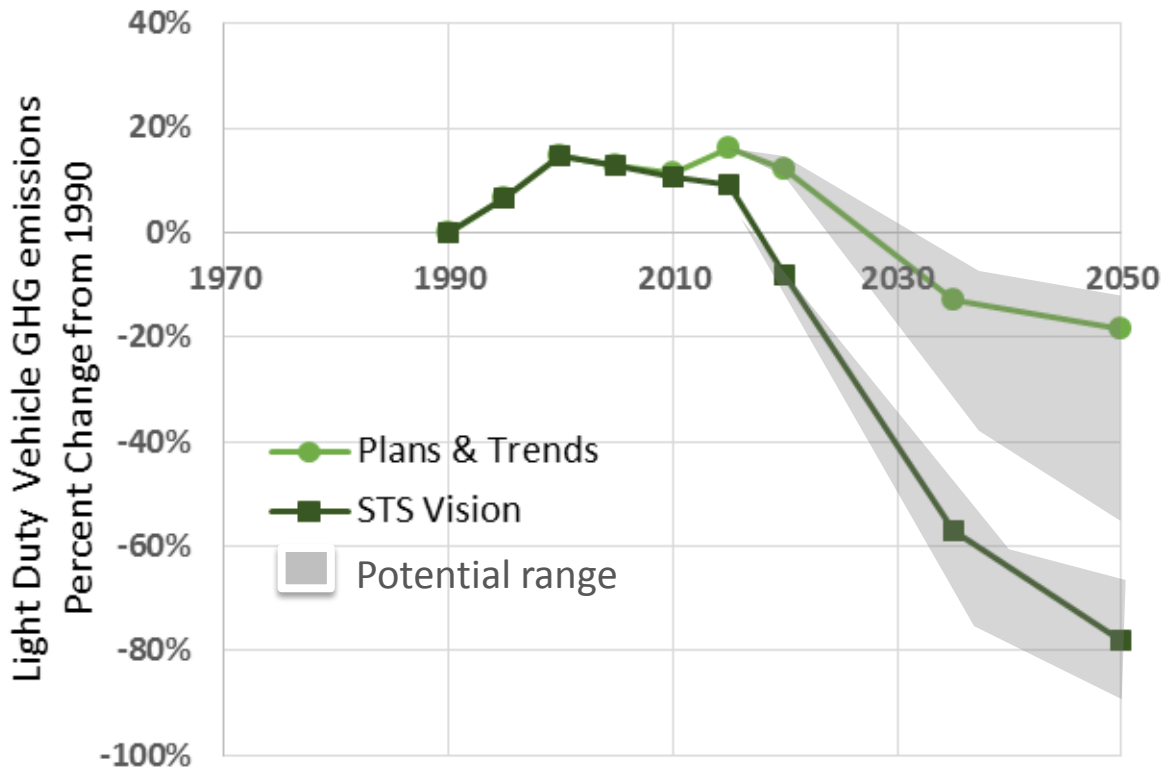
Overall Progress Towards the STS Vision



Percent Change in GHG Emissions from 1990

Projected GHG Emissions

Light Duty Vehicle CO₂e Percent Change from 1990



Good News

Federal CAFÉ standards
OR Clean Fuels Program
Transit Funding (HB2017)

Most Local Plans on track
through 2020

Headwinds

Population
Economy/Income
Fuel Price

Uncertainty

Resilience to outside forces



- **Policy Uncertainty**

Market Uncertainties – vehicle sales, etc.

Program Effectiveness -- LEV/ZEV, CFP, EcoDrive

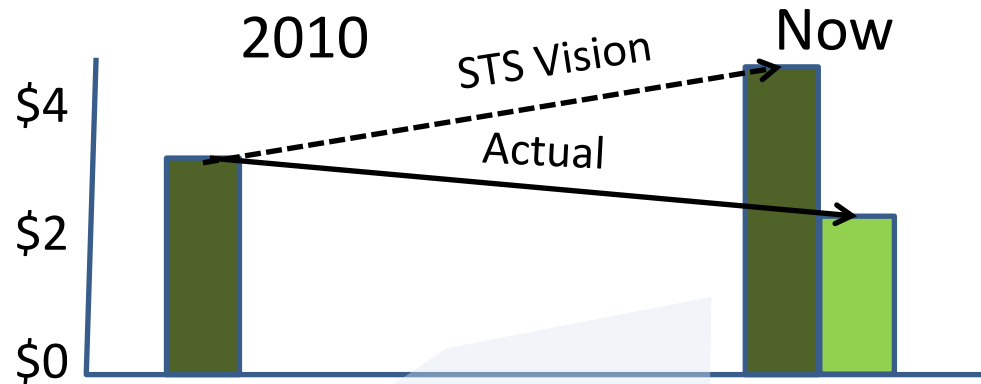
- **Global Forces**

Population, Economy/income, Fuel price, etc.

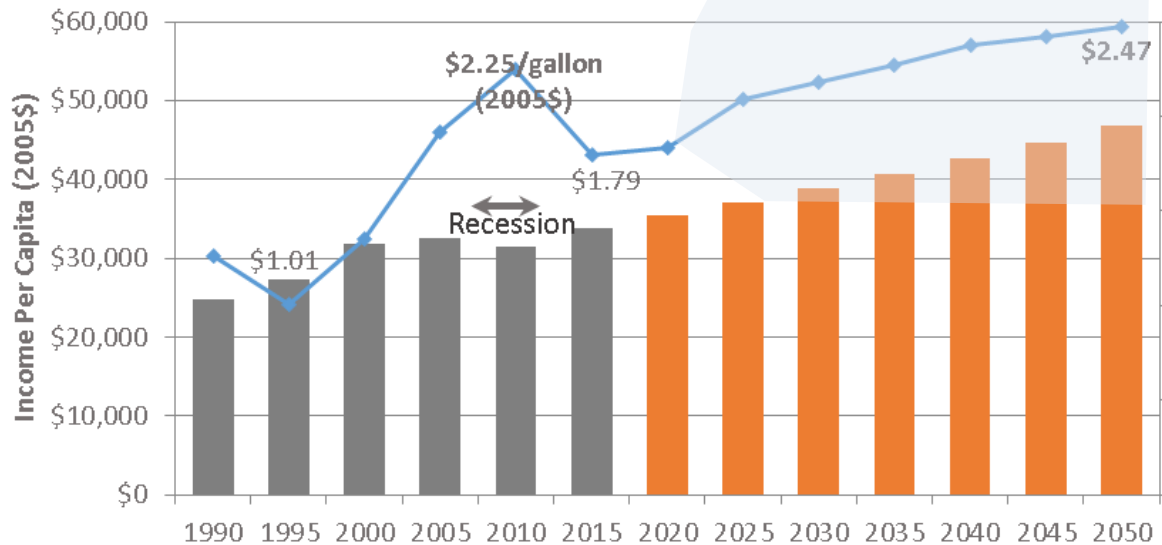
Plans & Trends vs. STS Vision

Near Term Restraining Forces

- Lower gas prices
- Tighter budgets (2005\$)



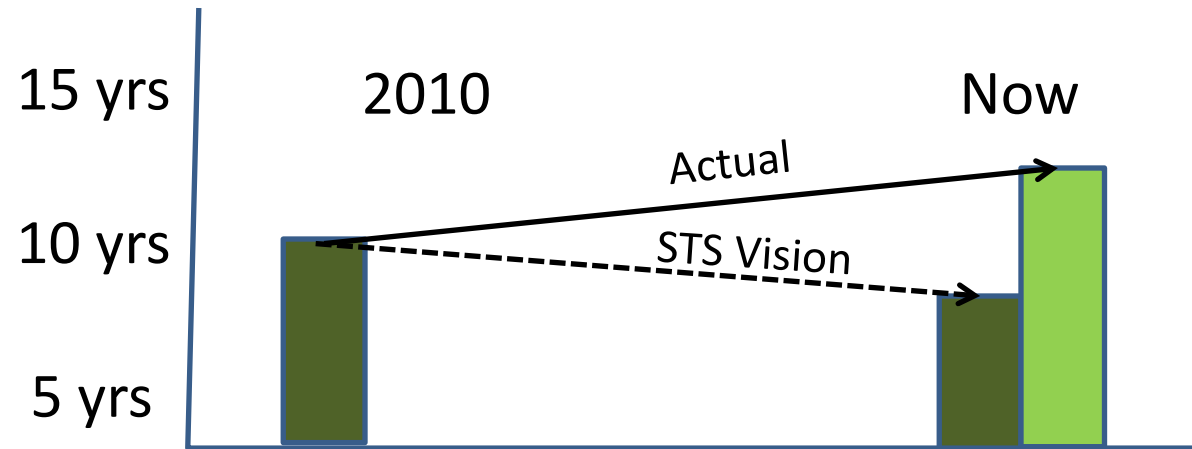
Income & Fuel Price combine to boost VMT



Plans & Trends vs. STS Vision

Near Term Restraining Forces

■ Older cars



■ More SUVs and trucks

■ Few no/low carbon vehicles yet

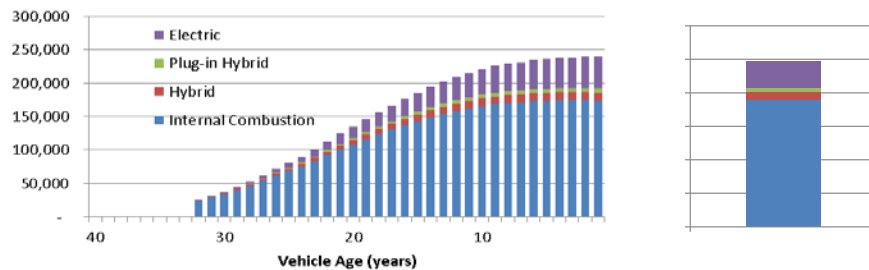


Sales and Age impact on Vehicle Mix

Plans & Trends Scenario

12 year Average Age

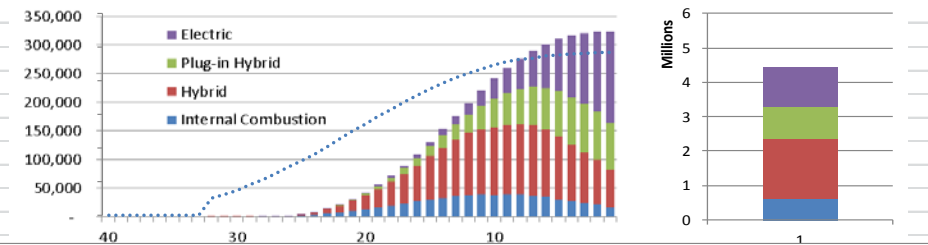
Vehicles by Type and Age in 2050



STS Scenario

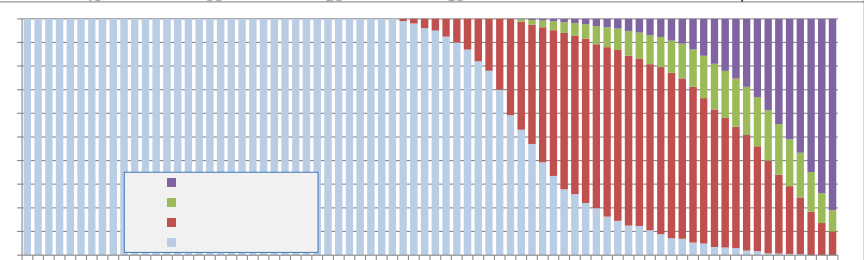
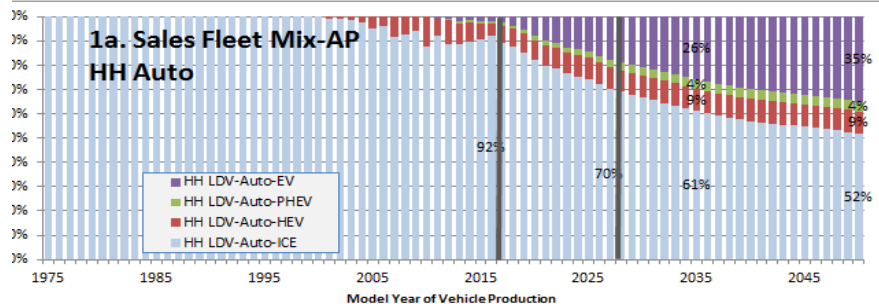
8-year Average Age

Vehicles by Type and Age in 2050

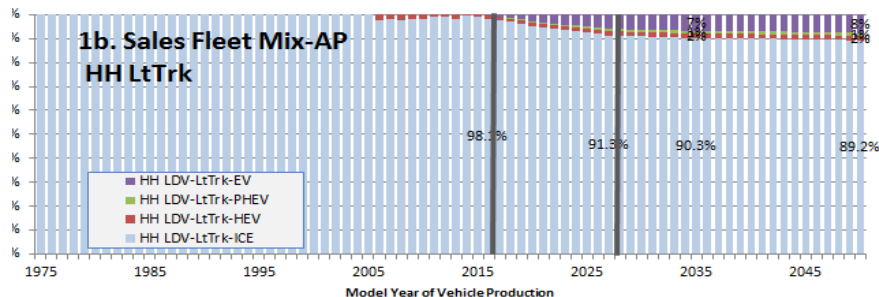


Vehicle Sales Mix (Federal CAFÉ, ZEV/LEV)

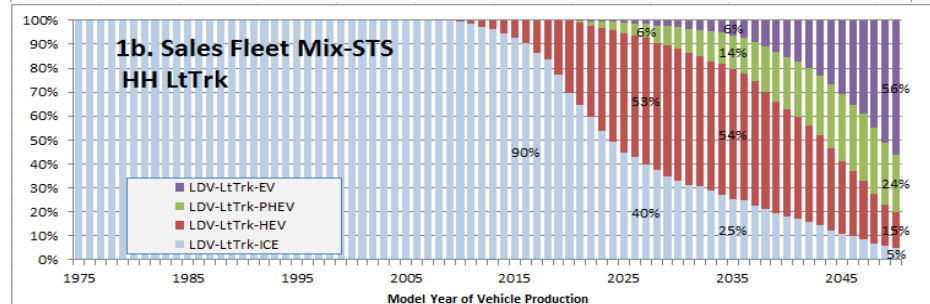
1a. Sales Fleet Mix-AP
HH Auto



1b. Sales Fleet Mix-AP
HH LtTrk



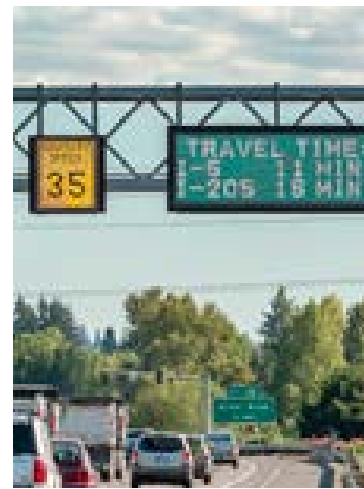
1b. Sales Fleet Mix-STS
HH LtTrk



Plans & Trends vs. STS Vision

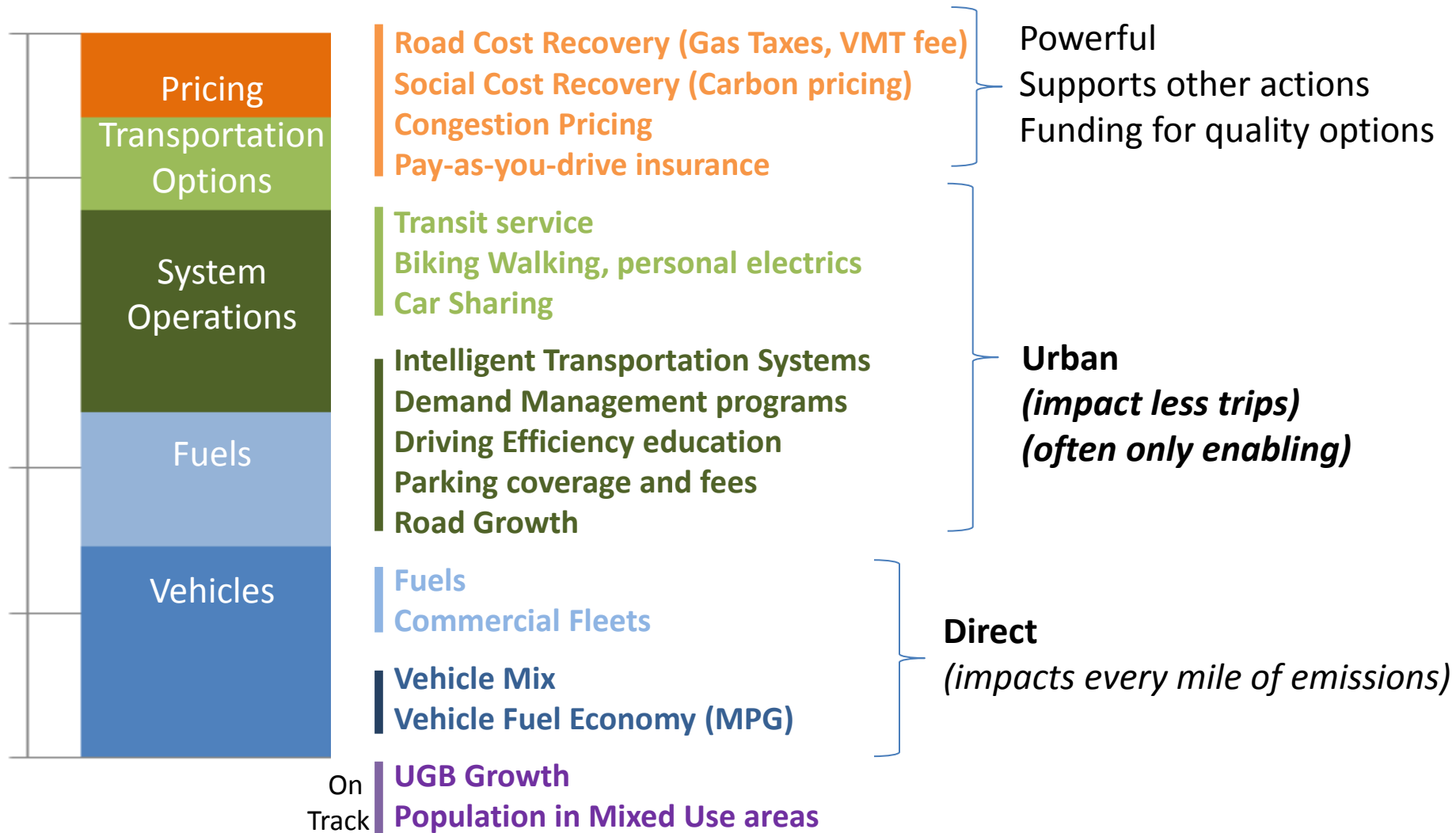
Near Term Driving Forces

Other Actions: Mostly on-track in near term, local adopted plans, HB2017, etc.



Gaps to reach STS Vision

Relative Impact of remaining STS Strategies on Emissions (LDV)



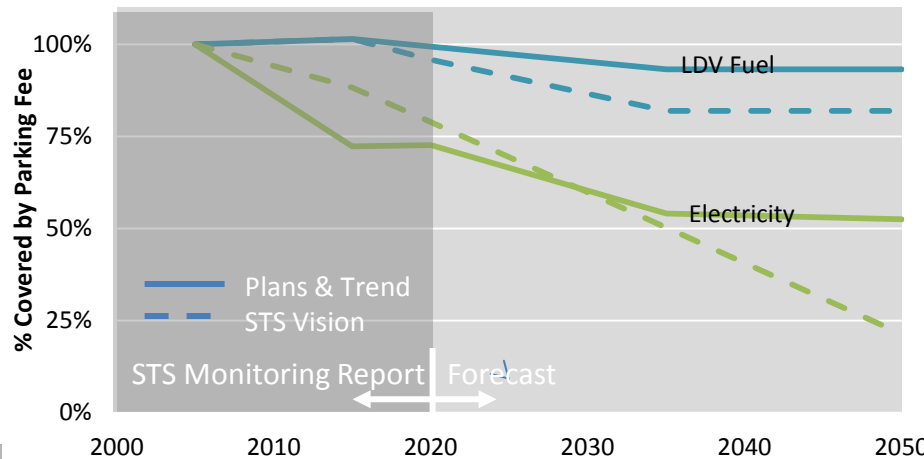
Long Term vs. STS Vision

Good News!

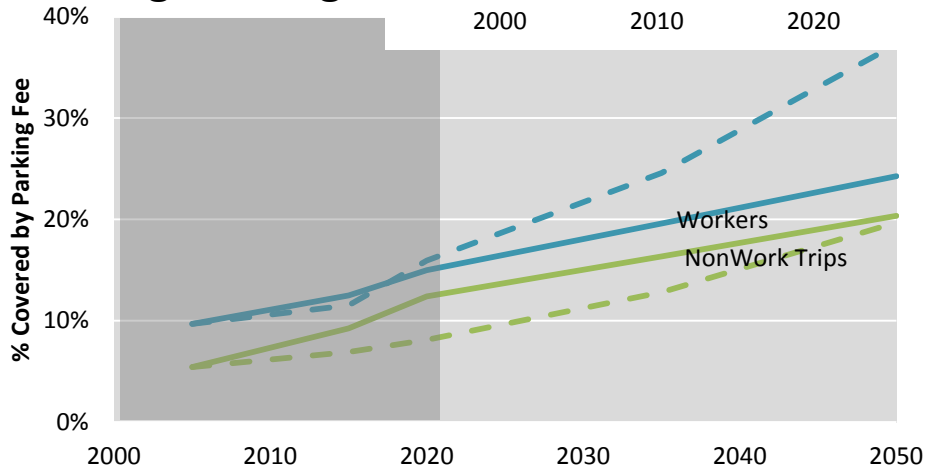
Right track to 2020 and beyond, continue to monitor.

Example:

Fuel Carbon Intensity



Parking Coverage



Vehicle-Fuels Actions

EV adoption (still small)
EV Battery Range & Cost
Electric Carbon Intensity

State-Local Actions

Land Use
Mixed Use

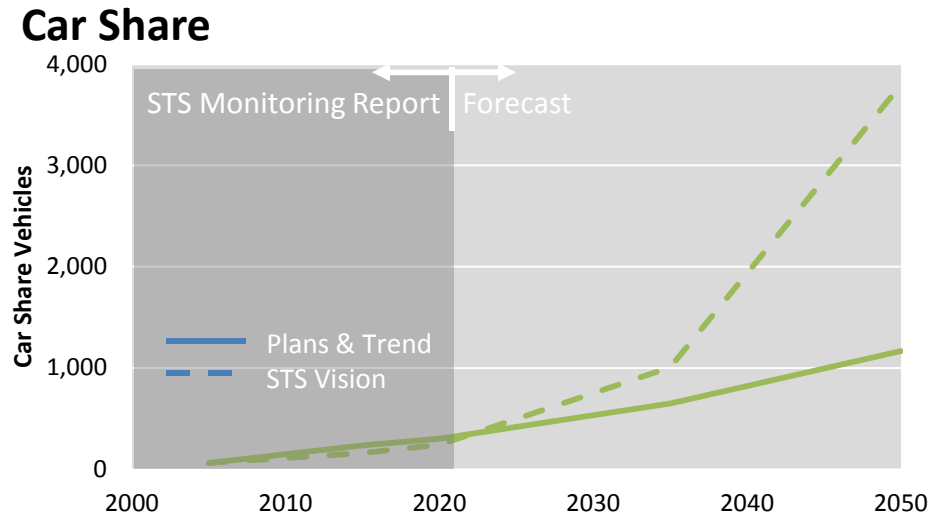
Road Growth
Parking Coverage

Long Term vs. STS Vision

Capture Headwinds..

Right track to 2020 and beyond, if trends continue.

Example:



Local Actions

Car share → TNCs

Bike/Ped → Electrics

Car Manufacturer actions:

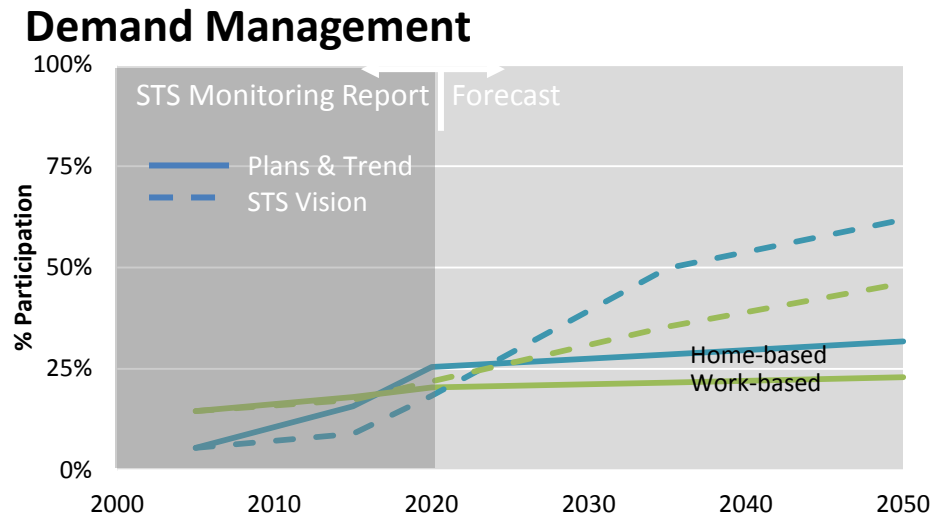
- Standard features (dashboards, tires, etc.)
- Adaptive Speed Control
- Stop/Start Technology (congestion)
- CV/AV

Long Term vs. STS Vision

More Effort Needed...

Slightly off track in 2020, significant effort needed by 2050.

Example:



Legislative Action

Extend Fed CAFÉ standards

ZEV → ZEV II

Clean Fuels → CFP II

True Cost Pricing

PAYD, OreGO

Carbon Pricing

Congestion Pricing

Parking Fees

Funding

Transit Service/Buses

Travel Demand Programs

ITS Programs

Consumer Choices

Vehicle type, size, age

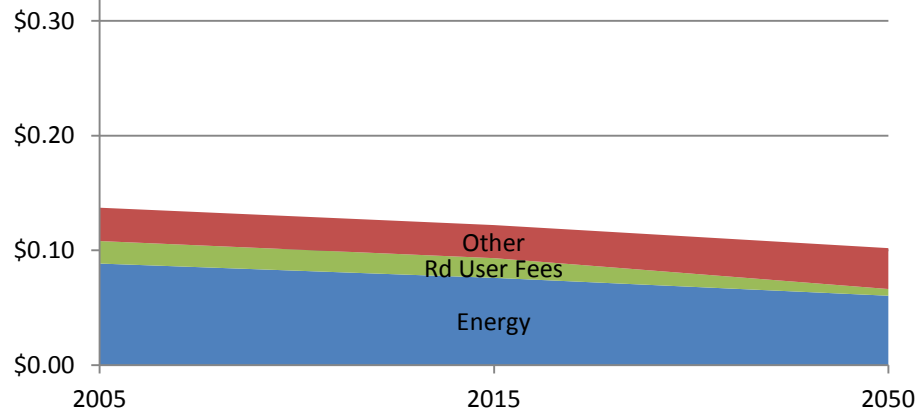
Long Term vs. STS Vision

True Cost Pricing (2005\$)

More Effort Needed...

New Vehicles reduce Cost Per Mile

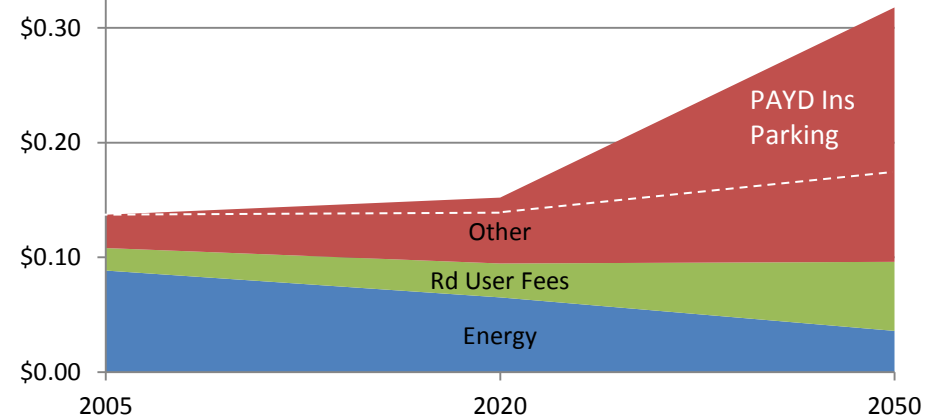
Plans & Trends Scenario



Other: Vehicle O&M costs, Parking Fees, PAYD insurance
Road User Fees: Gas taxes, Registration Fees, VMT fees

STS assumes Full Cost Pricing, etc.

STS Vision Scenario



Other: Vehicle O&M costs, Parking Fees, PAYD insurance
congestion fees, carbon pricing
Road User Fees: Gas taxes, Registration fees, VMT fees,

True Cost Pricing:

Road Costs : \$0.03/mile

Social Costs: \$0.06/mile, declines with electrified fleet

Price expected to impact travel behavior....roughly \$0.20/mile (today's \$4/gallon)

Other ongoing efforts

- **Cities:** GHG ordinances, Inventories, Climate Action Plans
- **Multi-Sectors:**
 - DOE/DEQ multi-sector inventories
 - DOE Biennial Energy Report (Nov 2018)
 - Oregon Global Warming Commission reports
- **Funding:** Oregon Carbon Pricing Bills
 - ➔ would require lifecycle of tools

Questions?



Oregon Statewide Transportation Strategy

A 2050 Vision for Greenhouse Gas Emission Reduction

2018 Monitoring Report



Oregon Department of Transportation

April 19, 2018