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5-22-2015

# New FHWA VMT Forecasts Implications for Local Planning

Andrew Mortensen

*David Evans and Associates*

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# New FHWA VMT Forecasts & Implications for Local Planning



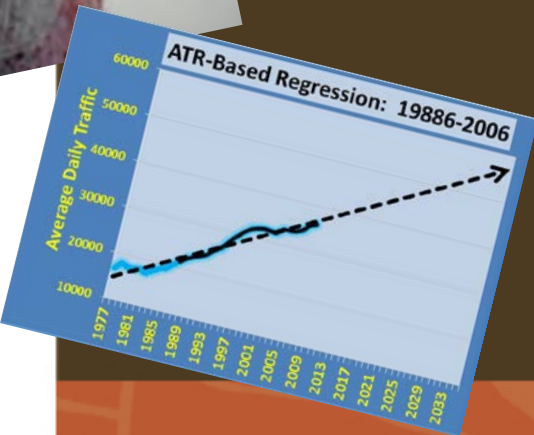


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*or...*



# Post-Apocalyptic Zombies Ate Oregon's Post-Recession ATR Regression



# Outline

- **US Vehicle Miles Travelled History**
- **FHWA Revised Forecasts & National VMT Experience**
- **Oregon VMT Experience**
  - ✓ **METRO VMT Trends – Portland Urban Area**
- **ATR Data Use In Local Transportation Plans**
  - ✓ **2006/2010 McMinnville TSP Example**
  - ✓ **OR 99W Corridor / METRO Urban Area Context**
- **Cross-Willamette Valley Count Examples**
  - ✓ **Historic Trends**
  - ✓ **FHWA Forecast Implications**
- **Updating Local Transportation System Plans**





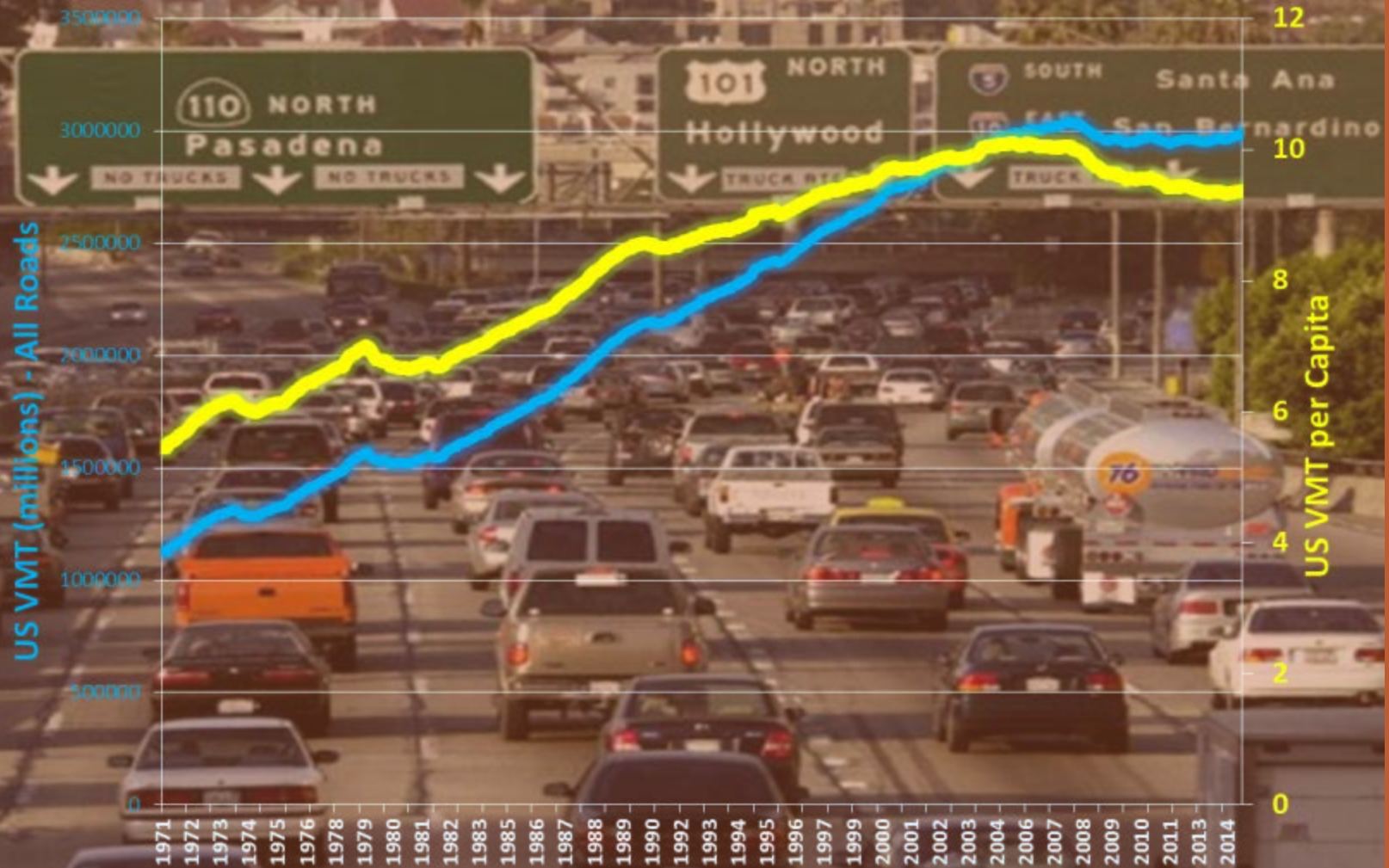
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# US VMT History



# US VMT History

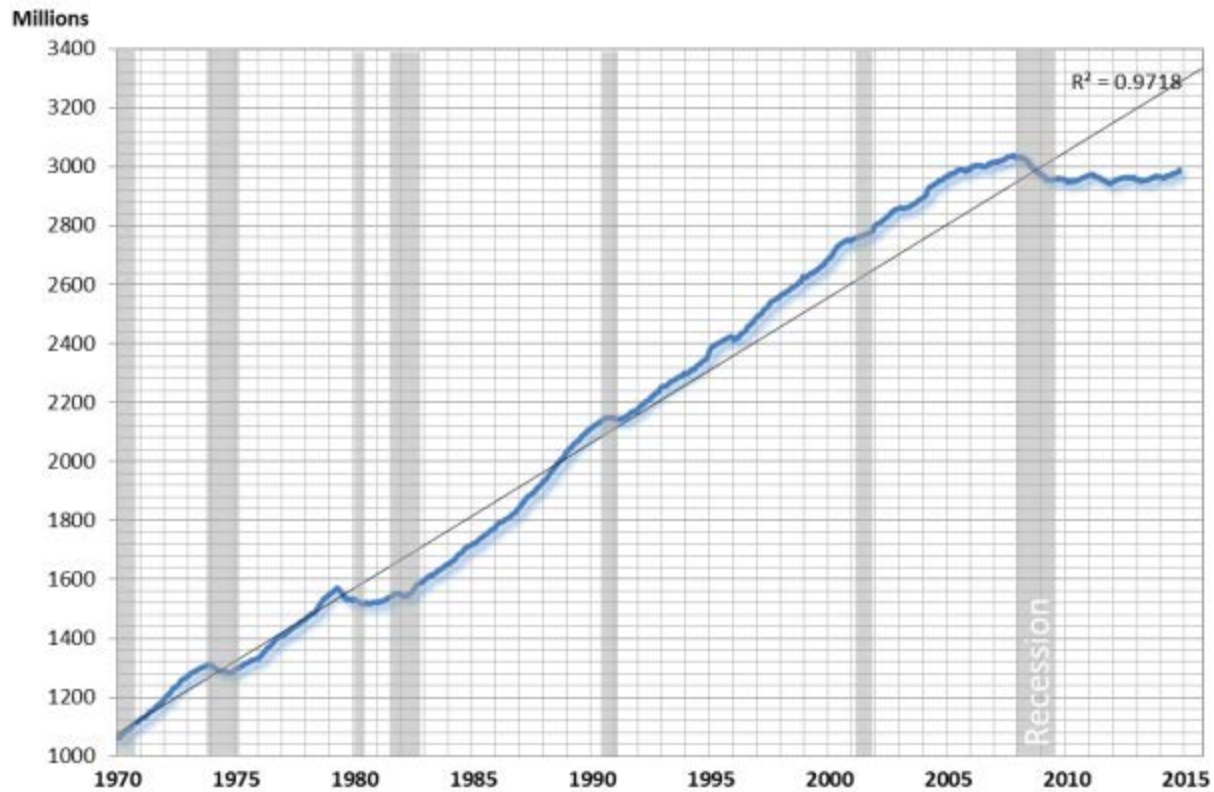


Source: FHWA (2014) | Federal Reserve Bank – Economic Data



# US VMT Trends/Estimates

## Estimated VMT on All U.S. Roads

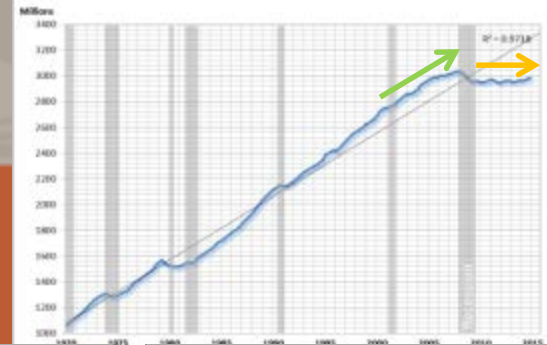


Source: FHWA, Office of Highway Policy Information - Travel Monitoring



# US VMT Trends/Estimates

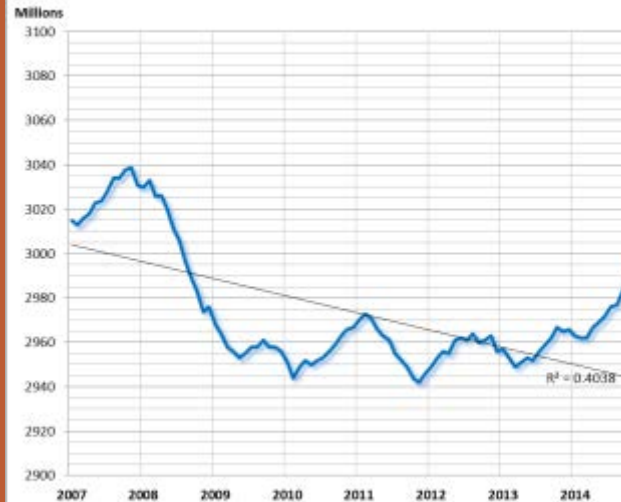
Estimated VMT on All U.S. Roads



The Pre-Recession Trend....



....with a Closer Look Since 2007....



.....No Longer Holds Serve

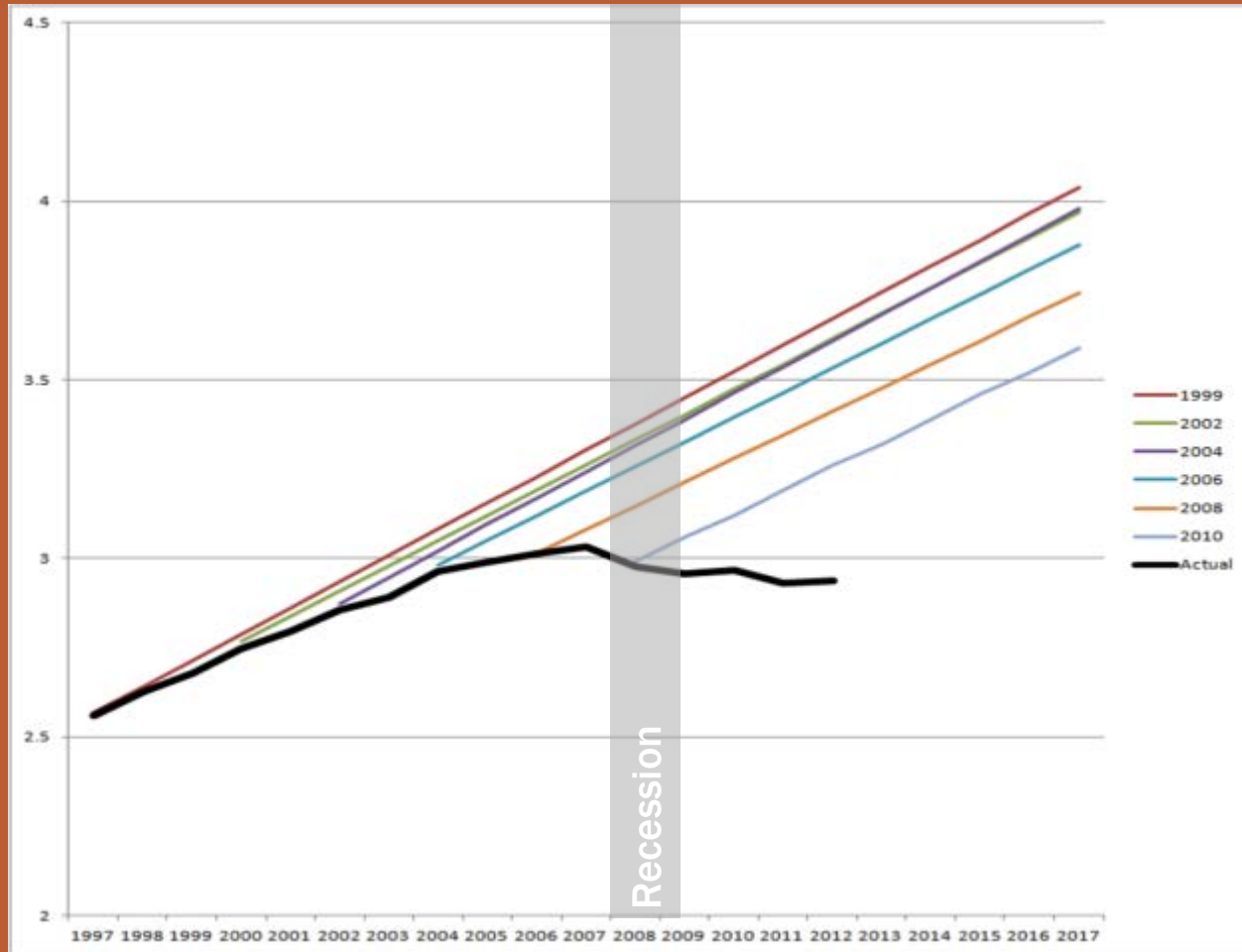




# US VMT Trends/Estimates

- US DOT C&P Reports – by year reported

US VMT in Trillions

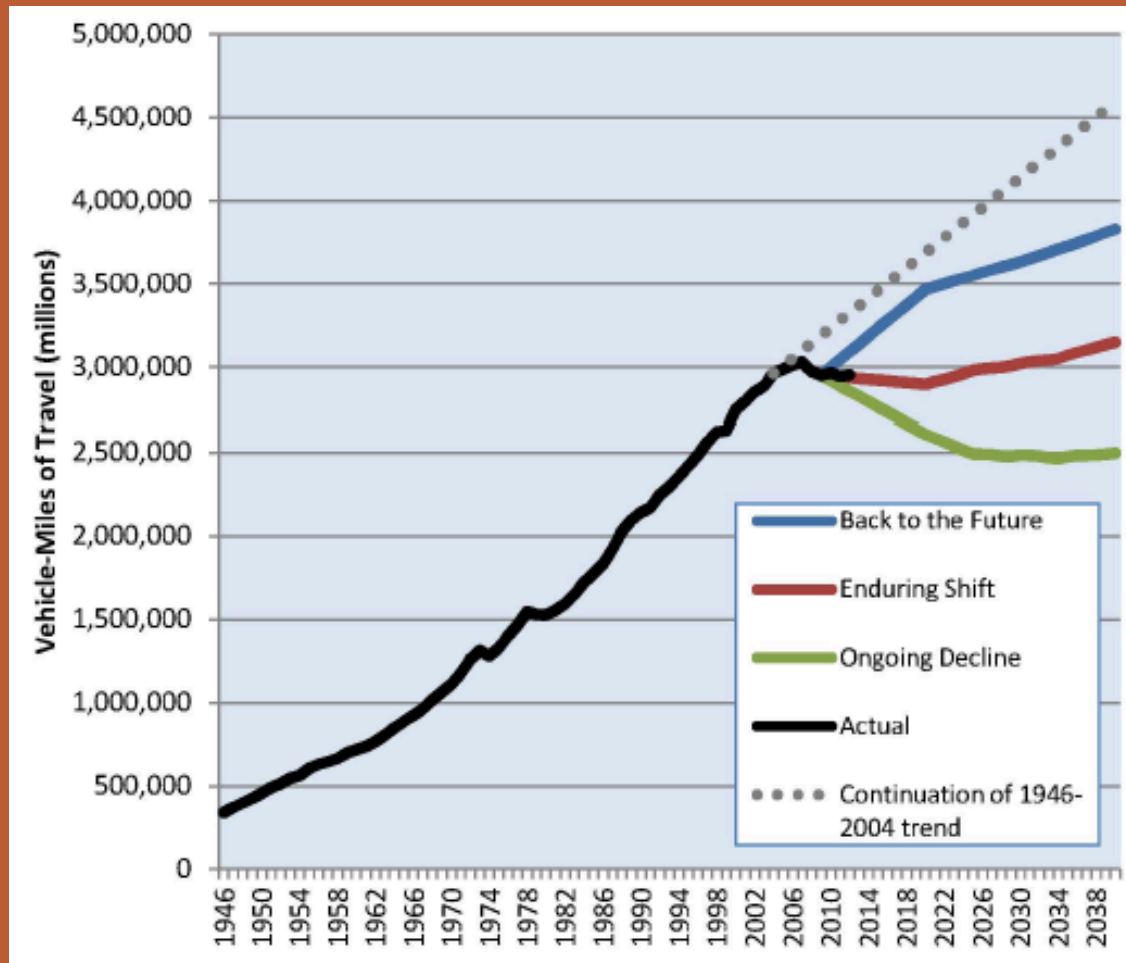


**US VMT  
Growth  
Peaked and  
Flattened  
Before  
2008  
Recession**



# US VMT Estimates

## ■ Suggested Options for Study from Skeptics

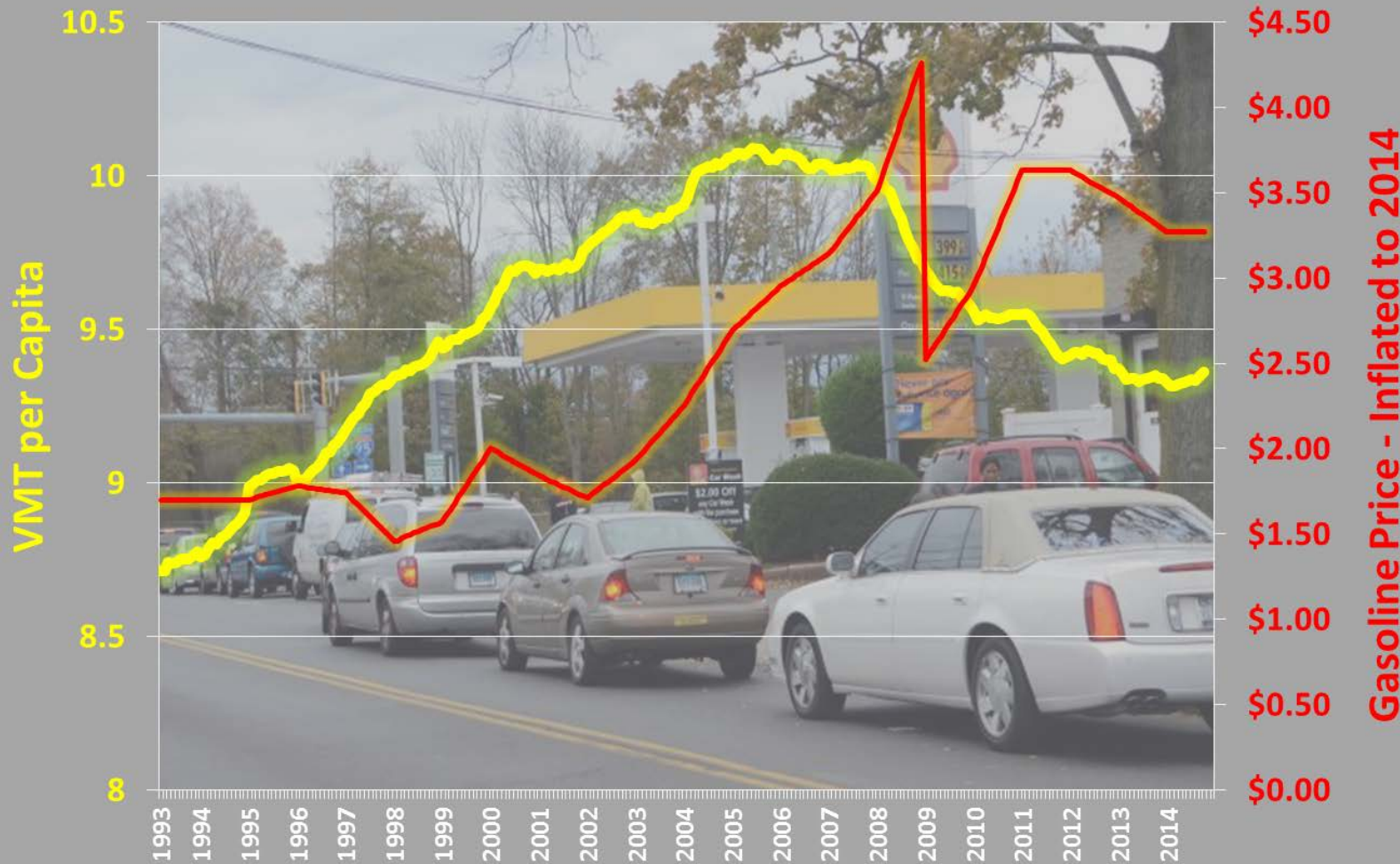


Source: USPIRG, 2014



# FHWA Findings | VMT per Capita Trend

Due to more than rising gas prices (current prices as exception)



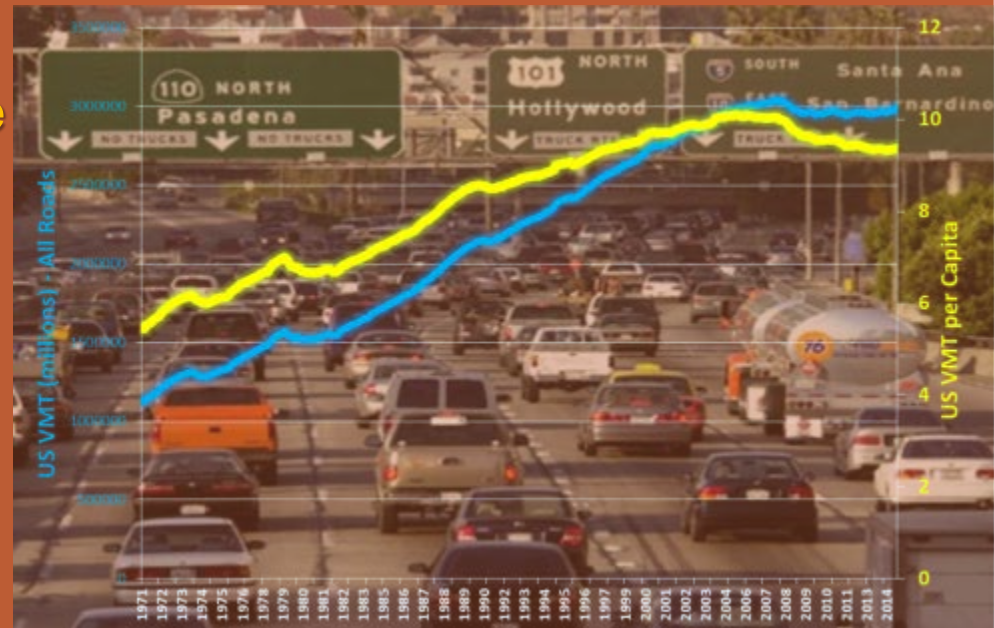
Gasoline Price - Inflated to 2014



# FHWA Findings

## Revised **VMT/Capita** Trend Forecasts due to.....

- Life Cycle Effects
  - Aging population
  - **Declining per-capita income**
- Period Movements
  - Economic downturns
- **Growth Management Policies**
- Social Trends
  - Women-in-the-workforce
  - Millennials
- Technology



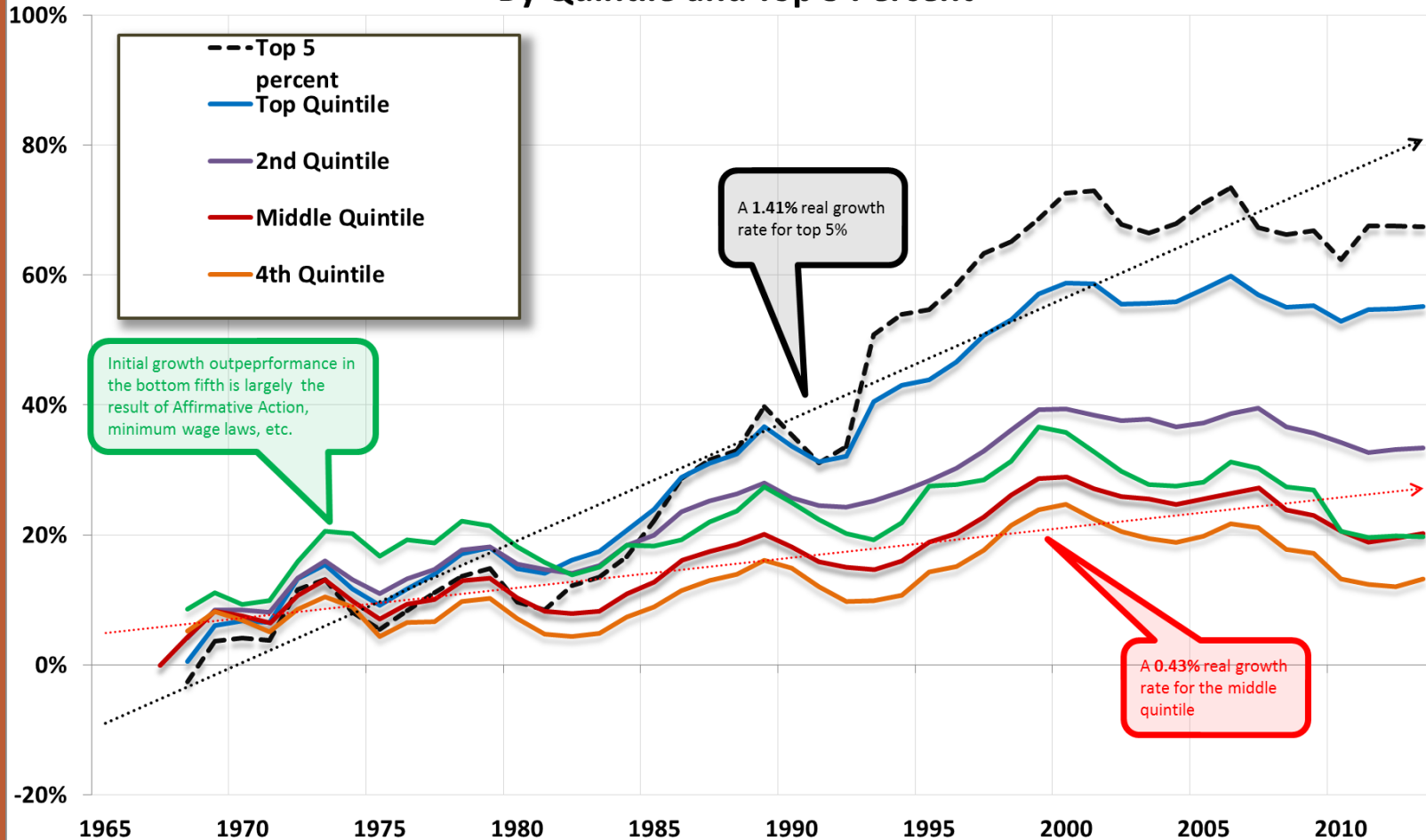
# FHWA Findings | VMT per Capita Trend



Source: FHWA, Office of Highway Policy Information, US Census

# FHWA Findings | Household Income Trends

## Real Mean Household Income Cumulative Growth By Quintile and Top 5 Percent



Source: US Census





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# FHWA Revised Forecasts



# New (December, 2014) FHWA VMT Forecasts

## ■ Baseline Forecasts of VMT Growth

| <b>Compound Annual Growth Rates</b> |                                |                                |
|-------------------------------------|--------------------------------|--------------------------------|
| <b>Vehicle Class</b>                | <b>2012-2032<br/>(20-year)</b> | <b>2012-2042<br/>(30-year)</b> |
| Light-Duty Veh                      | 0.98%                          | 0.67%                          |
| Single-Unit Truck                   | 1.46%                          | 1.16%                          |
| Combination Truck                   | 1.75%                          | 1.60%                          |
| <b>Total</b>                        | <b>1.04%</b>                   | <b>0.75%</b>                   |

## ■ Alternative(s)

| <b>Compound Annual Growth Rates</b> |                                |                                |
|-------------------------------------|--------------------------------|--------------------------------|
|                                     | <b>2012-2032<br/>(20-year)</b> | <b>2012-2042<br/>(30-year)</b> |
| Pessimistic                         | 0.94%                          | 0.69%                          |
| Baseline                            | 1.04%                          | 0.75%                          |
| Optimistic                          | 1.14%                          | 0.82%                          |





# FHWA VMT Forecasts



Source: FHWA – Office of Highway Policy Information, May 2014





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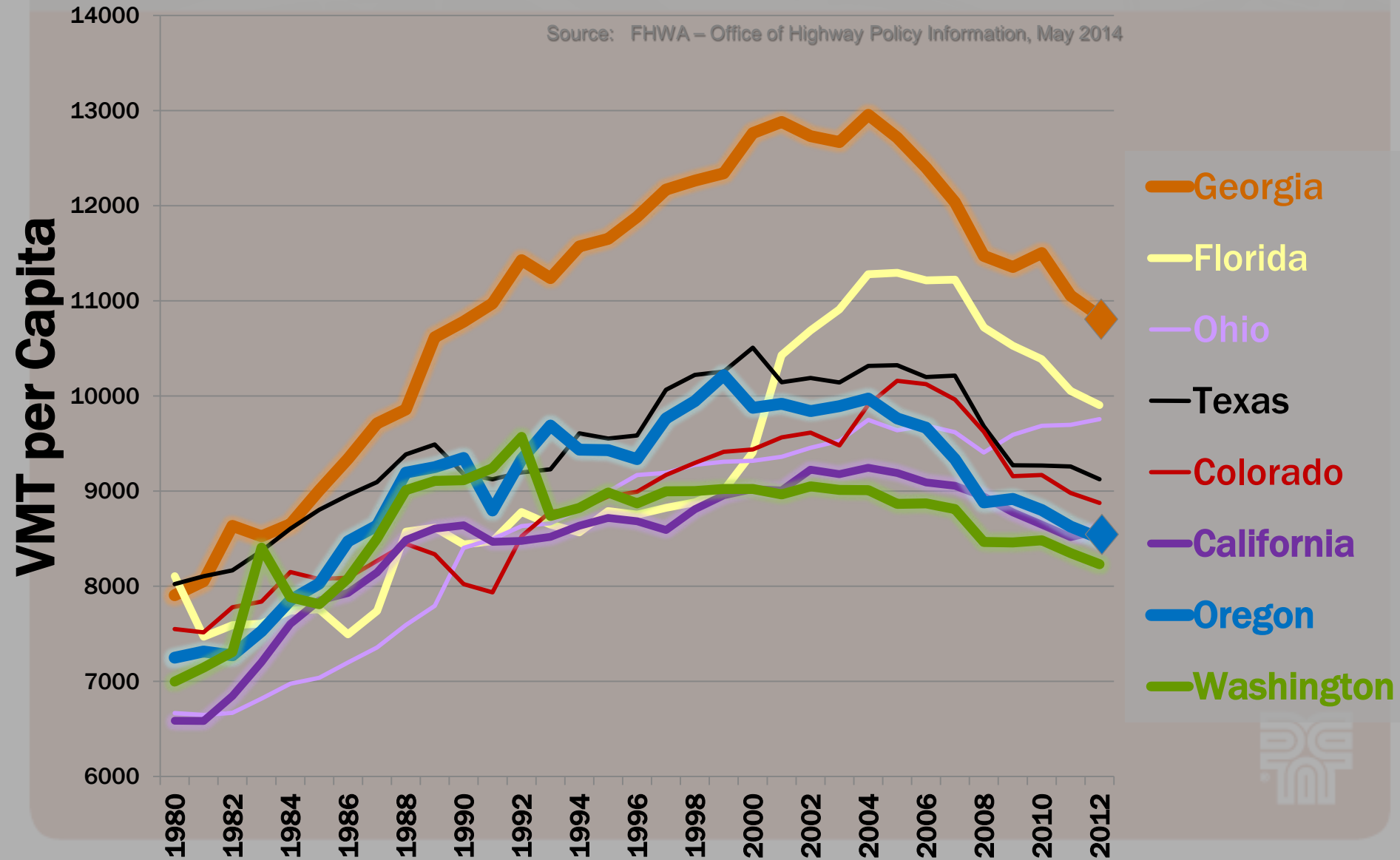


# National VMT Trends

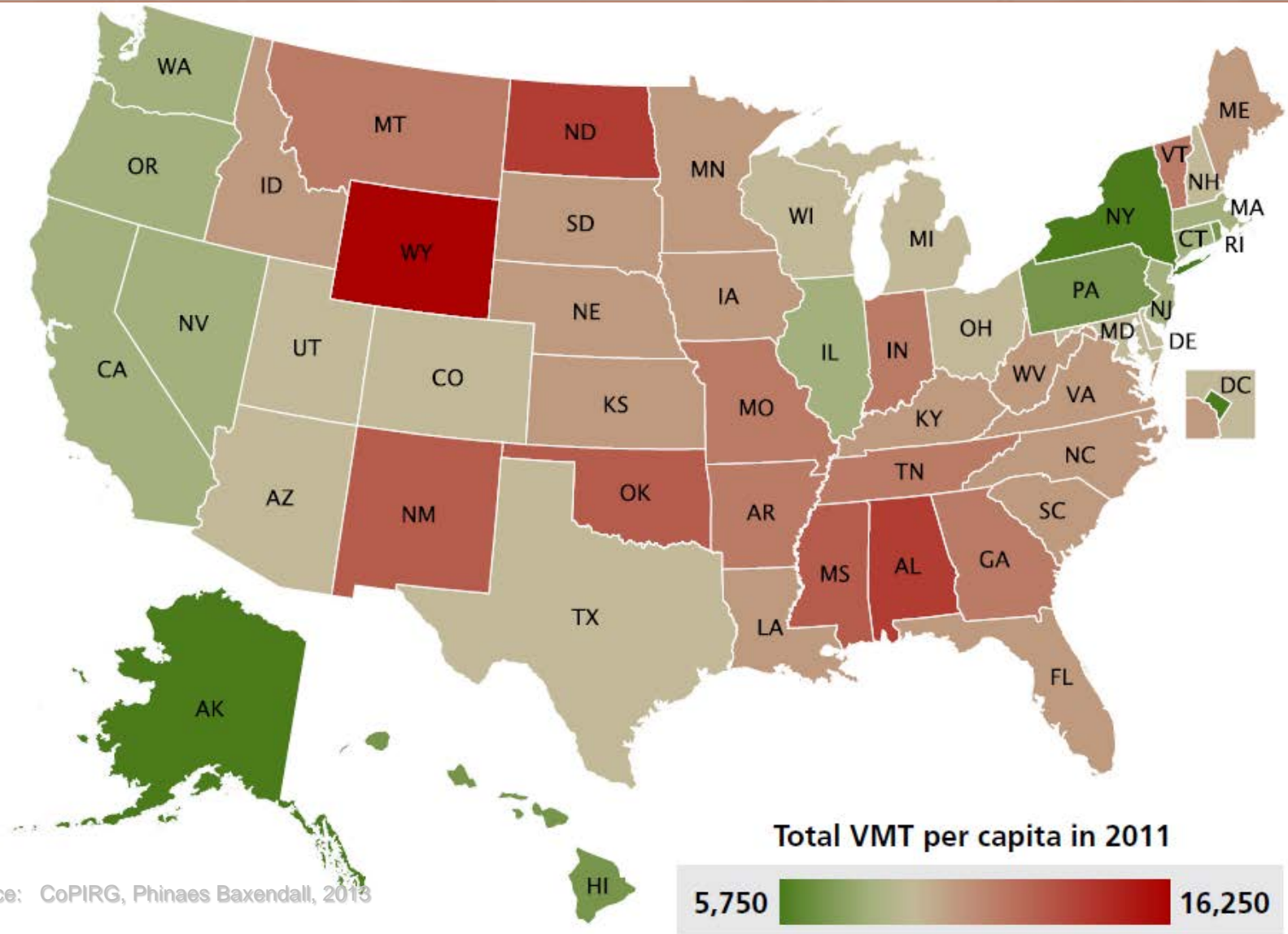


# State-by-State Comparison: VMT per Capita

Source: FHWA – Office of Highway Policy Information, May 2014

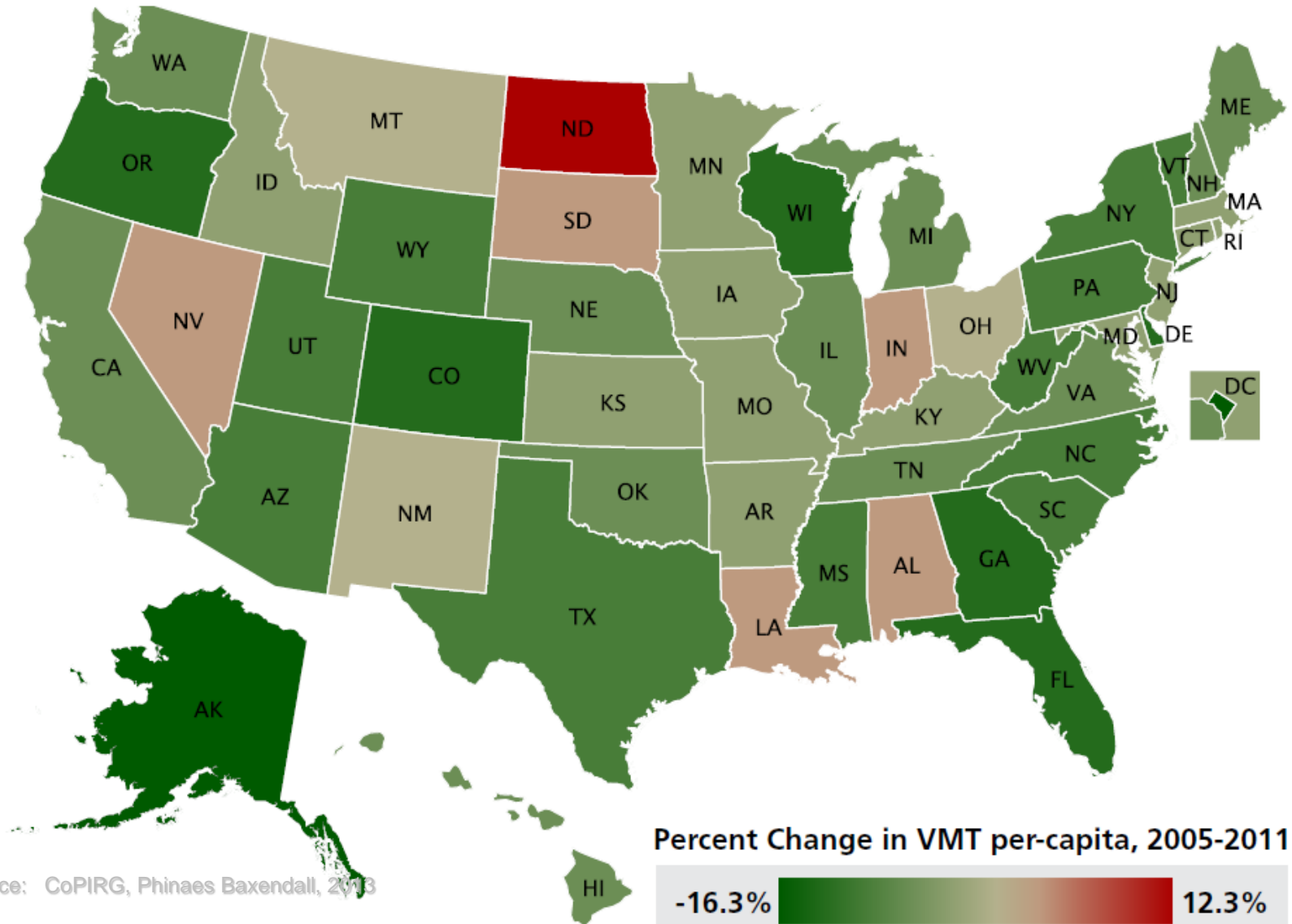


# Annual VMT Per-Capita - 2011



Source: CoPIRG, Phinaes Baxendall, 2013

# Percent Change in VMT Per-Capita: 2005-2011



Source: CoPIRG, Phinaes Baxendall, 2013





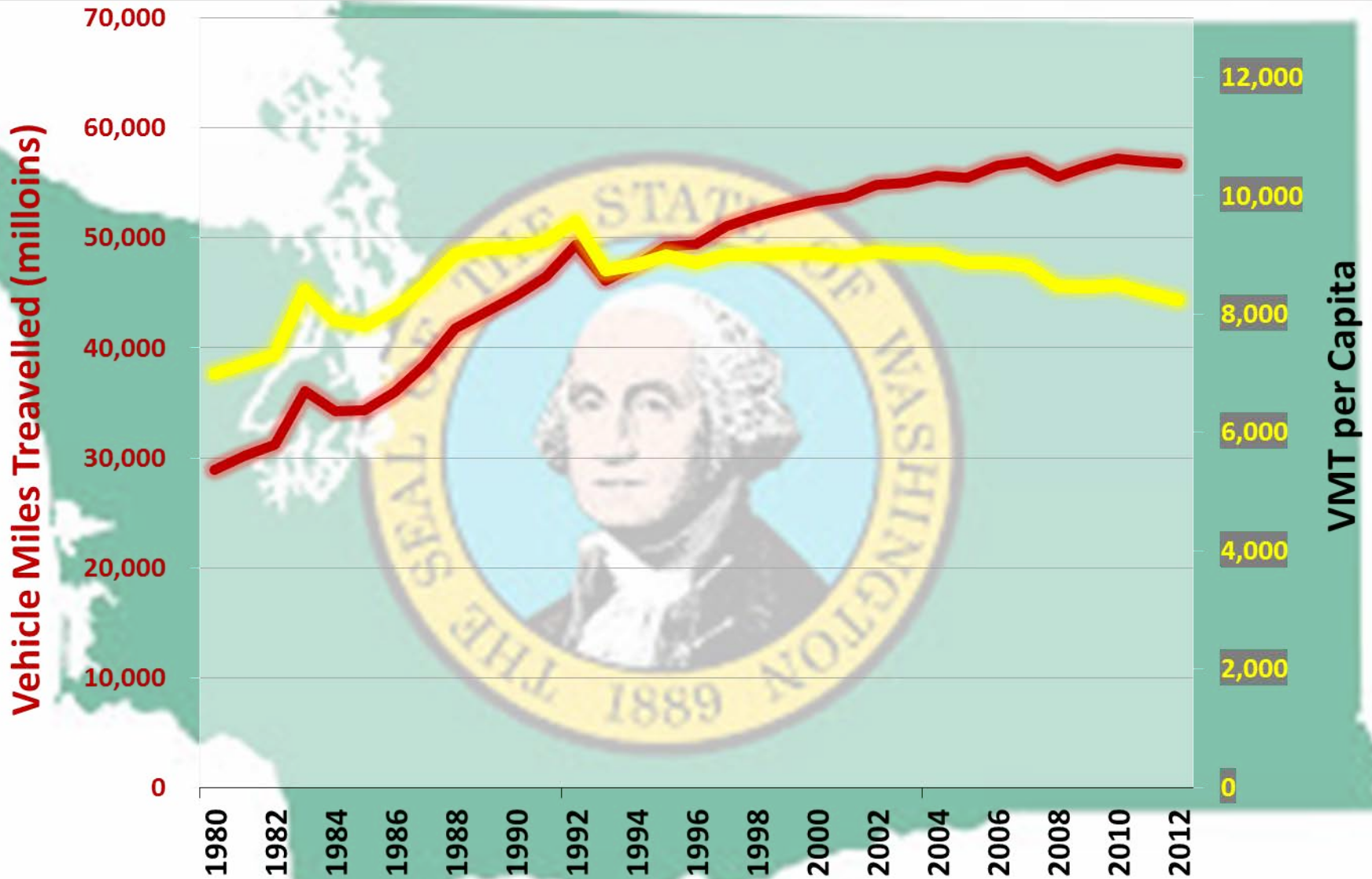
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# State VMT Policy & Trends



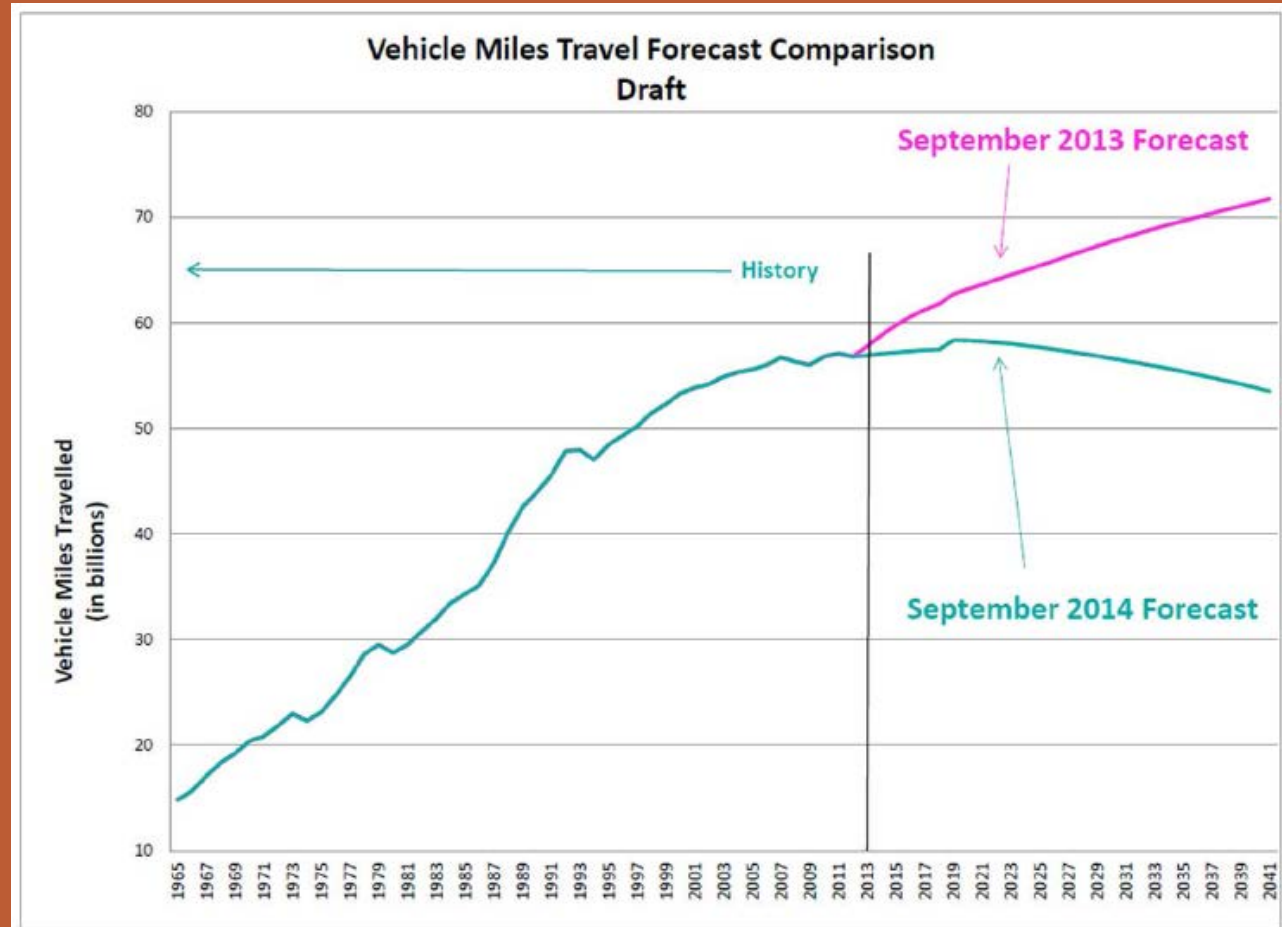
# Washington



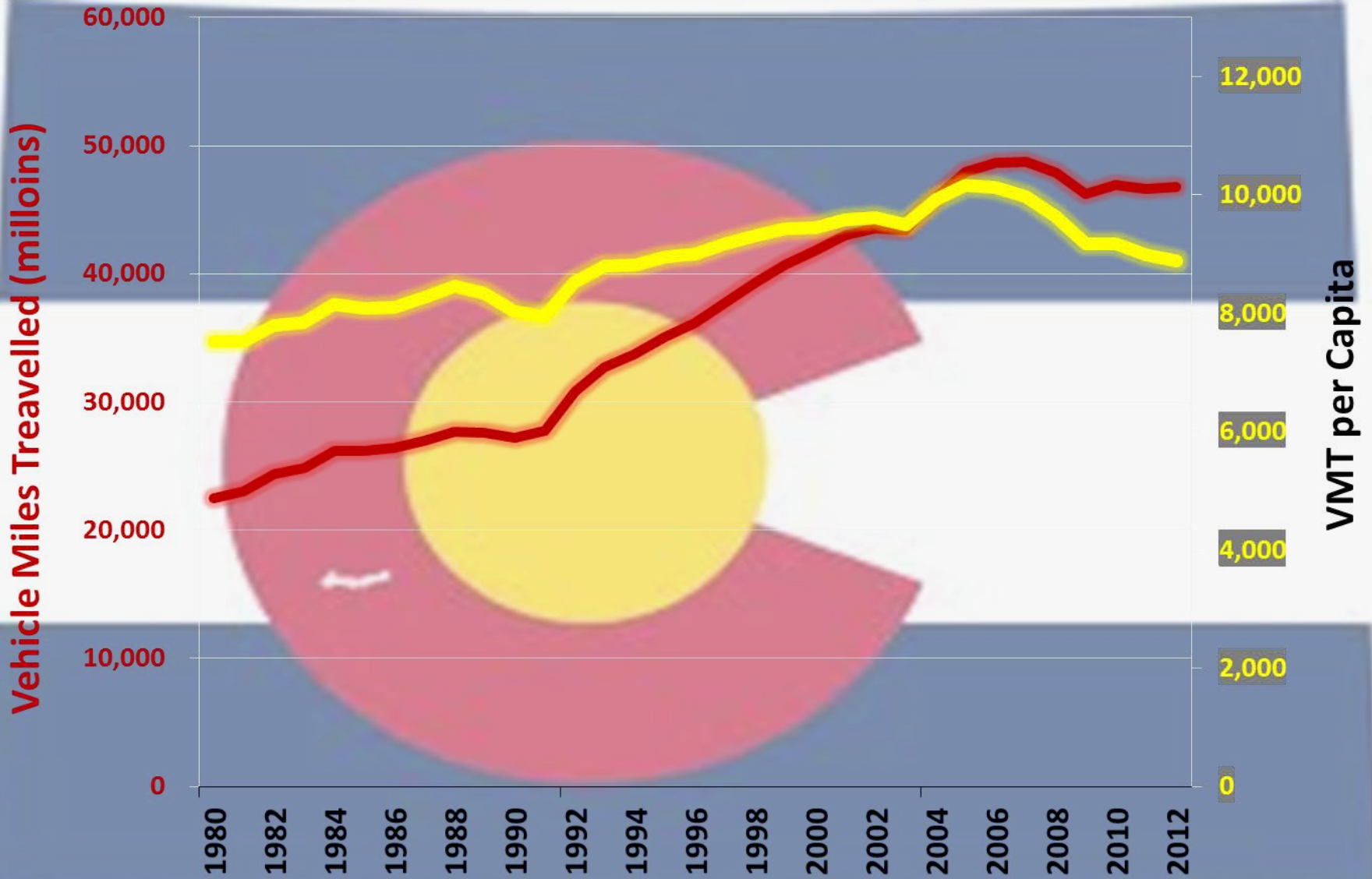


# Washington VMT Modeling Refinement (2014)

- ✓ Prior forecast model results were not consistent with
  - Near-term trend in statewide traffic
  - National trends in traffic
  - Current VMT research showing flattening of VMT
- ✓ Consistently over-forecasted VMT

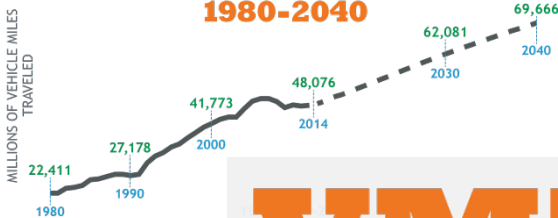


# Colorado



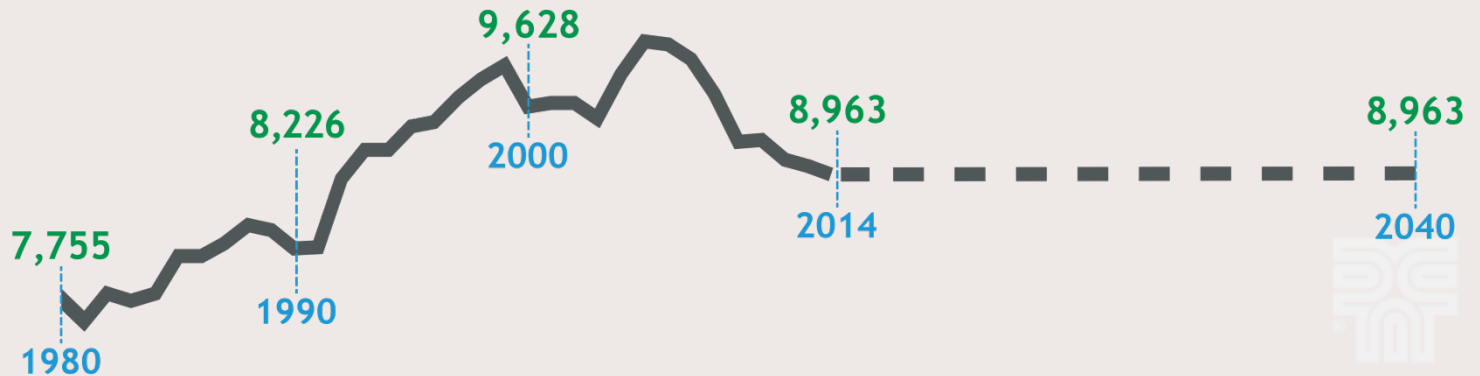
# Colorado VMT Policy

## TOTAL ANNUAL VMT IN COLORADO 1980-2040



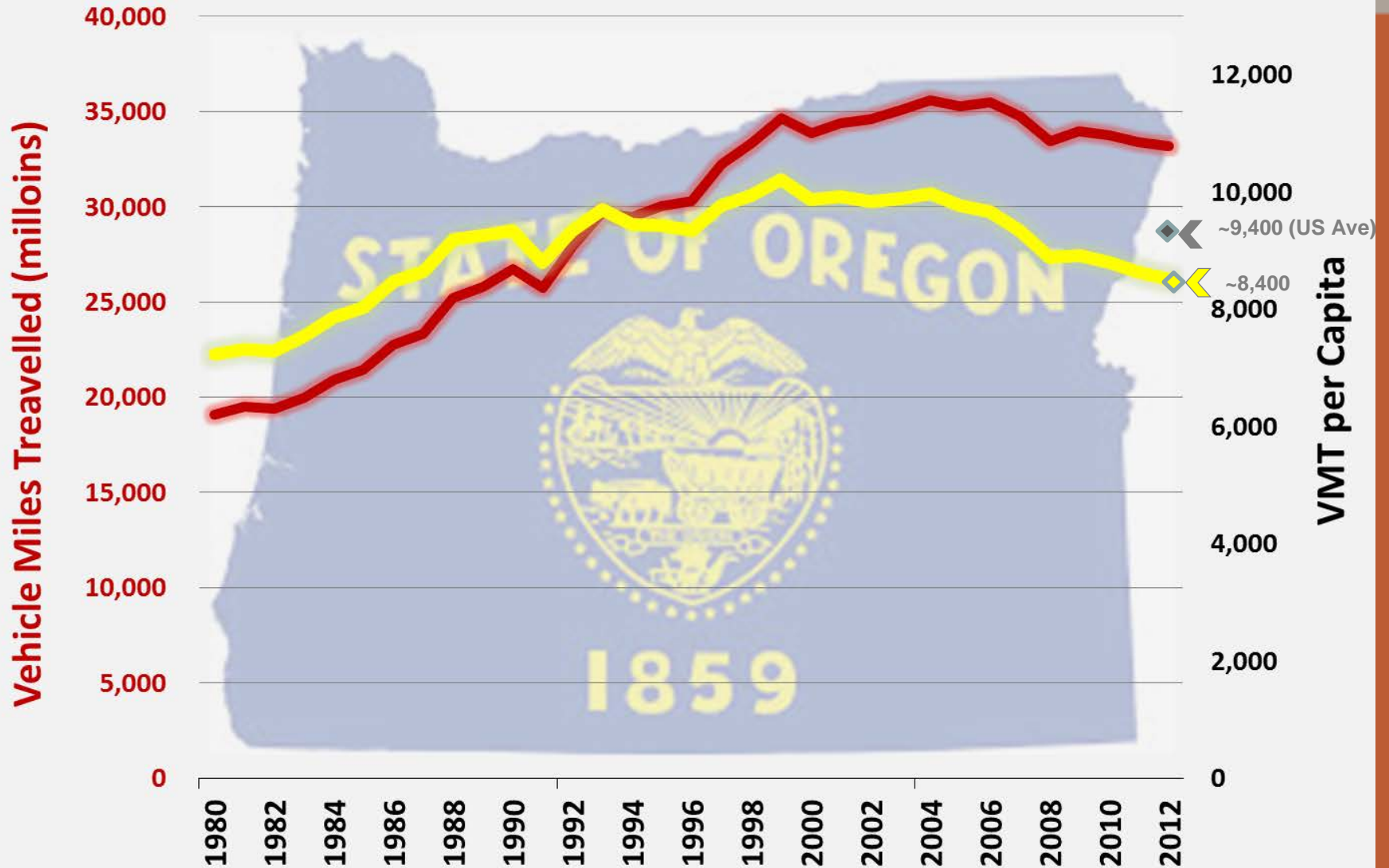
# VMT PER CAPITA IN COLORADO 1980-2040

VEHICLE MILES TRAVELED



YEARS 1980-2040

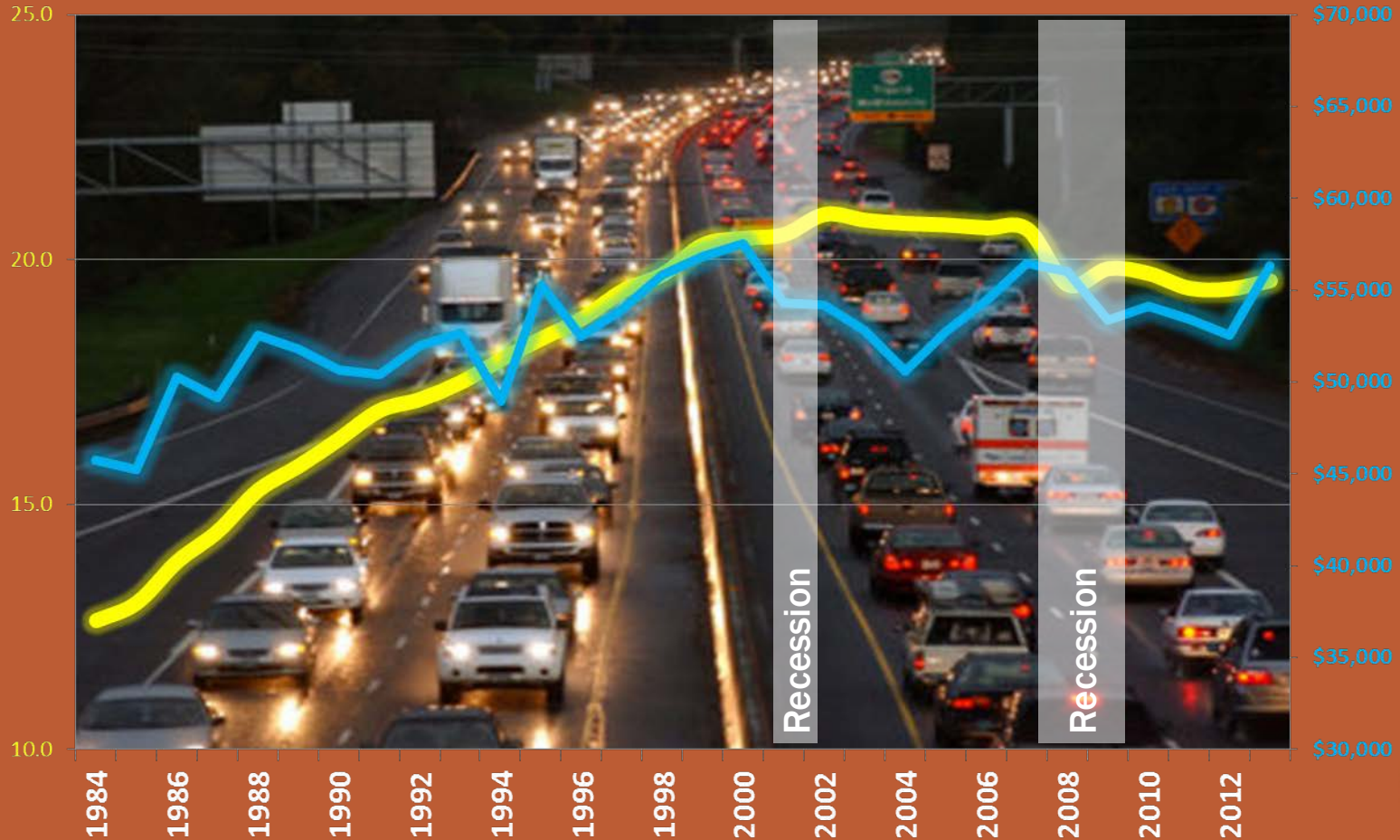
# Oregon



# Oregon VMT & Median Income History

Billions of Annual  
VMT

Median Income  
Inflated to 2013



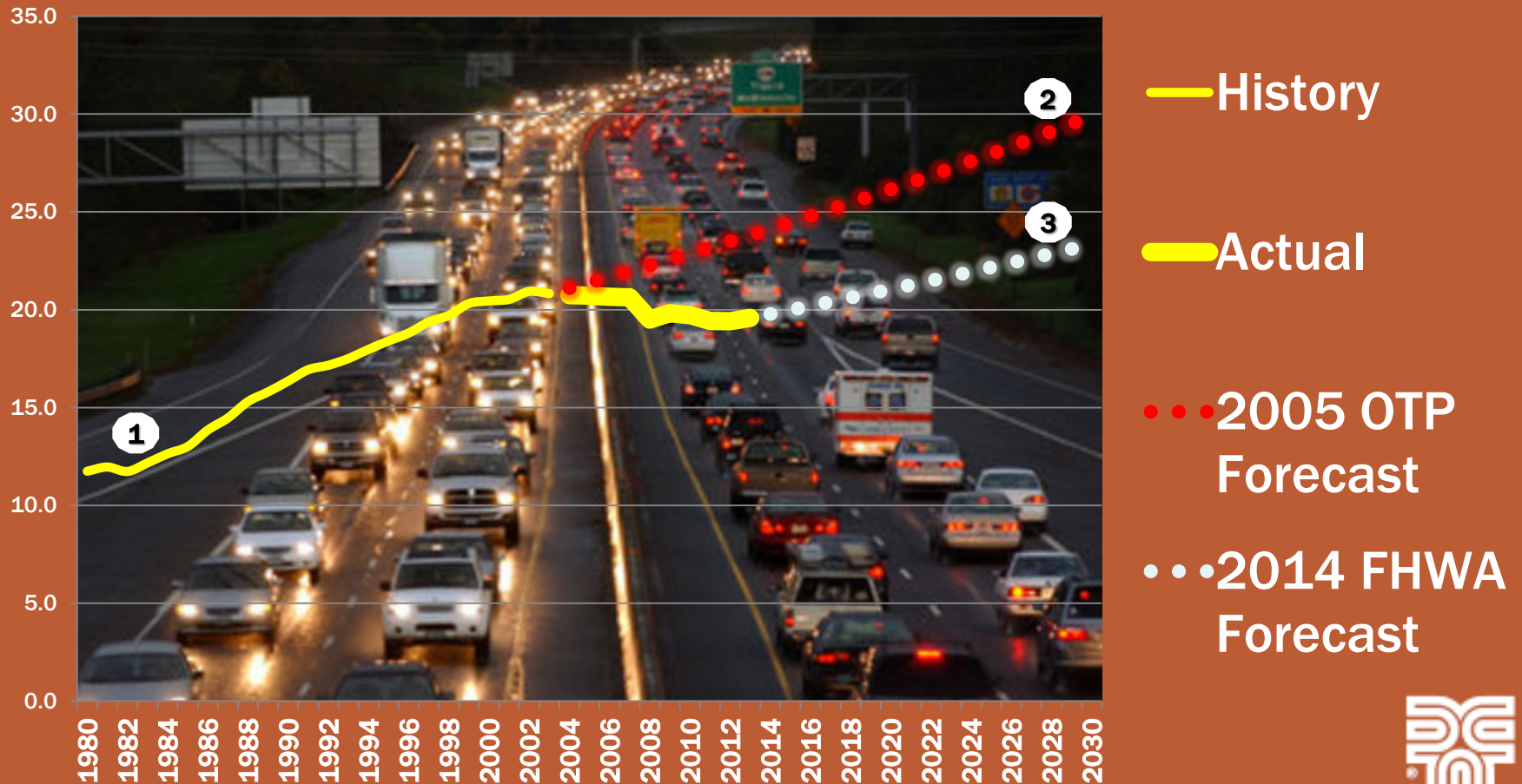
Source: ODOT, Transportation Development, US Census



# Oregon VMT

## Oregon State Highway VMT

Billions of Annual VMT

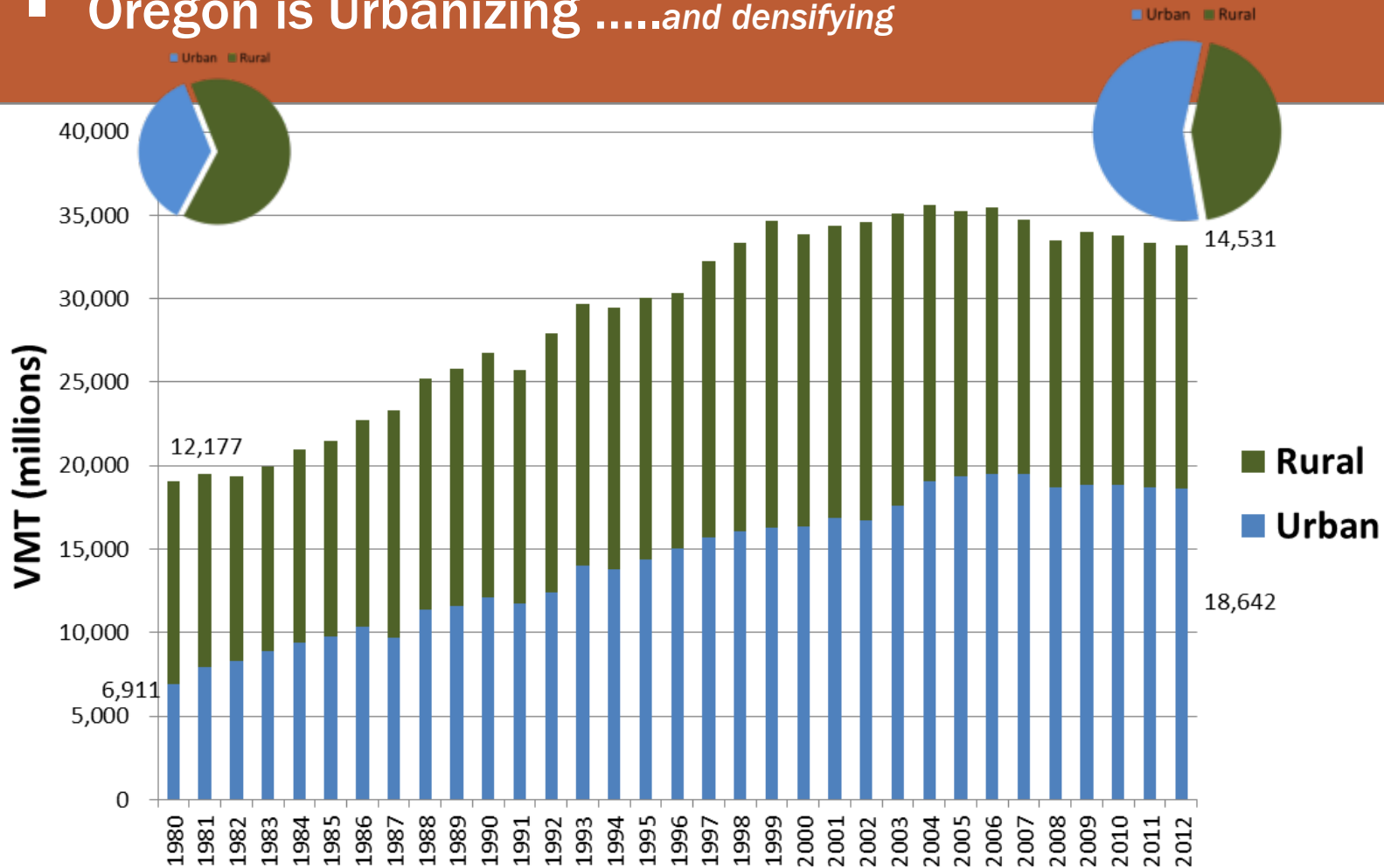


Source: (1) VMT Data - ODOT, Transportation Development, (2) 2005 OTP Update, (3) FHWA, 2014



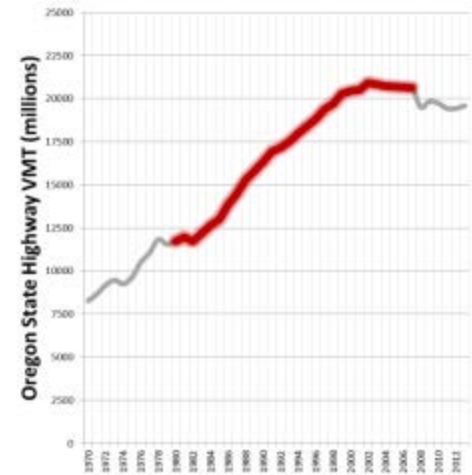
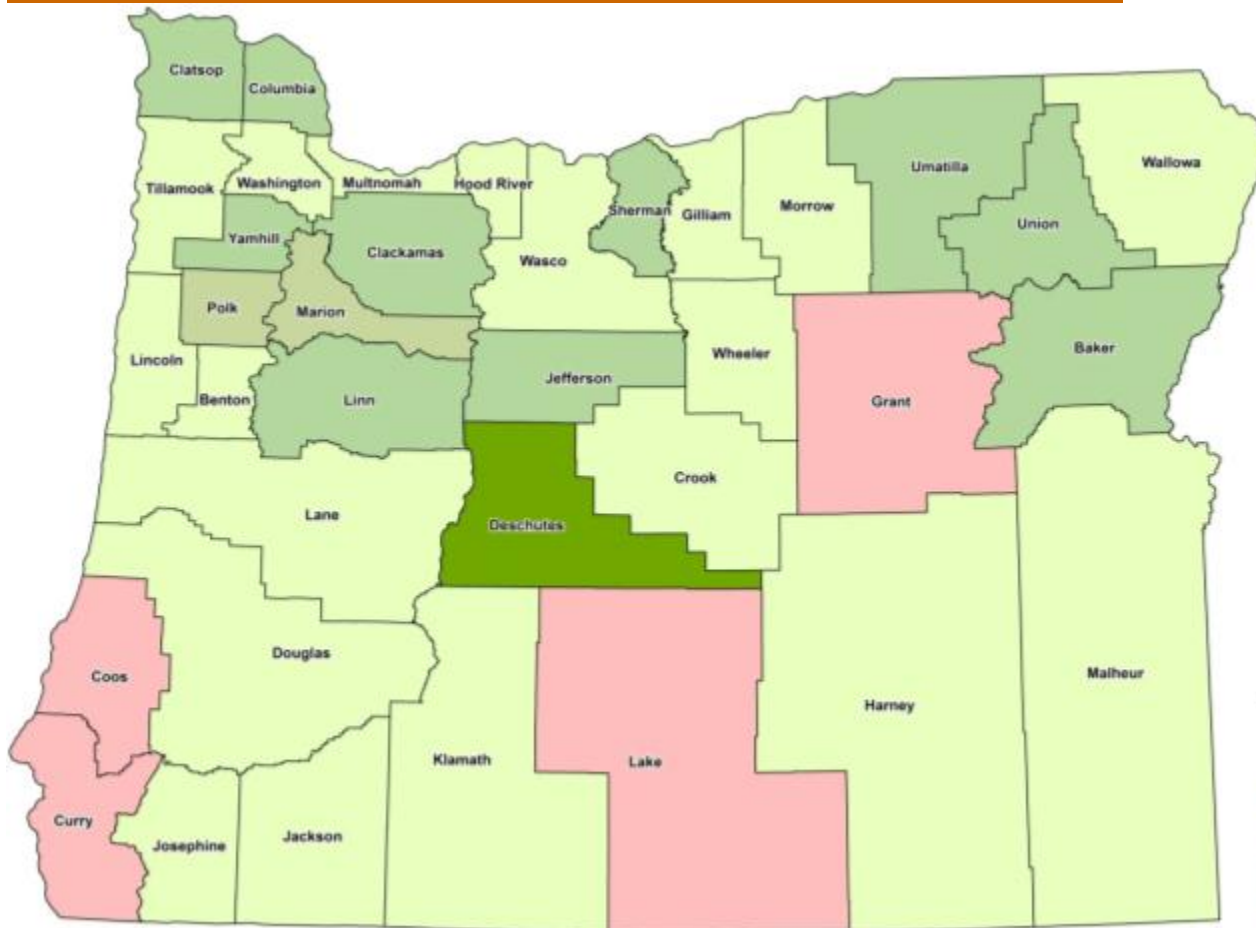
# Oregon VMT History

## ■ Oregon is Urbanizing .....and densifying

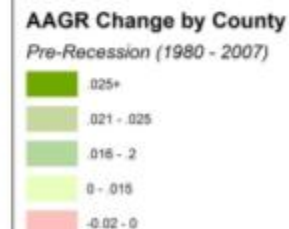


# Check, Back-Check, Assess & Advise

## Pre-Recession: 1980-2007



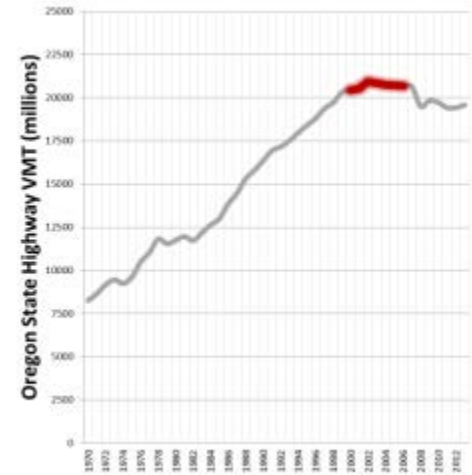
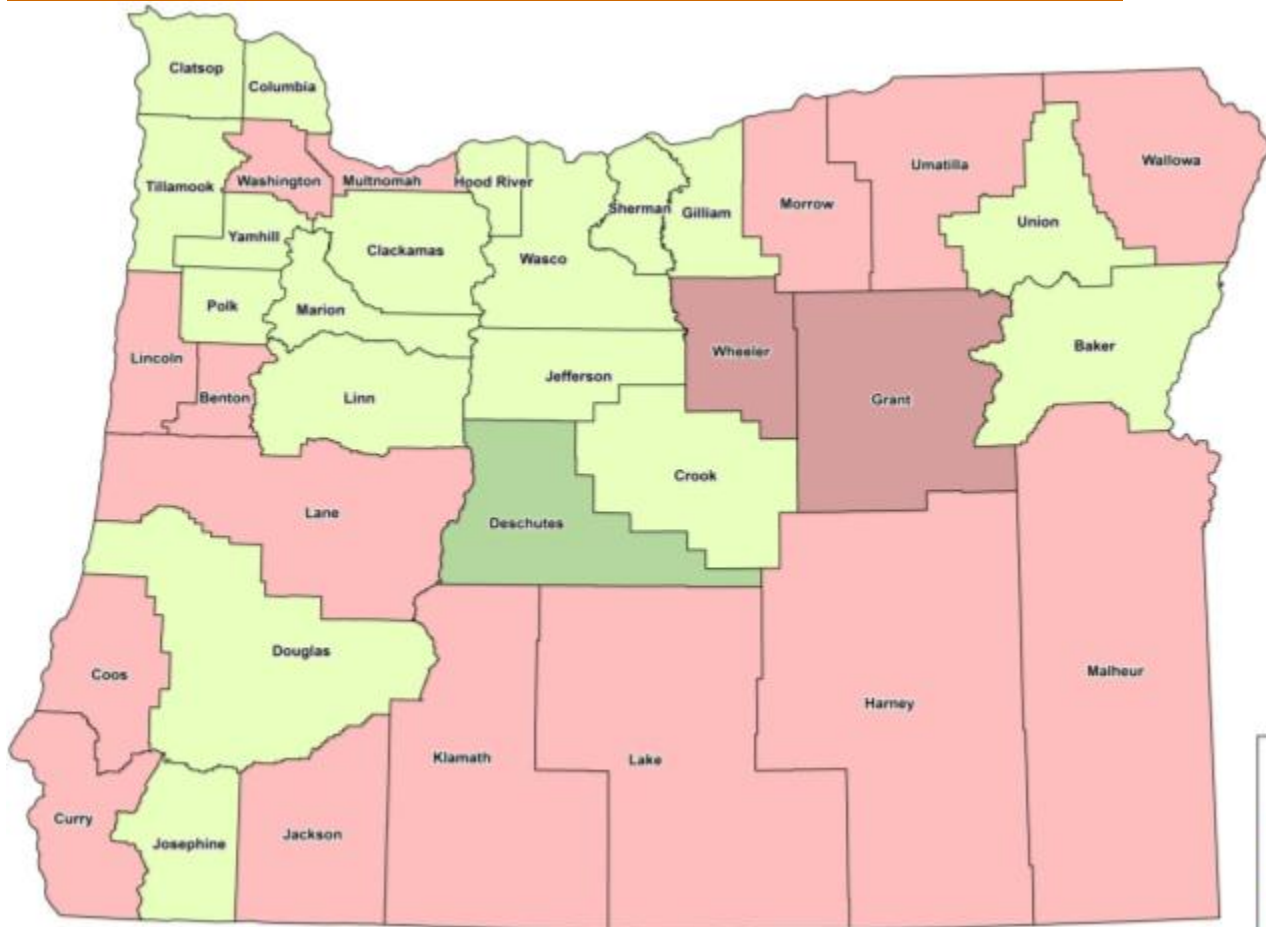
VMT on Oregon State Highways, By County



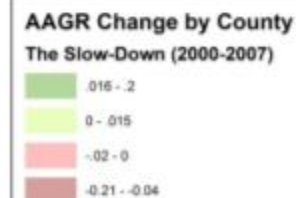


# Check, Back-Check, Assess & Advise

## The Slow-Down: 2000-2007

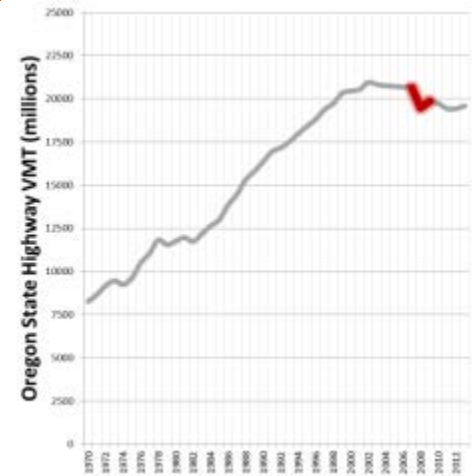
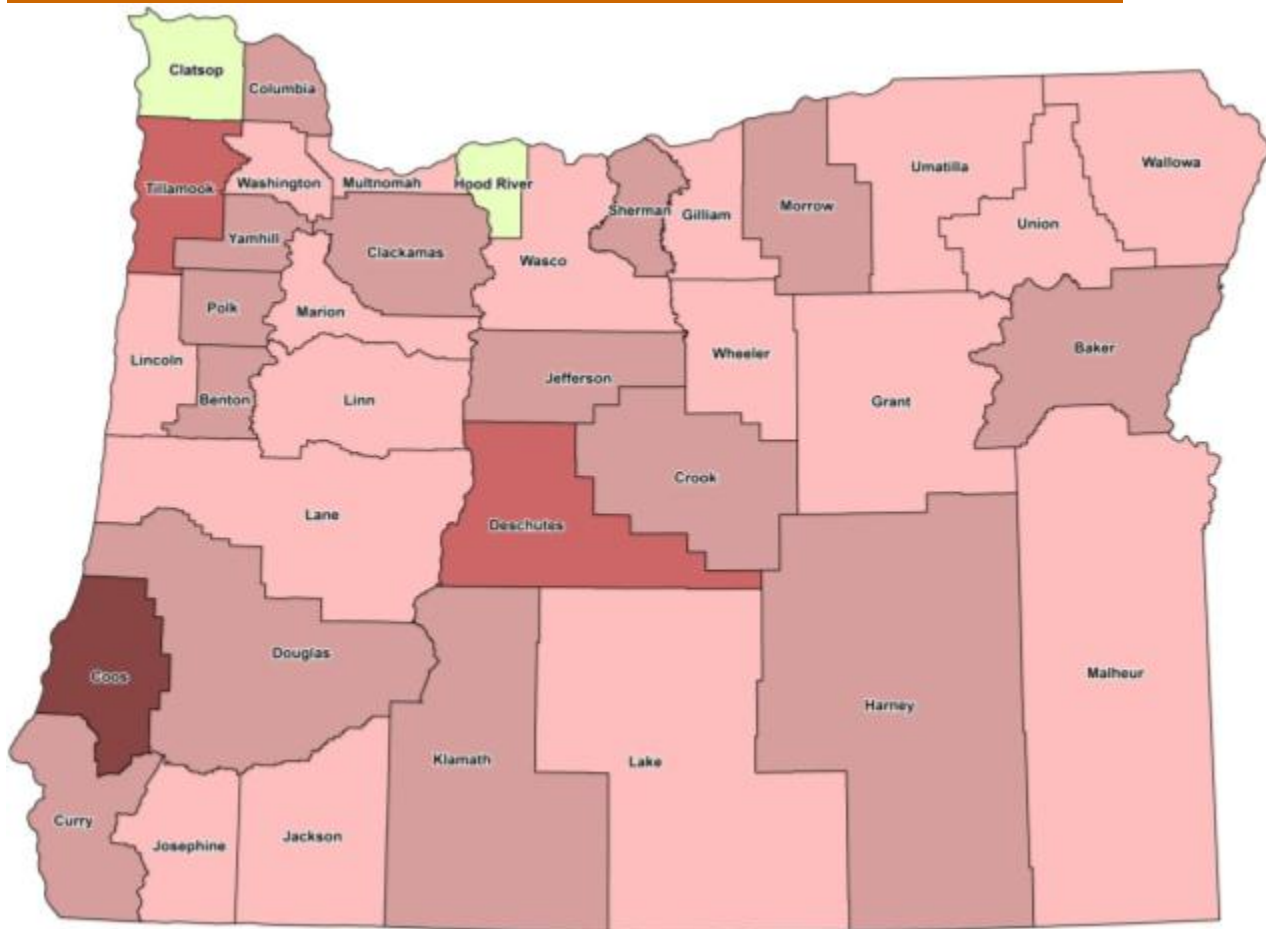


VMT on Oregon State Highways, By County

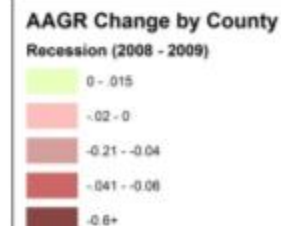


# Check, Back-Check, Assess & Advise

## Recession: 2008-2009

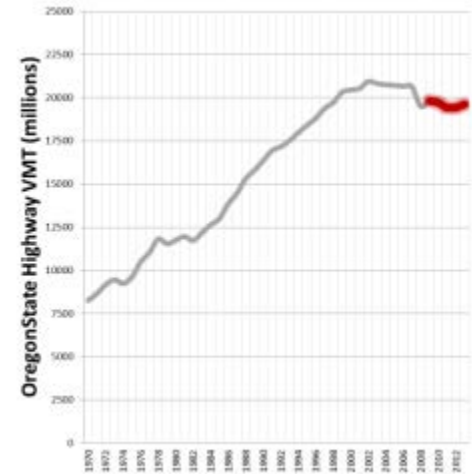
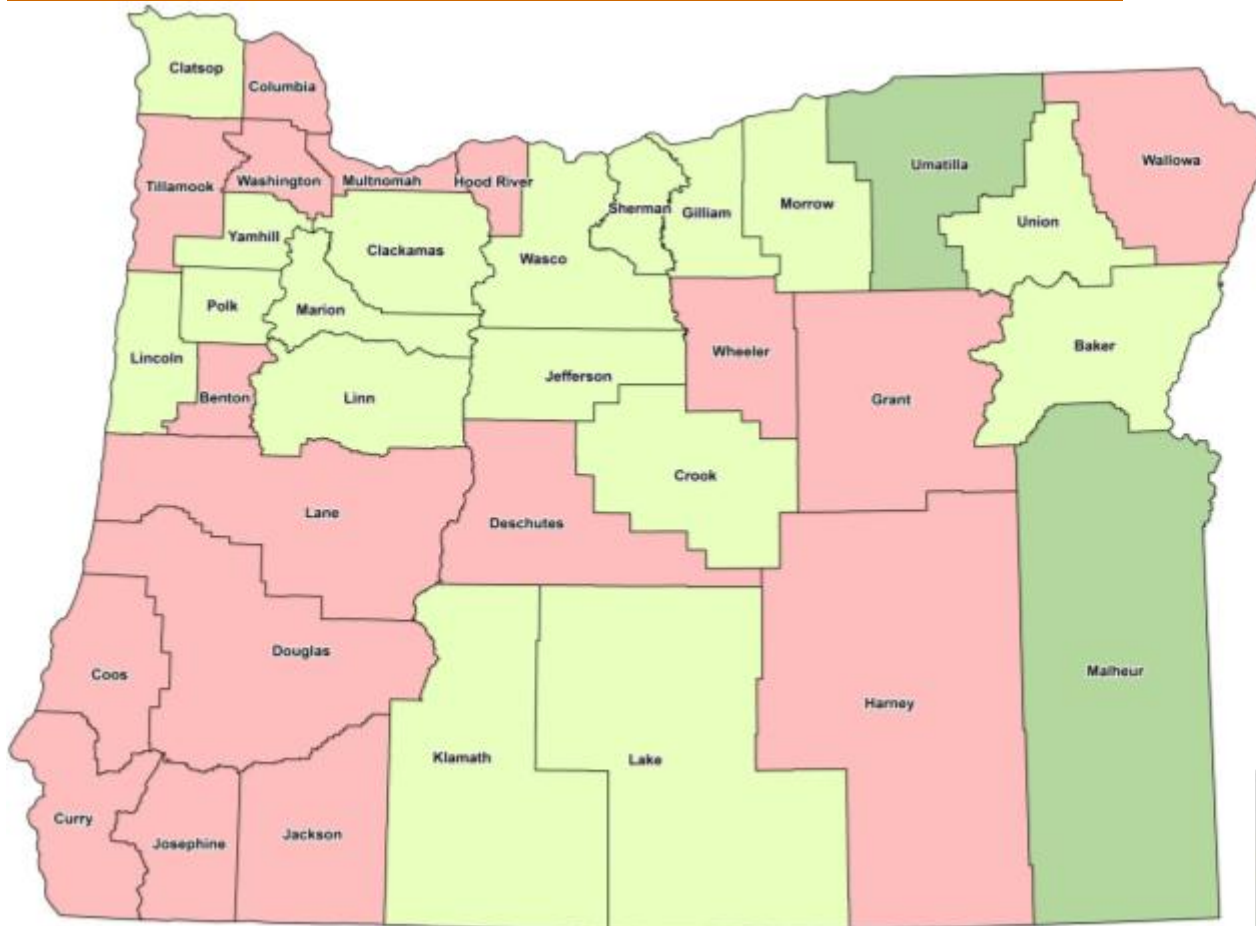


VMT on Oregon State Highways, By County



# Check, Back-Check, Assess & Advise

## Post Recession: 2009-2013

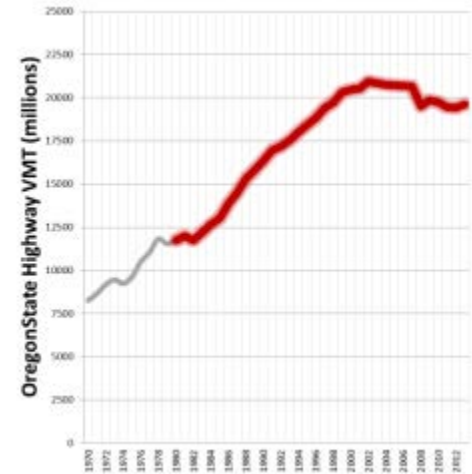
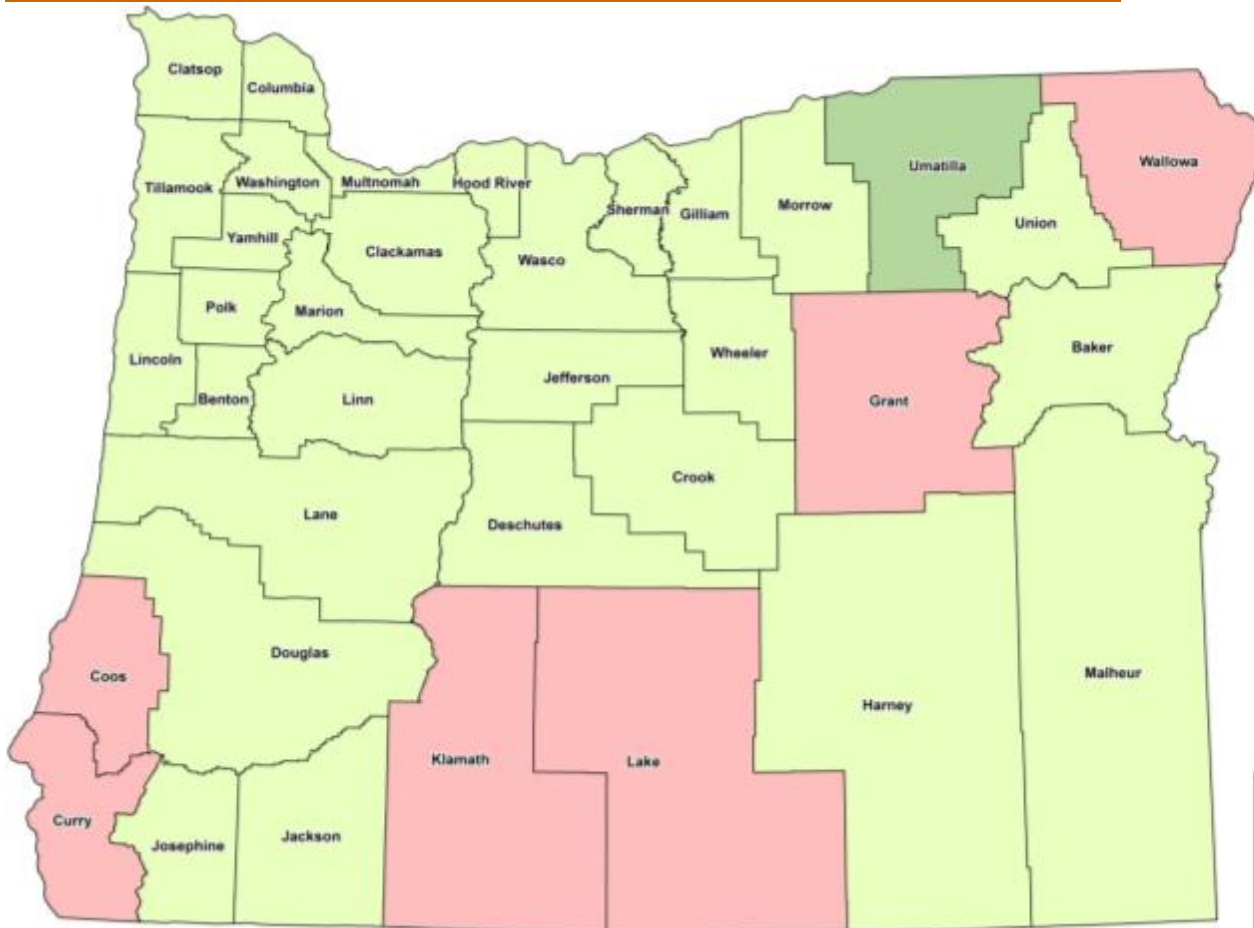


VMT on Oregon State Highways, By County



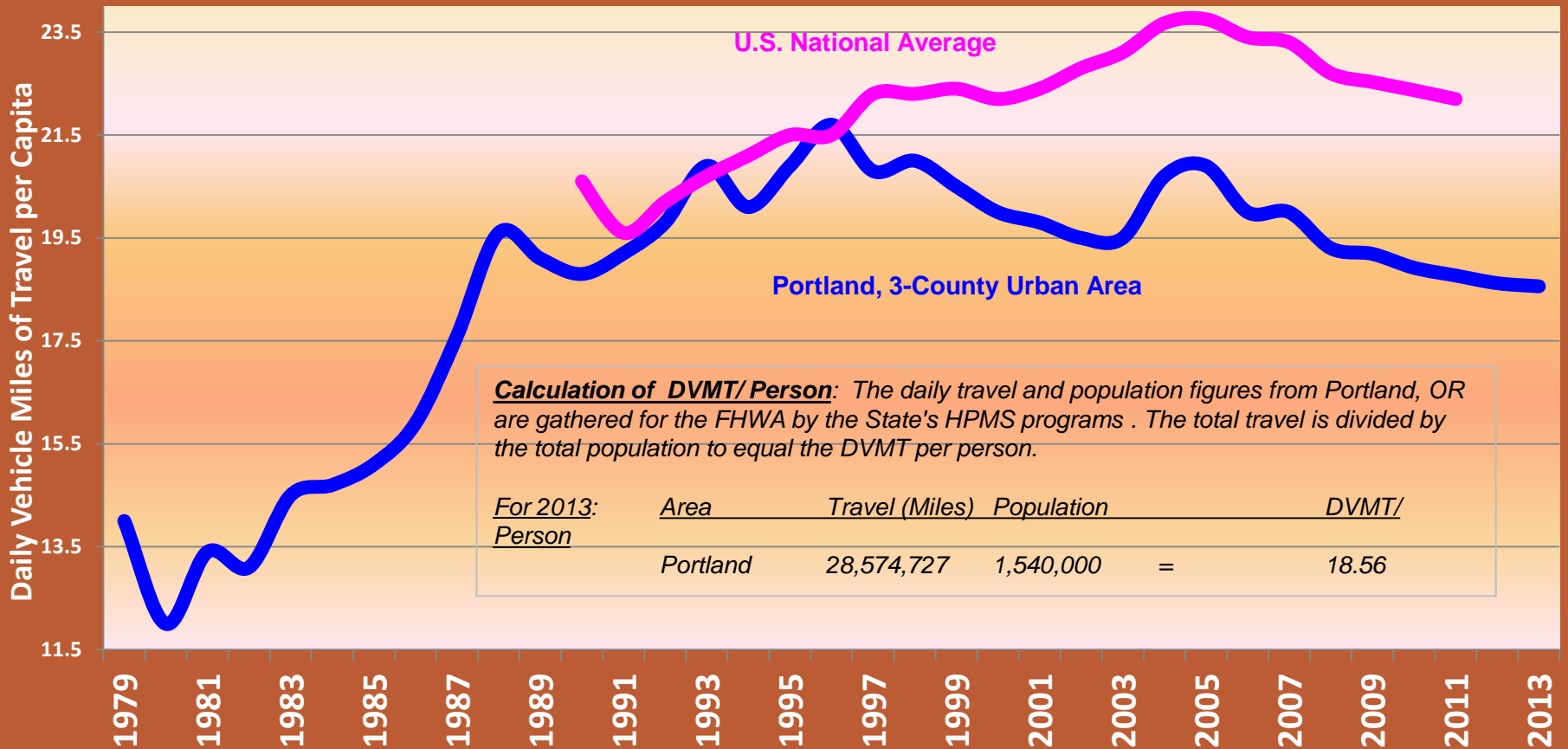
# Check, Back-Check, Assess & Advise

To Date: 1980-2013



VMT on Oregon State Highways, By County

# METRO VMT Trends/Forecasts



**Calculation of DVMT/Person:** The daily travel and population figures from Portland, OR are gathered for the FHWA by the State's HPMS programs. The total travel is divided by the total population to equal the DVMT per person.

| <u>For 2013:</u> | <u>Area</u> | <u>Travel (Miles)</u> | <u>Population</u> | <u>DVMT/</u> |
|------------------|-------------|-----------------------|-------------------|--------------|
| <u>Person</u>    |             |                       |                   |              |
|                  | Portland    | 28,574,727            | 1,540,000         | = 18.56      |





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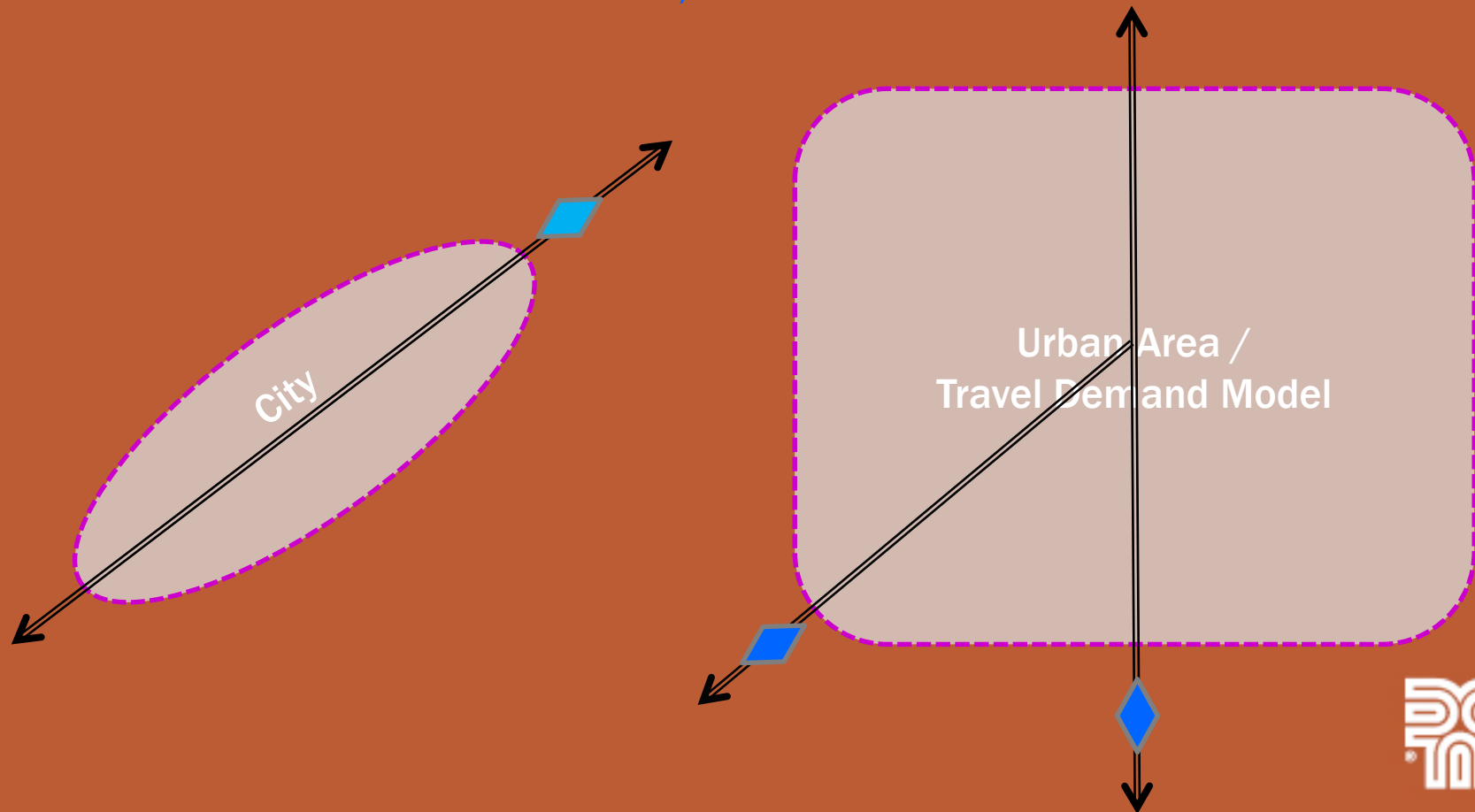


# ATR Data Use in Local Transportation Plans



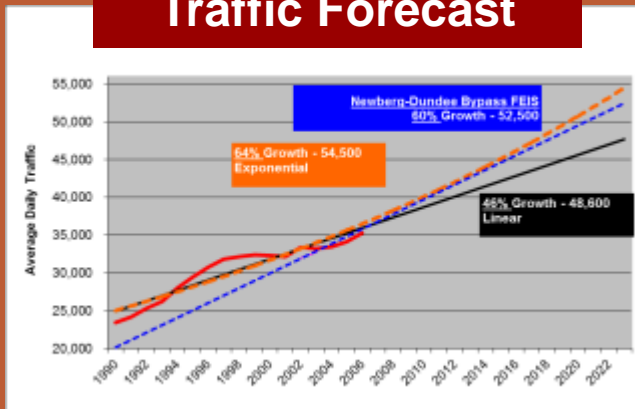
# ATR Data Use in Future Traffic Forecasts

- Establish 20-Year Planning Horizon Traffic Estimates
- Estimate External Station, 20-Year Traffic Estimates



# ATR Data Use in Transportation Planning

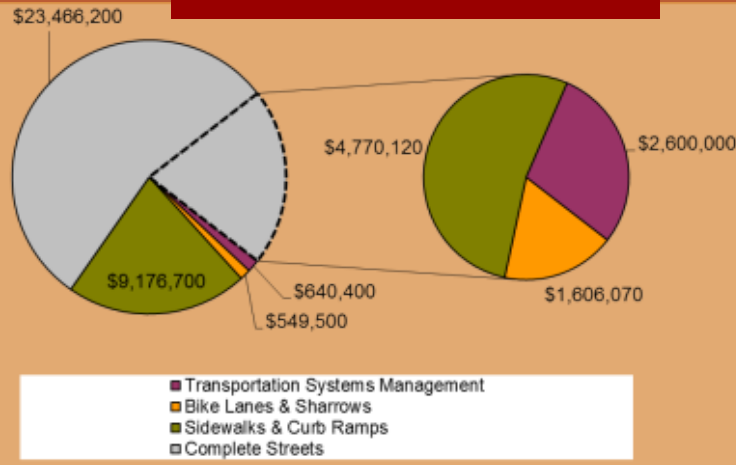
## Traffic Forecast



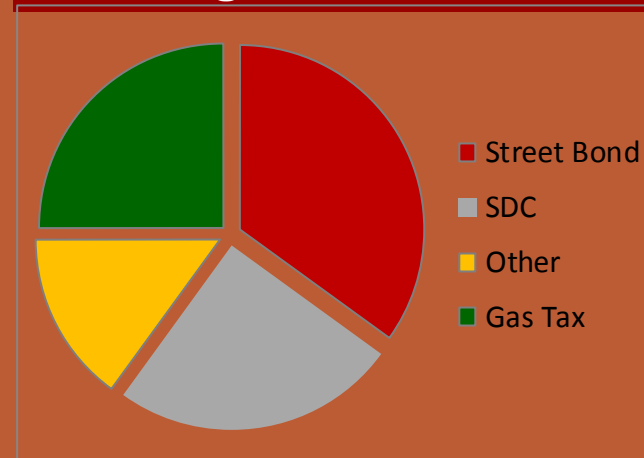
## Needs Assessment



## CIP

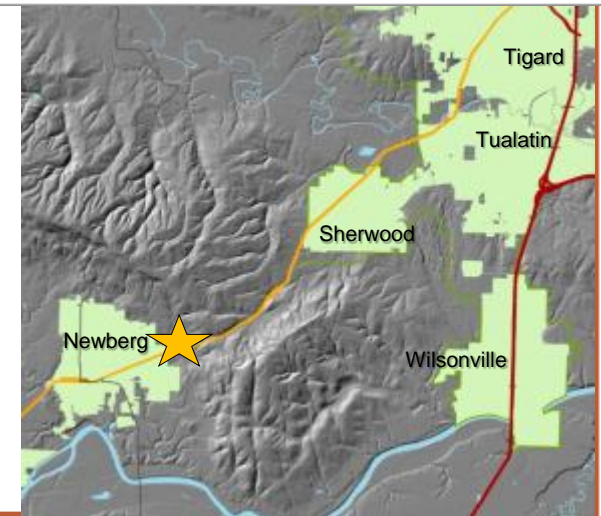
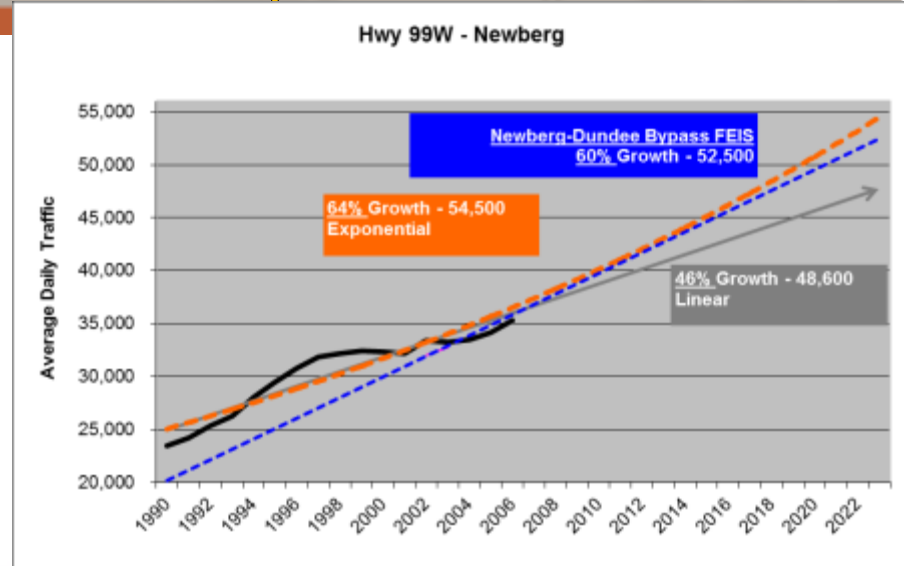


## Funding Plan / \$\$ Search

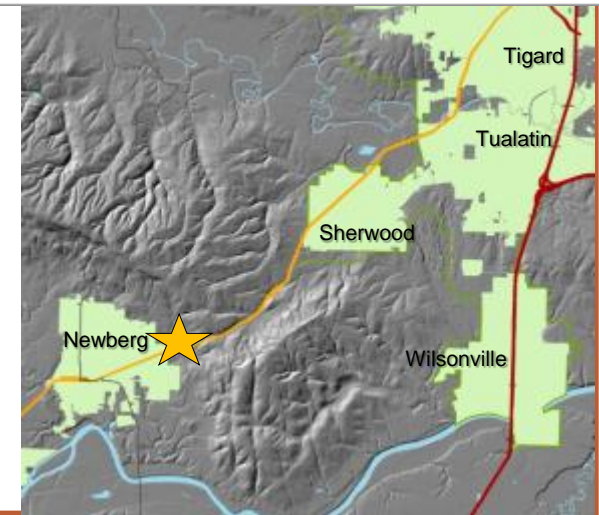
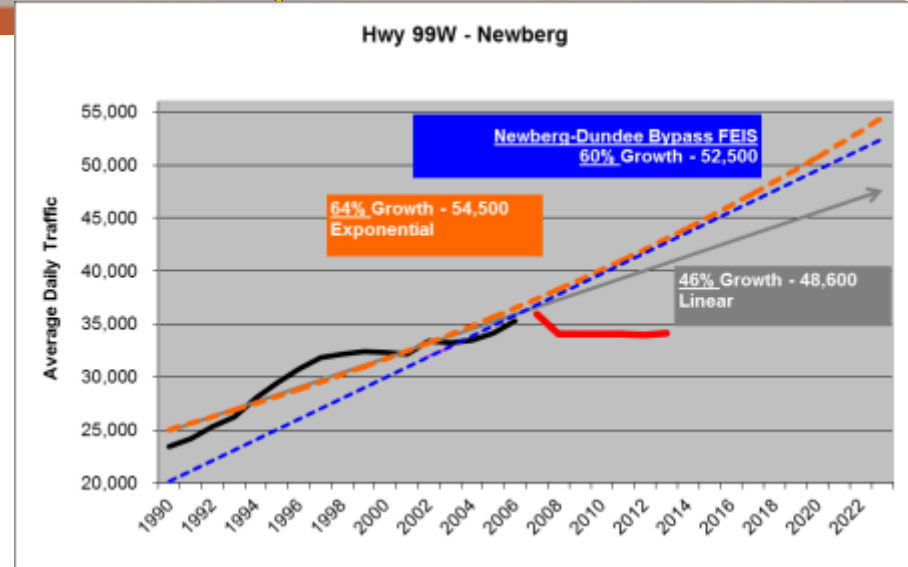




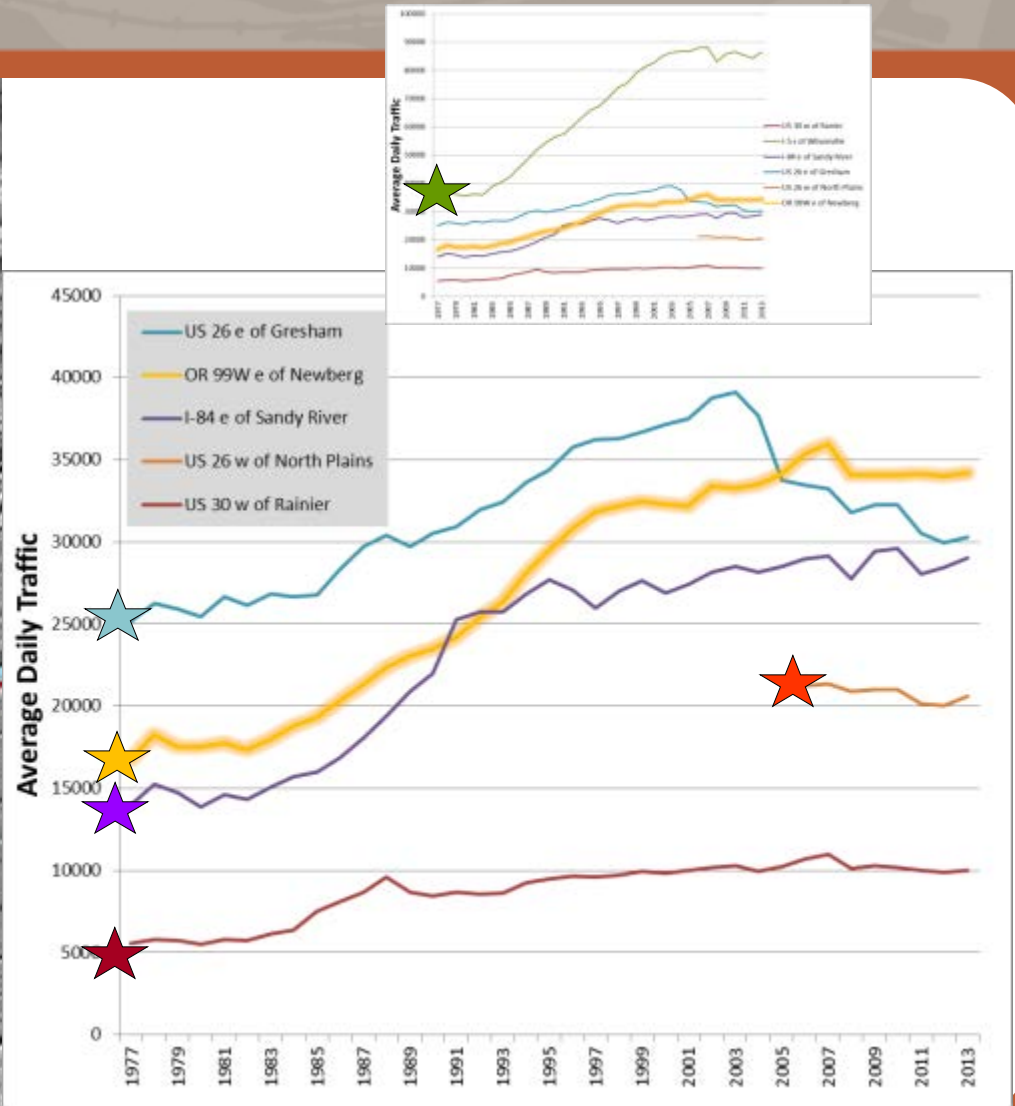
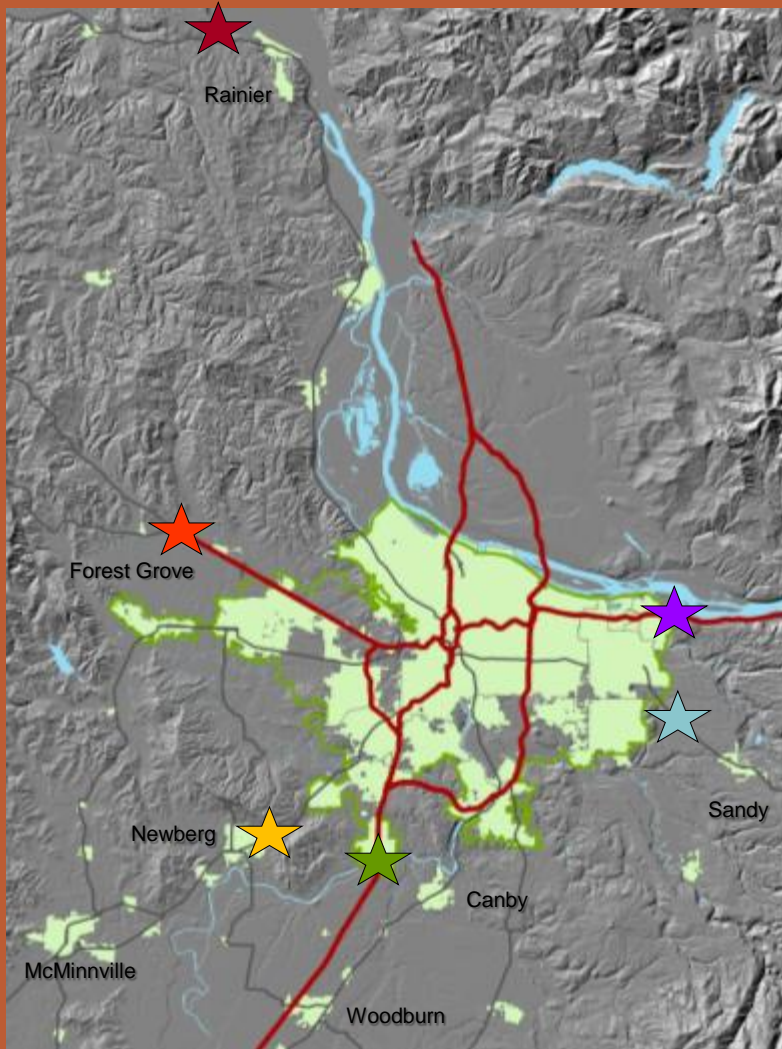
# ODOT Region 2 | 2006 McMinnville TSP Est



# ODOT Region 2 | 2006 McMinnville TSP Est

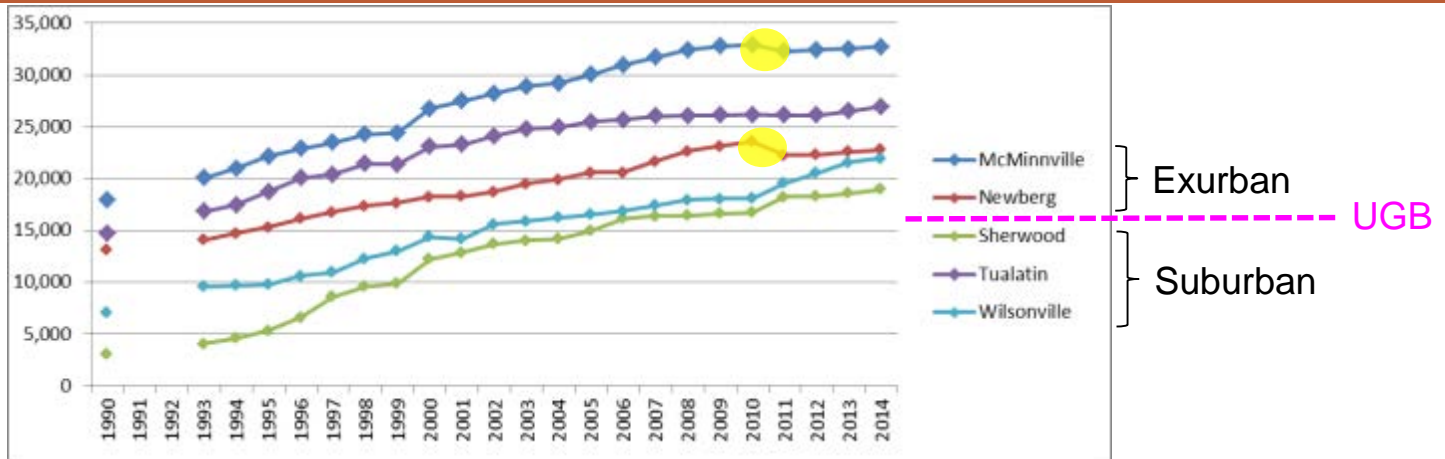


# PDX Cordon ADT History

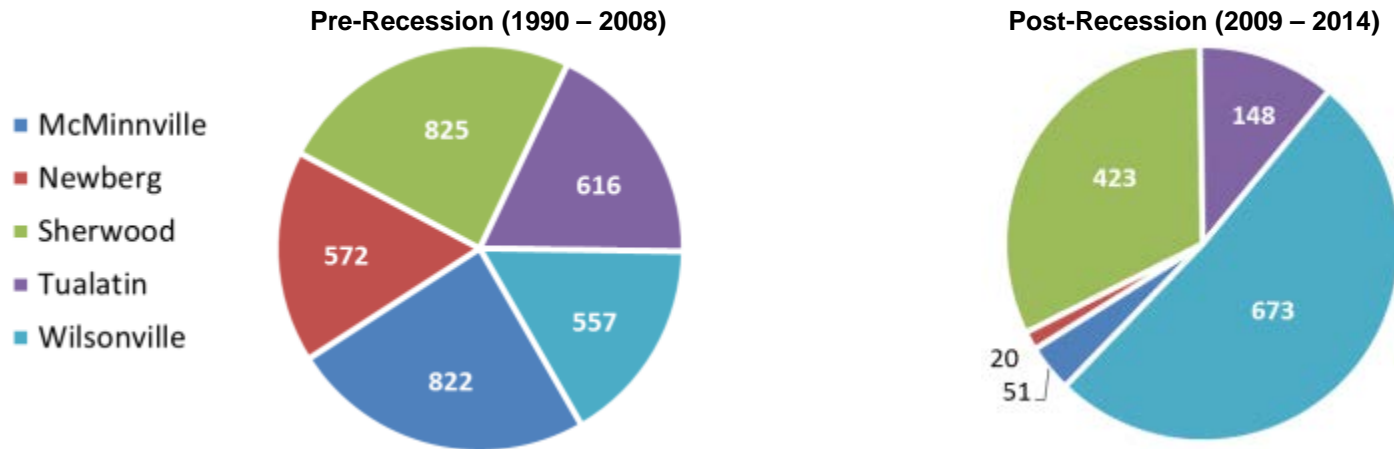


Source: ODOT Website, Transportation Development

# PDX City Populations: Southwest



## Average Annual Population Increase





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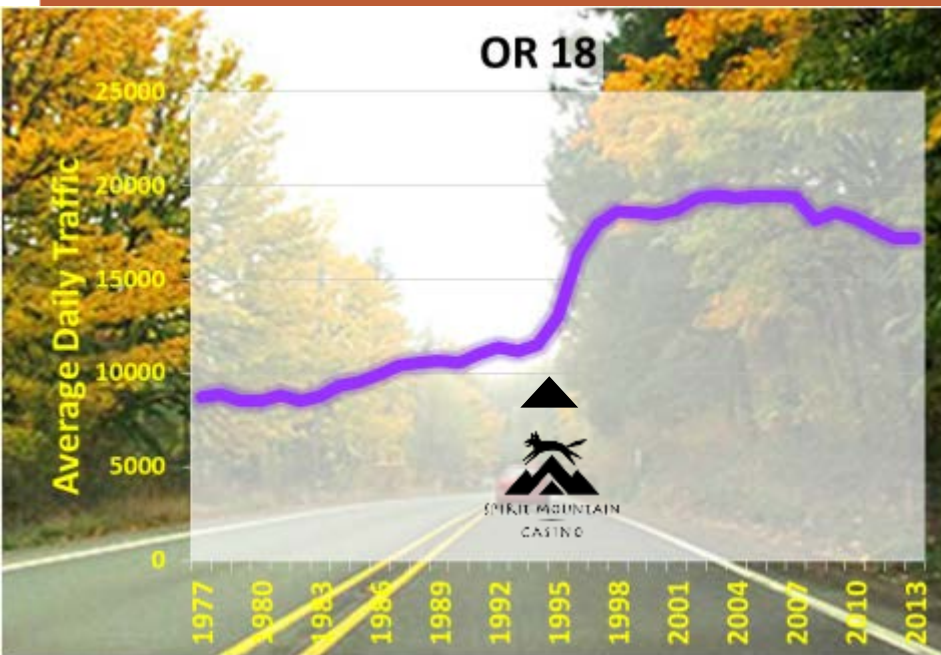
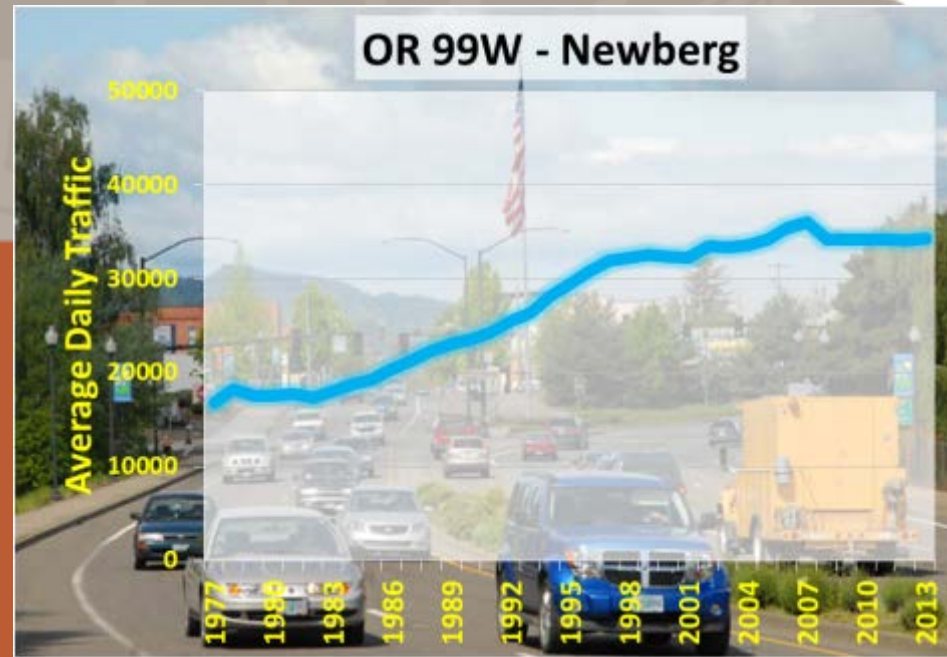
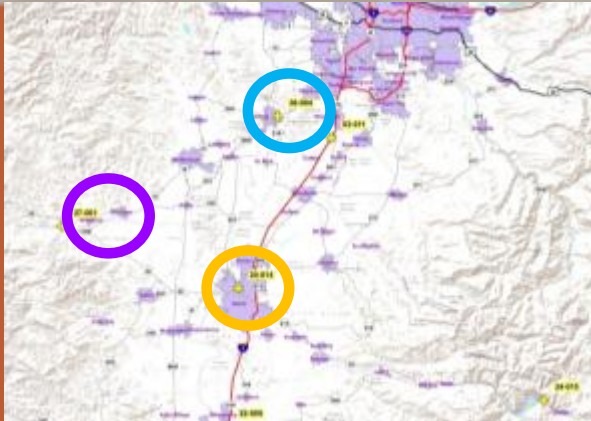
# **Cross-Willamette Valley Count Examples**

**Check, Back-check & Assess**

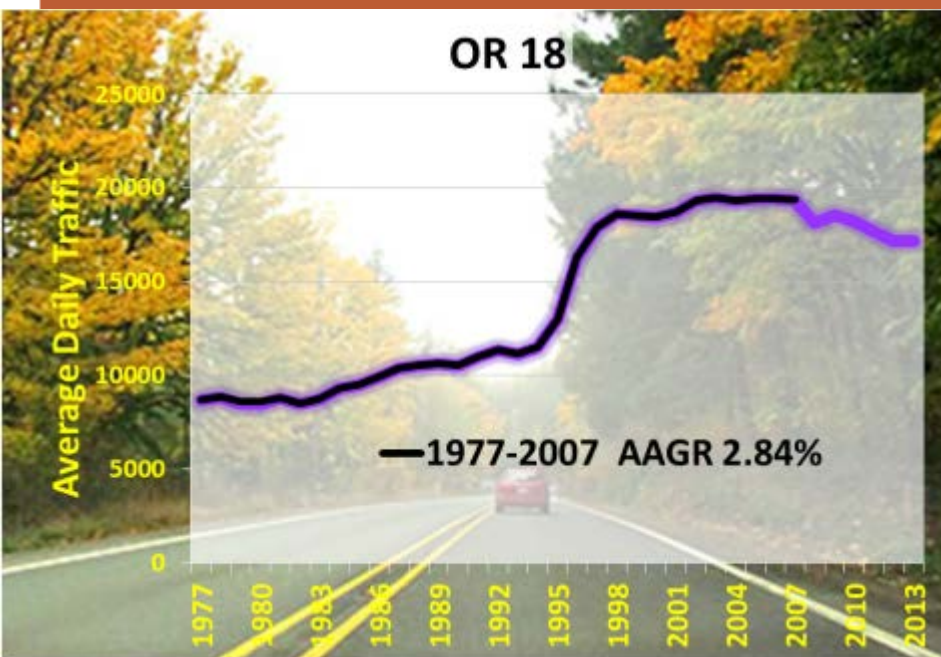
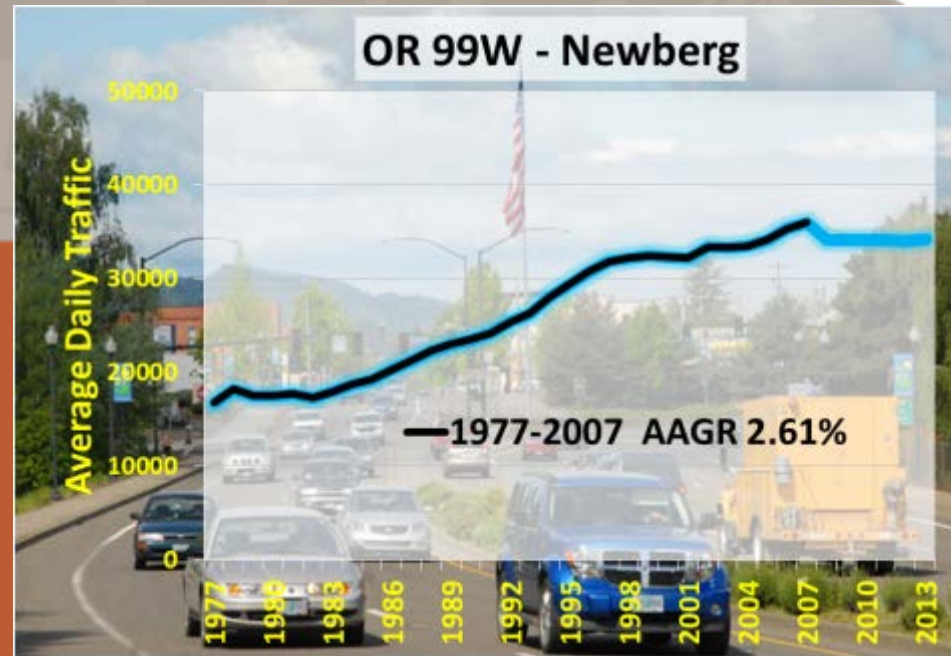
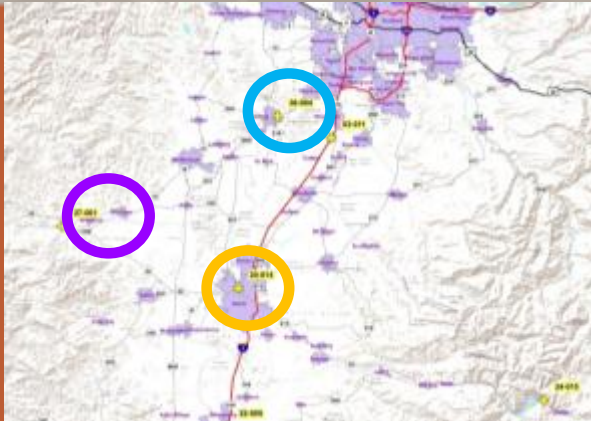




# History: 1977-2013

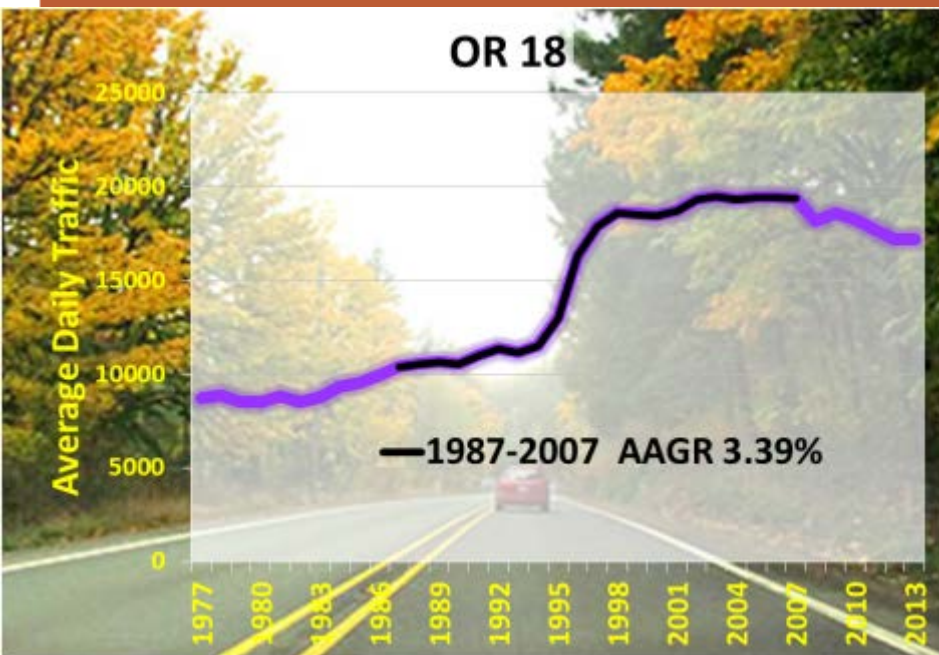
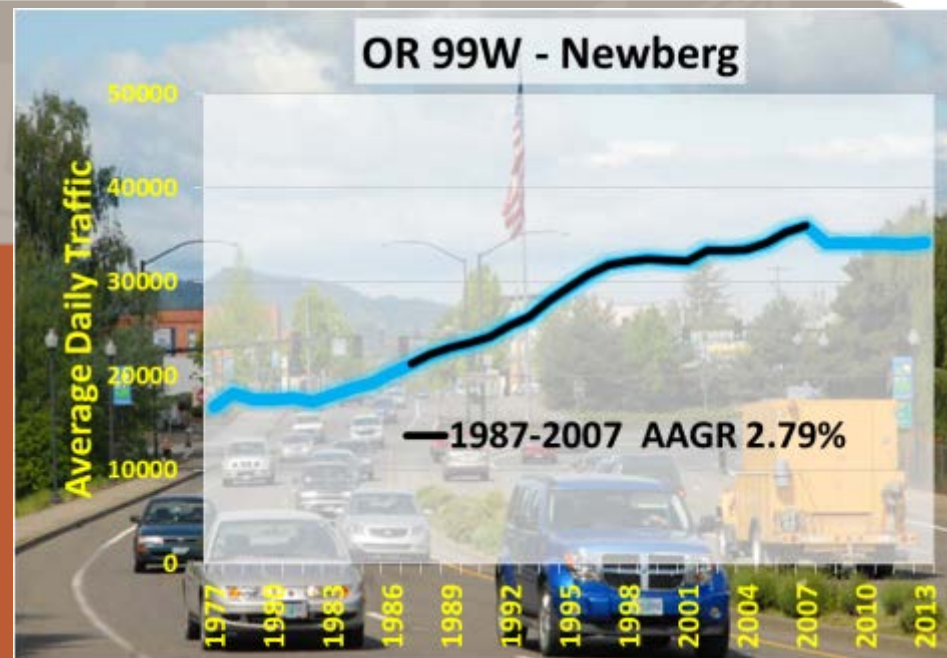
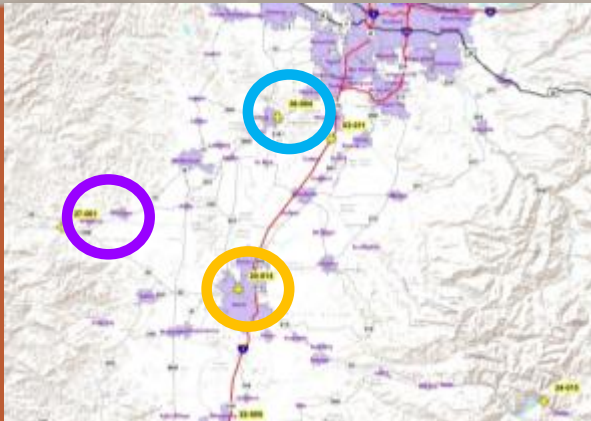


# 1977-2007 AAGR

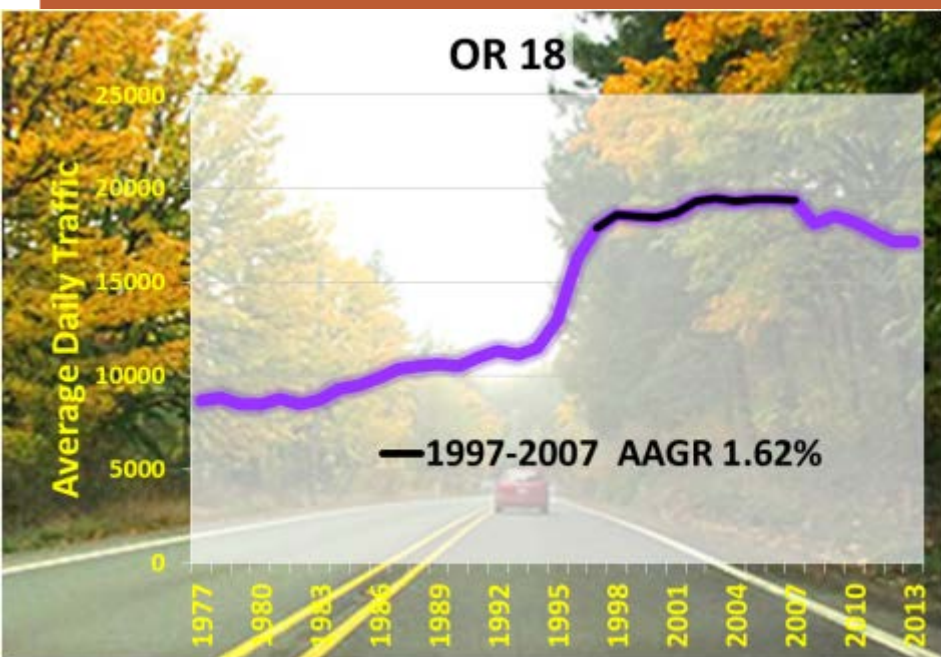
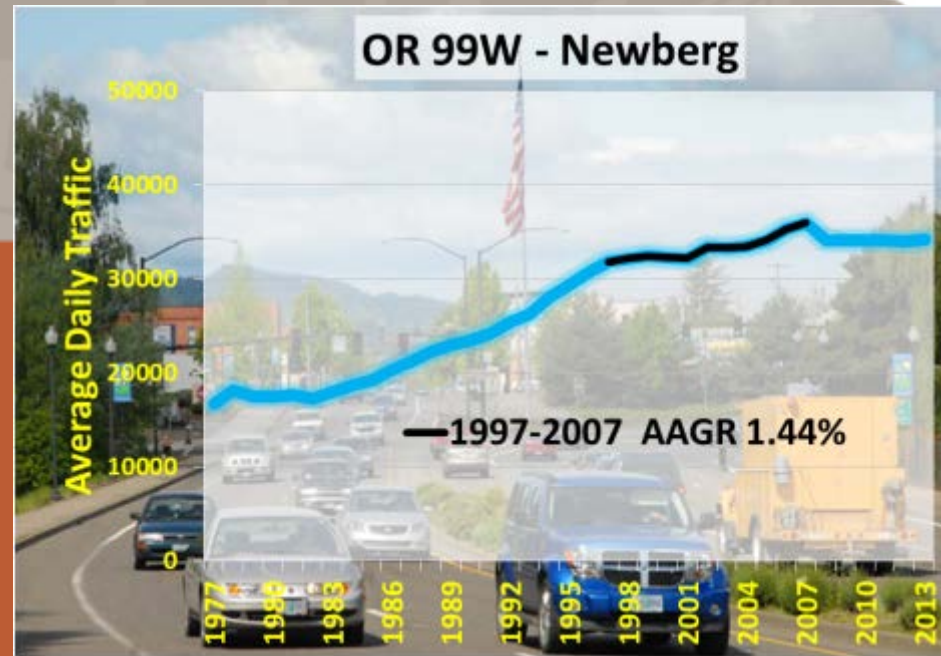
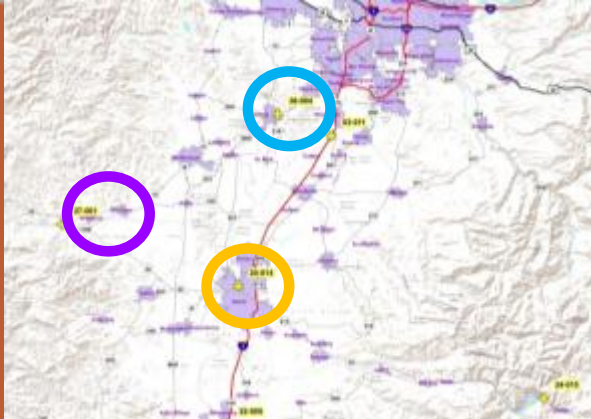




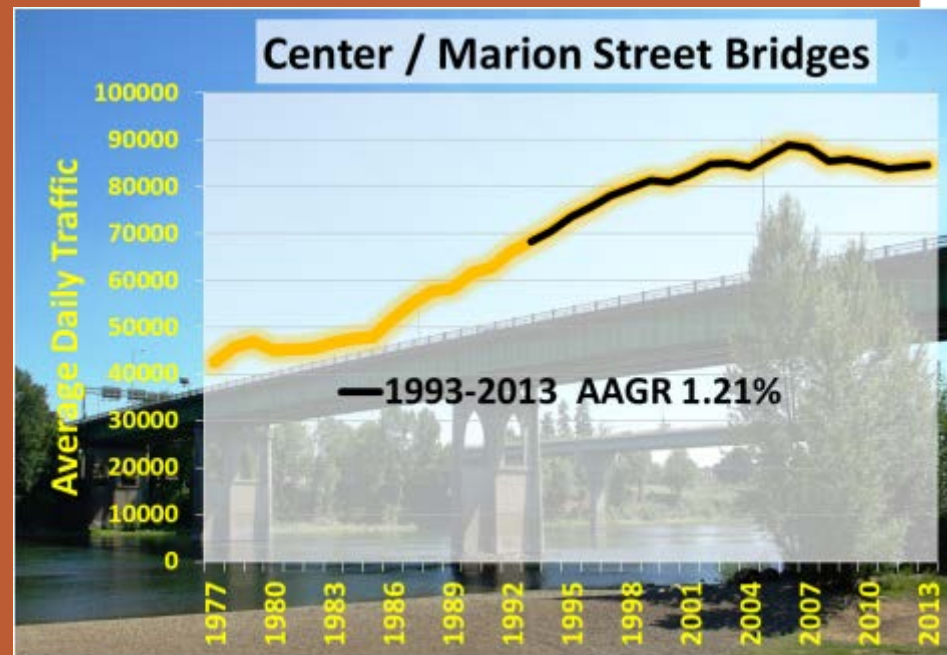
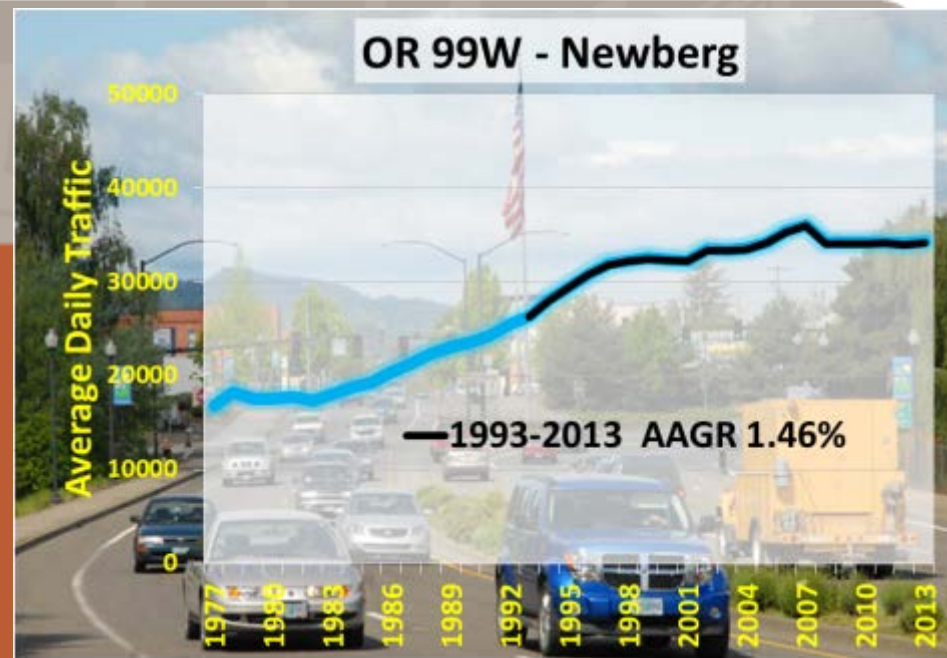
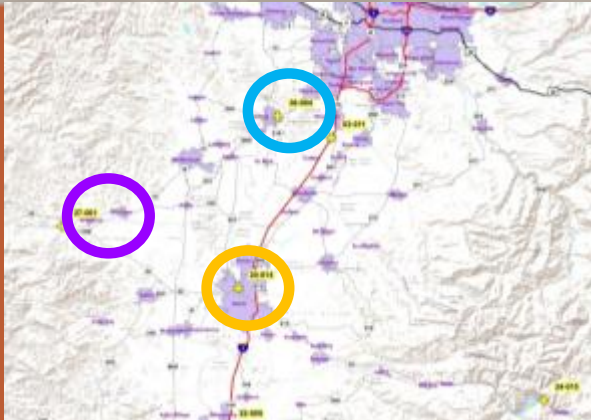
# 1987-2007 AAGR



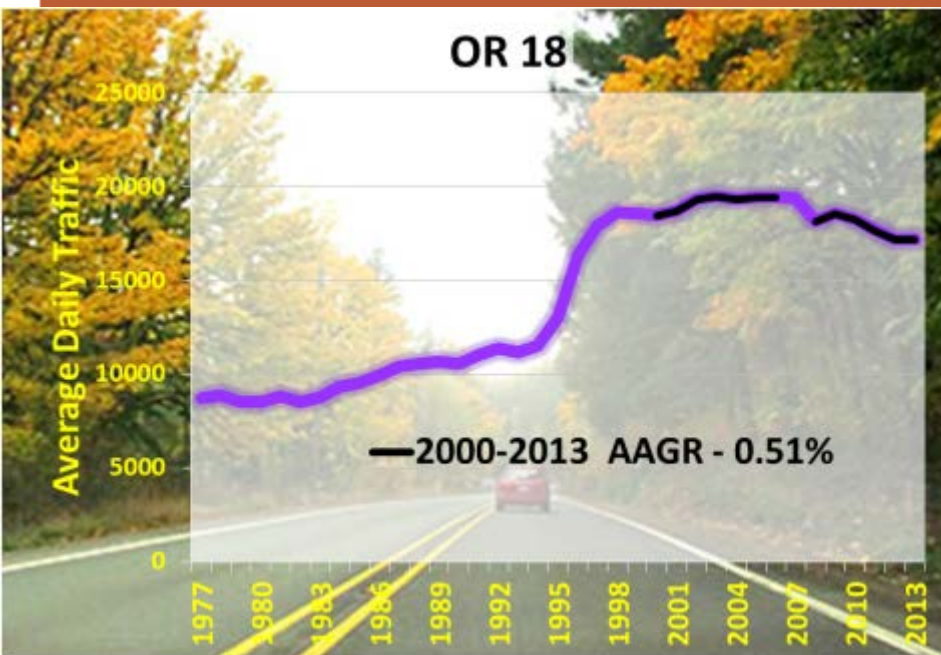
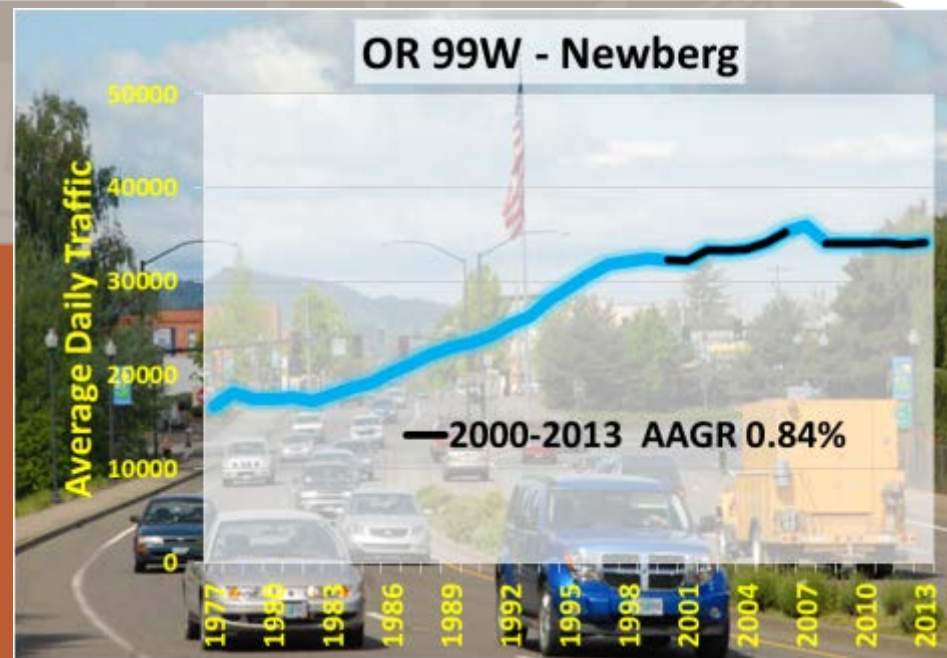
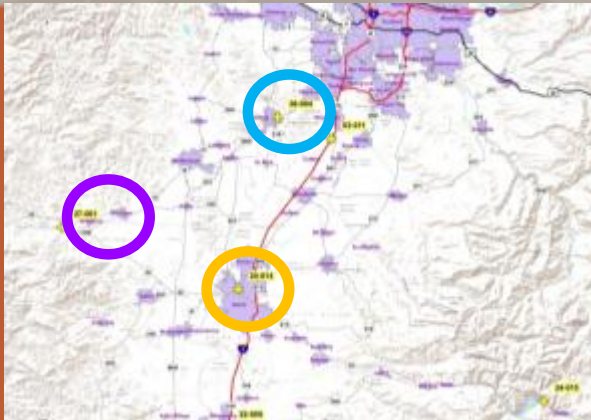
# 1997-2007 AAGR



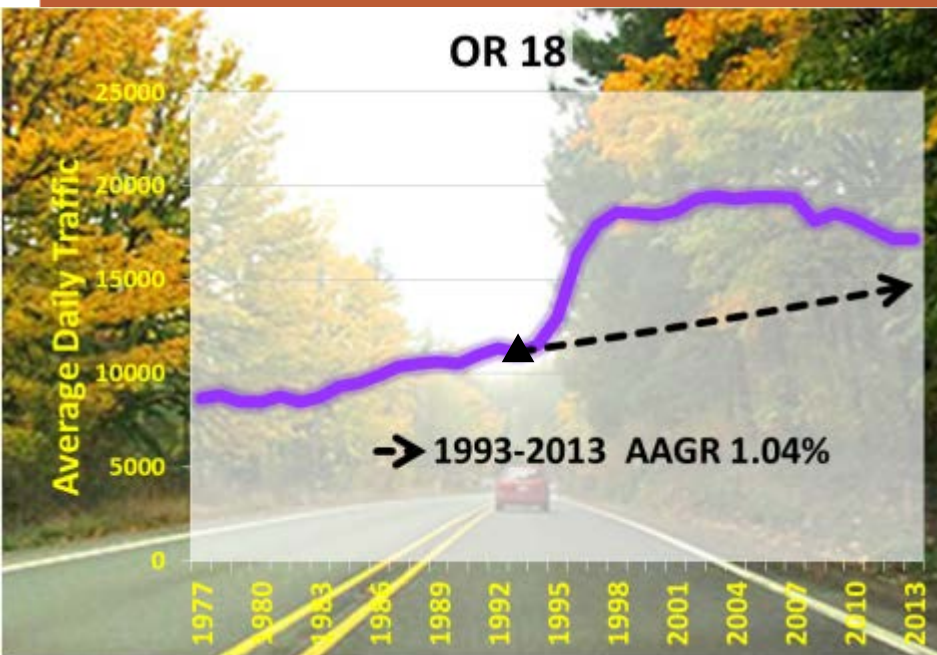
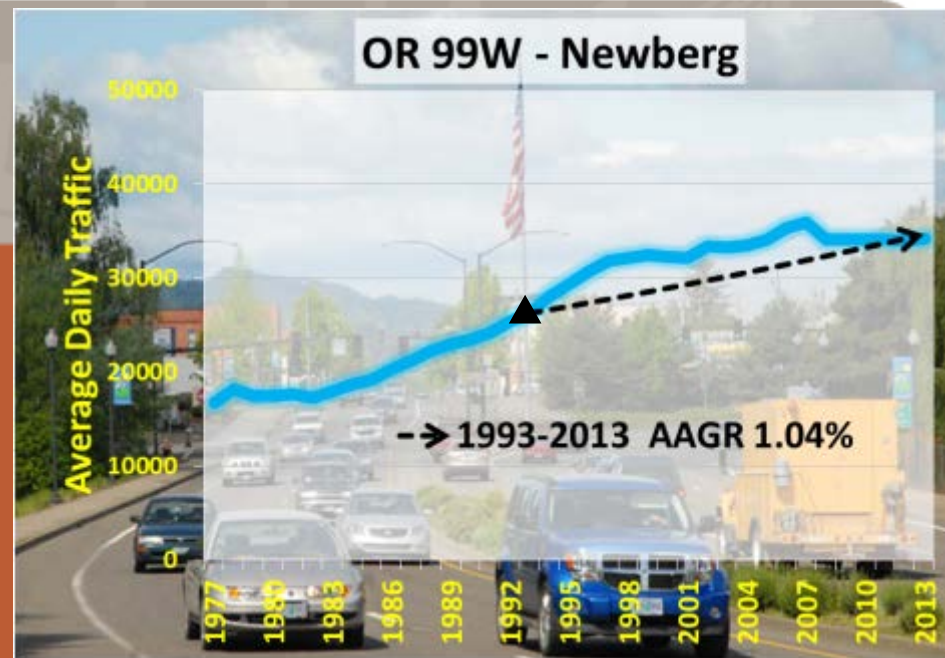
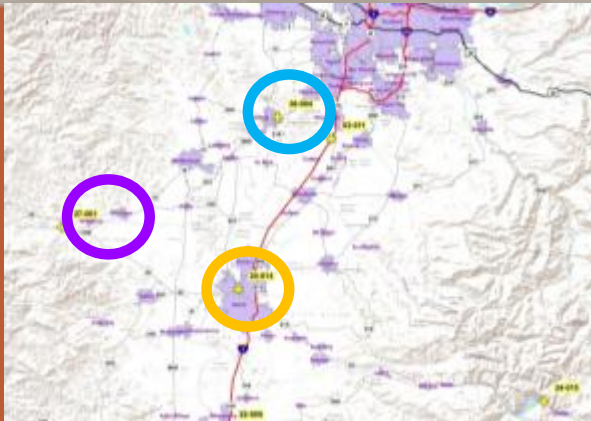
# 1993-2013 AAGR



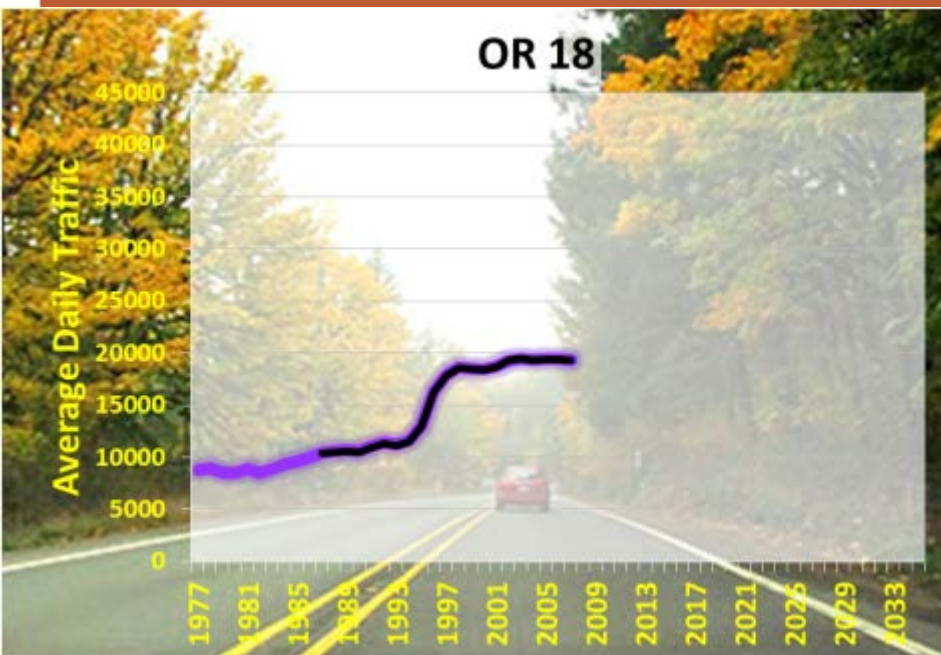
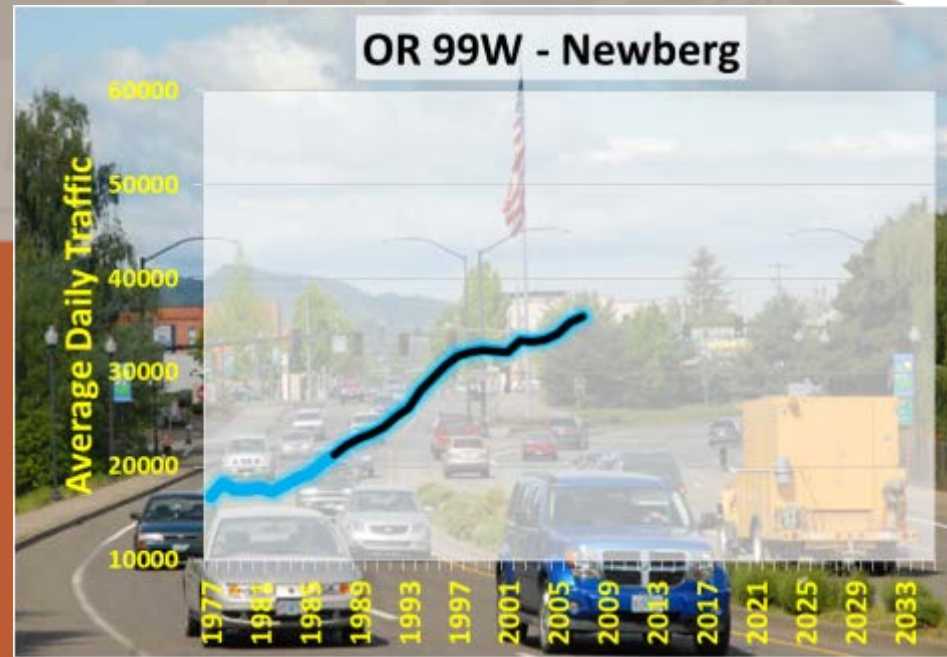
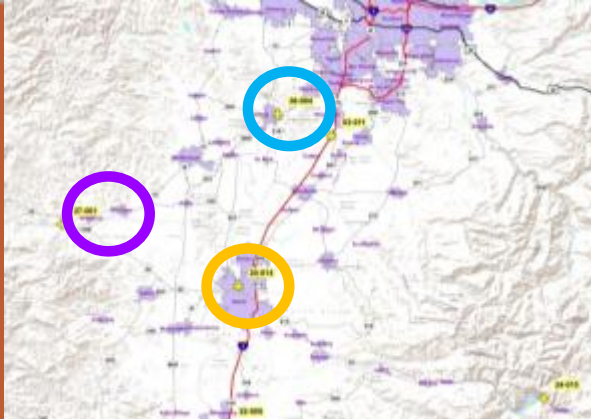
# 2000-2013 AAGR



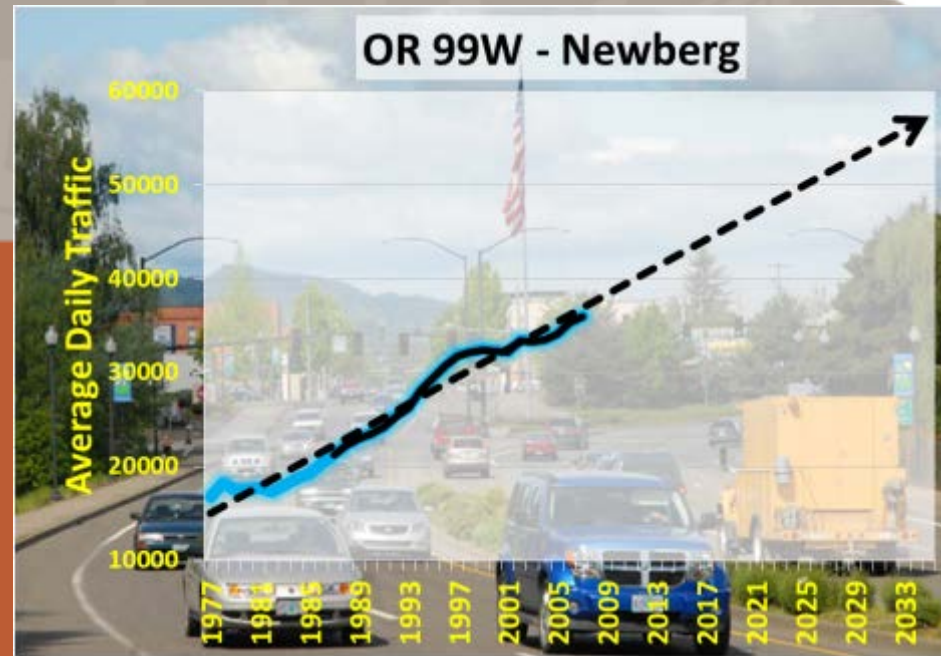
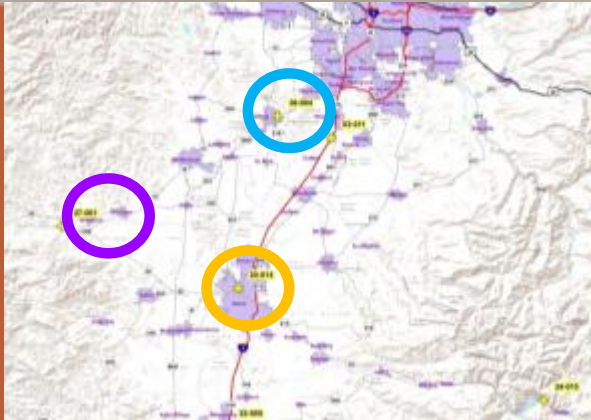
# FHWA Forecast: 1993-2013



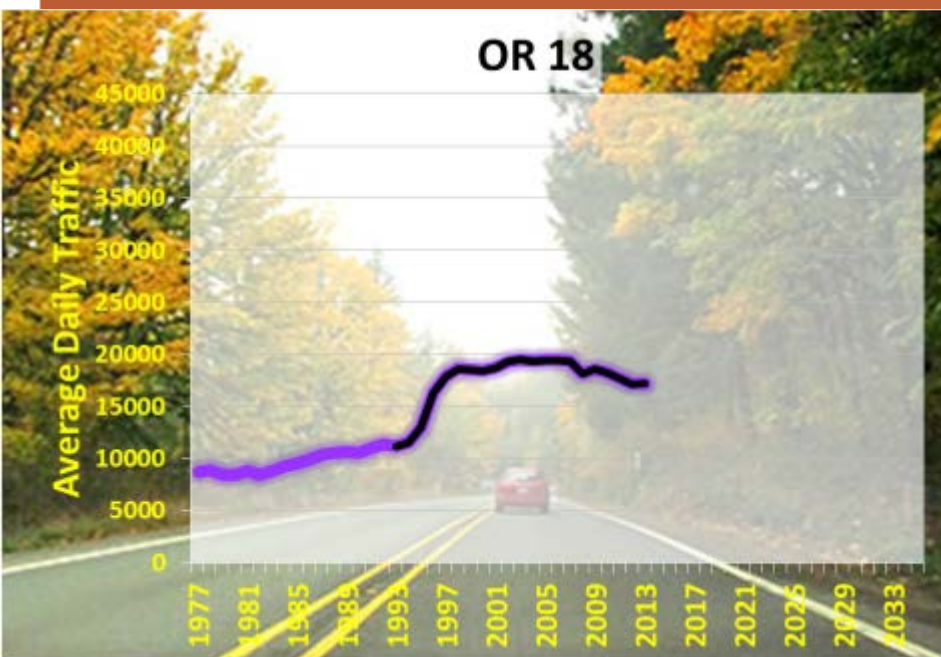
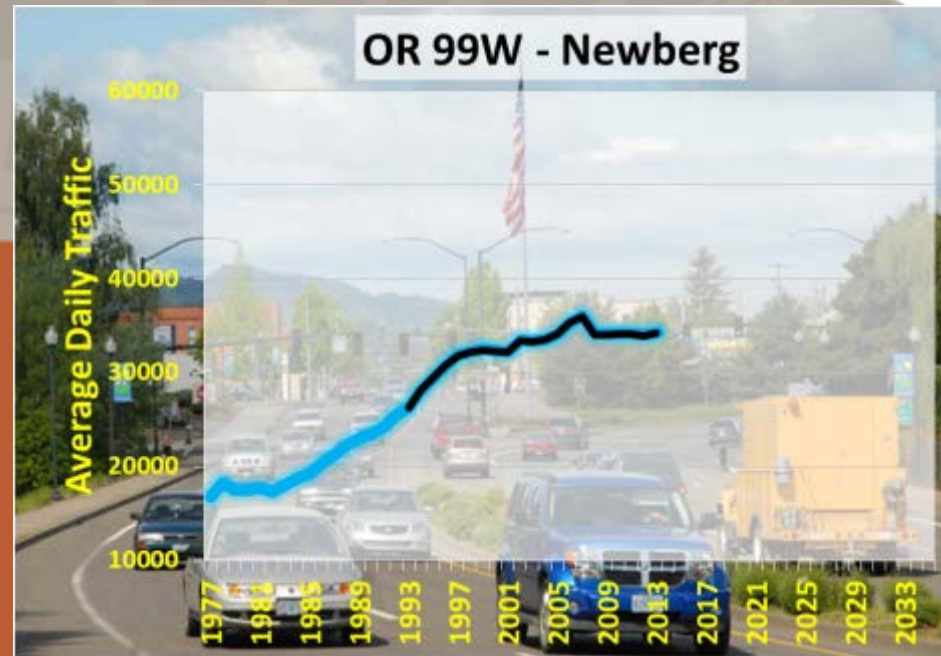
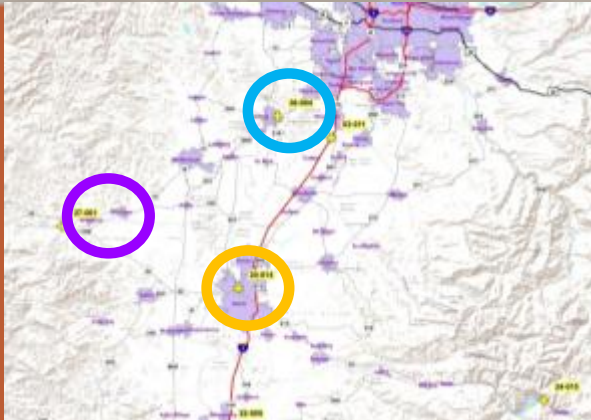
# Compare: 1987-2007



# 1987-2007 Trend

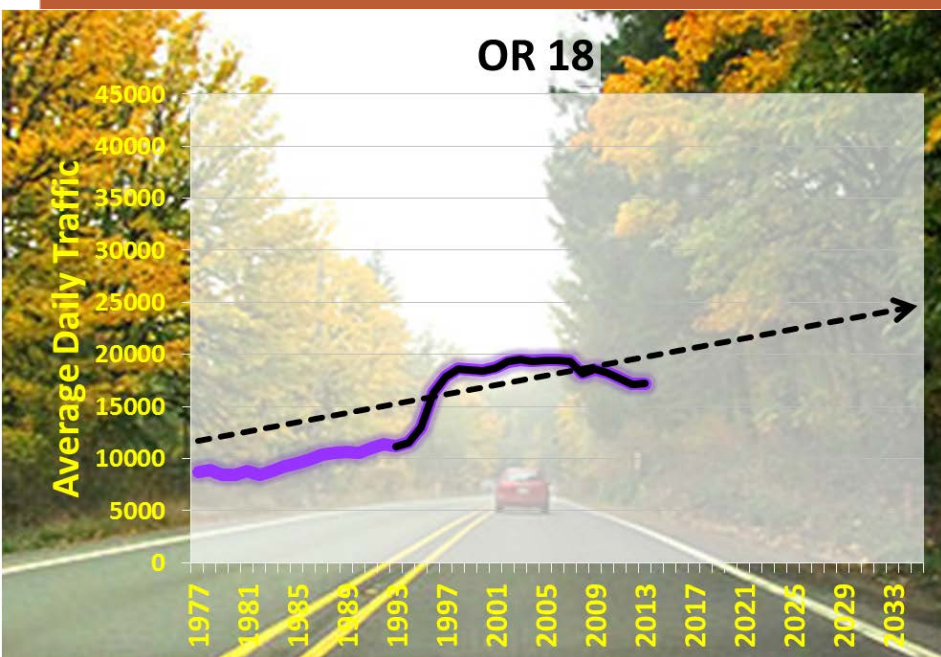
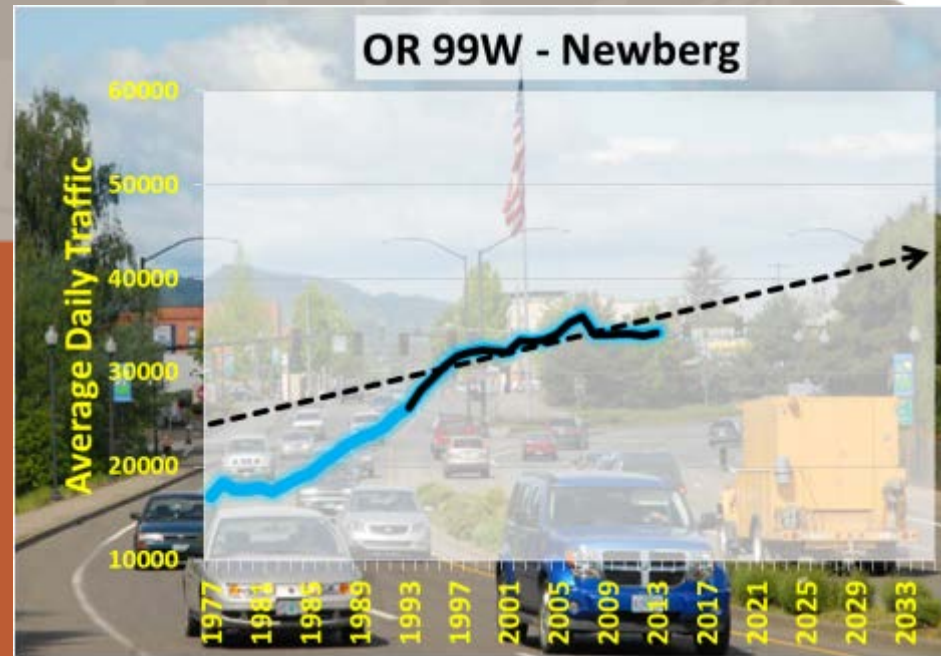
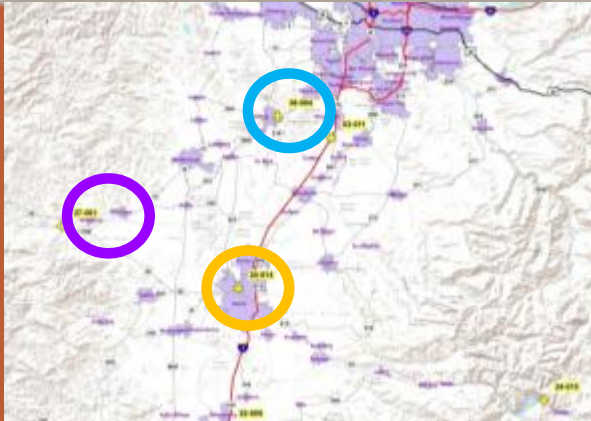


# 1993-2013

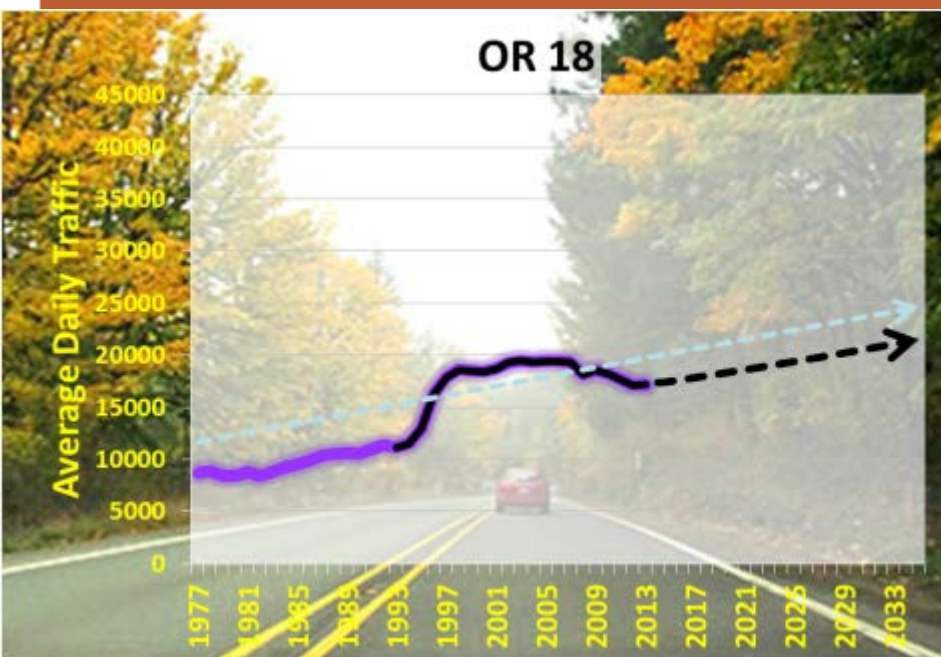
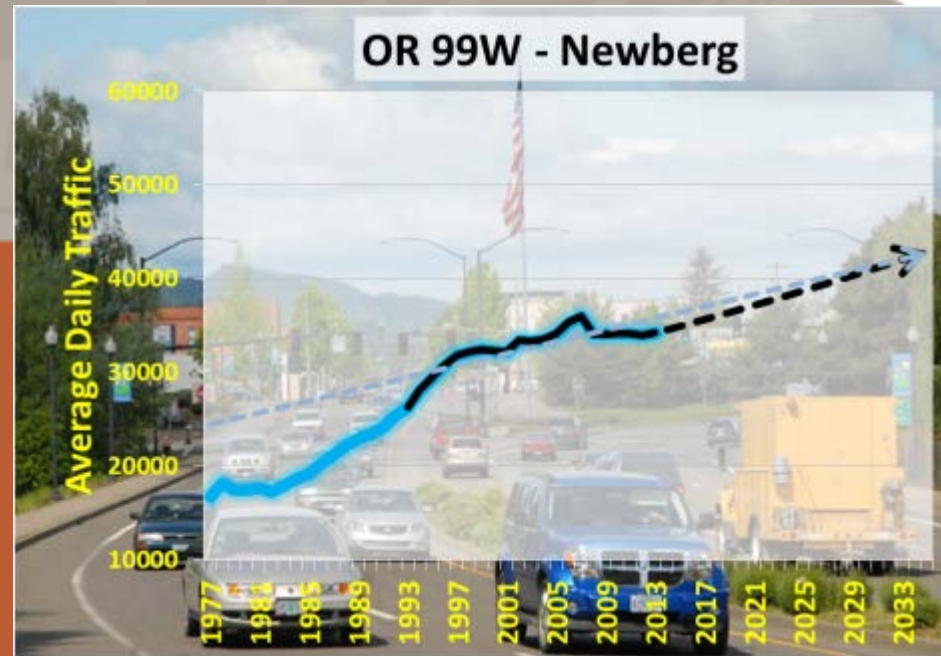
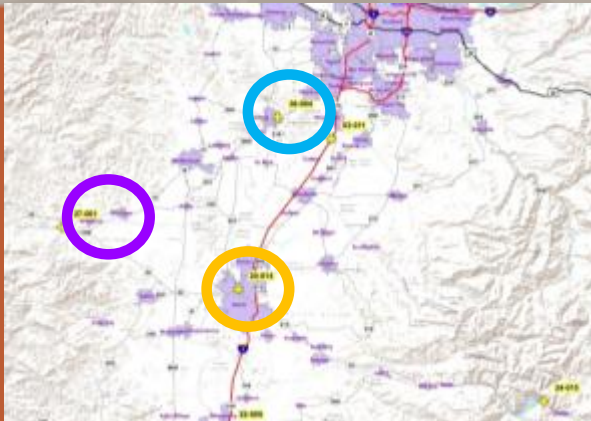




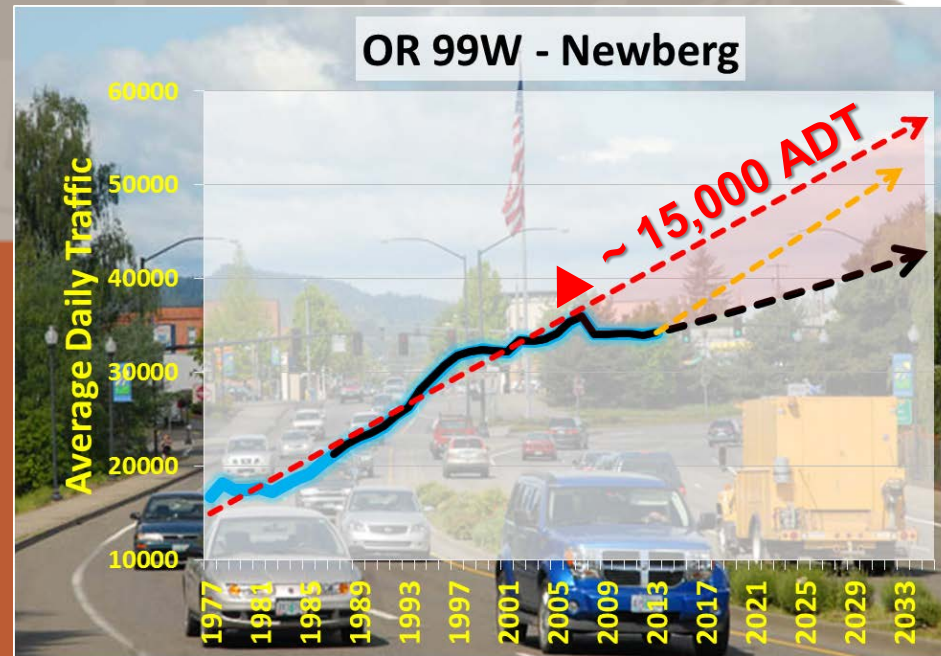
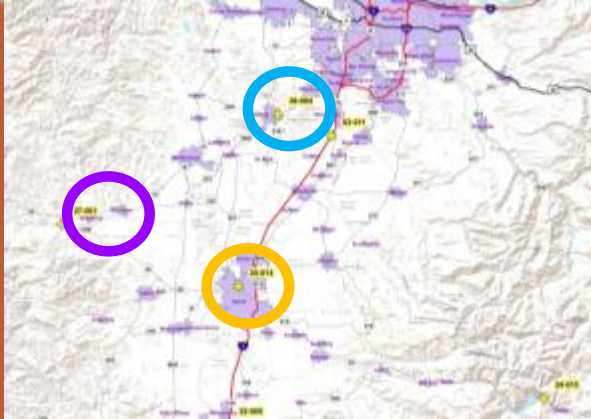
# 1993-2013 Trend



# 1993-2013 Trend & FHWA Forecast



# Compare Trends





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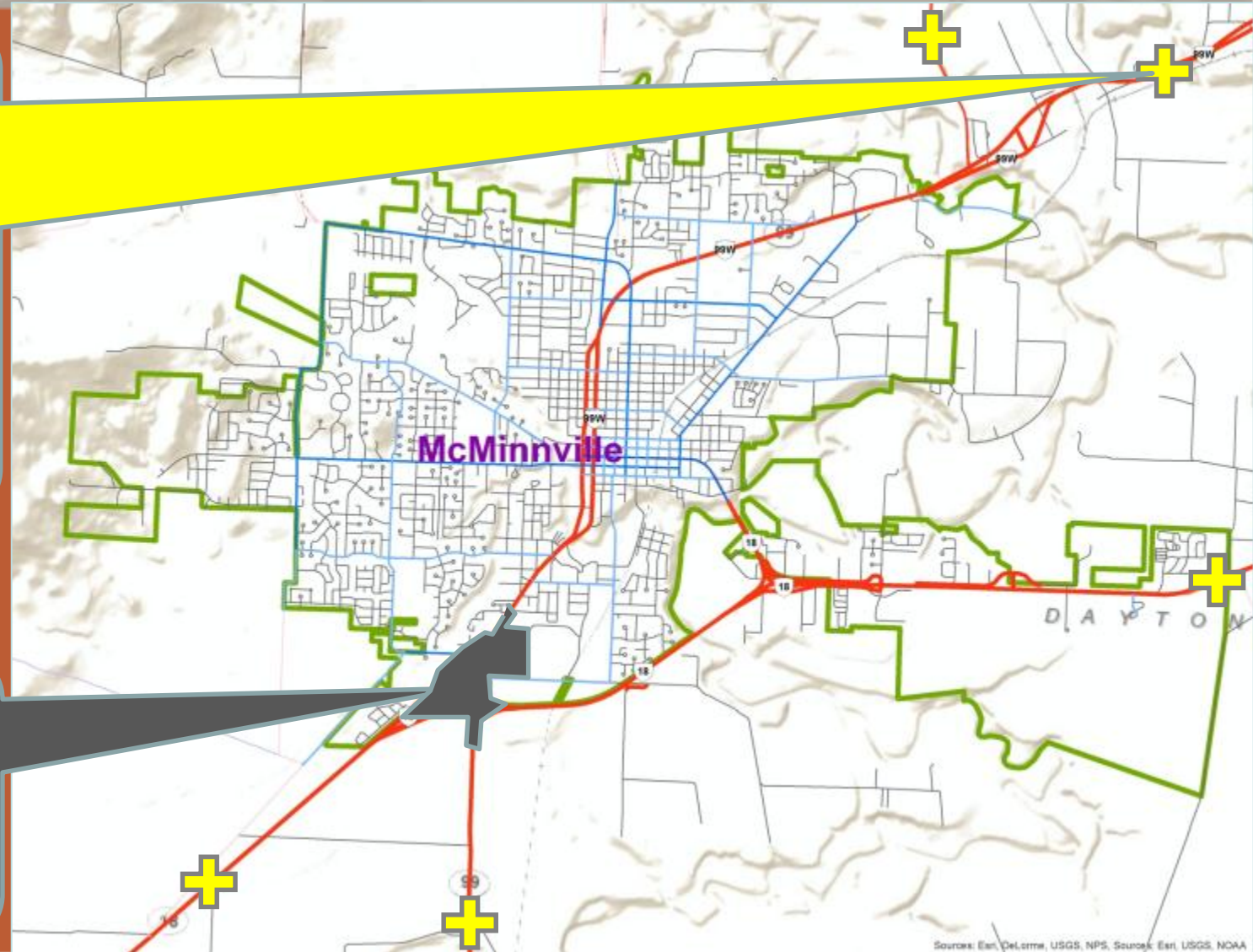
# Updating Local TSPs



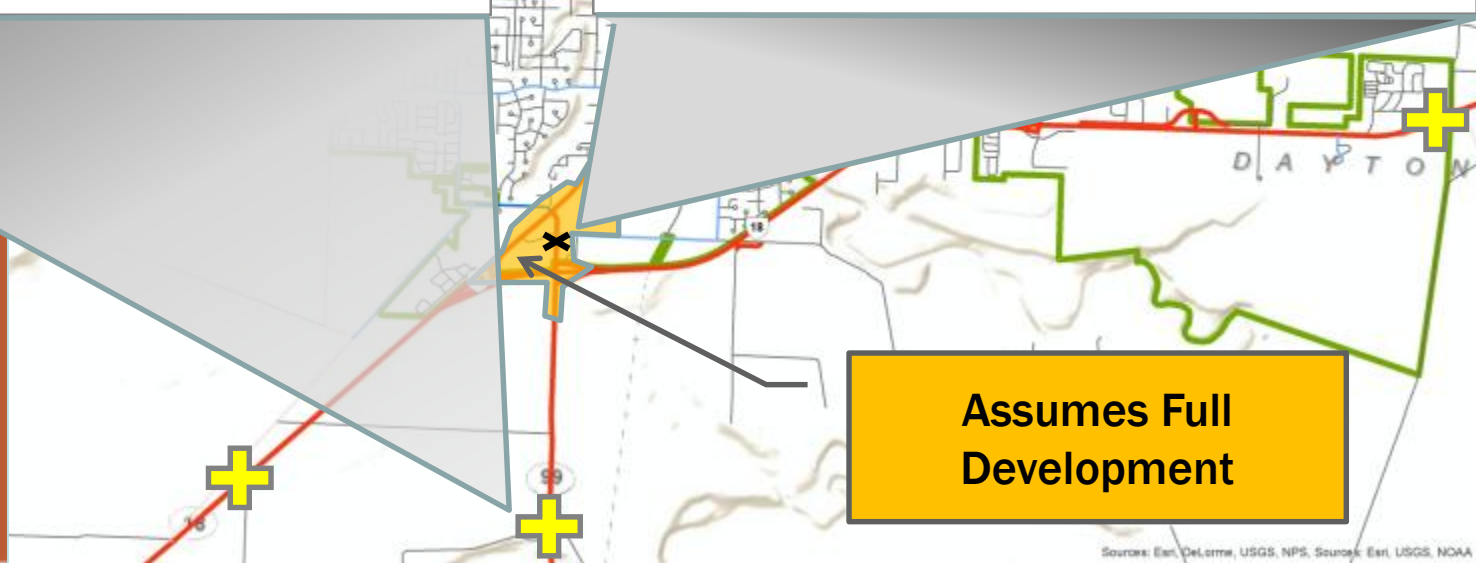
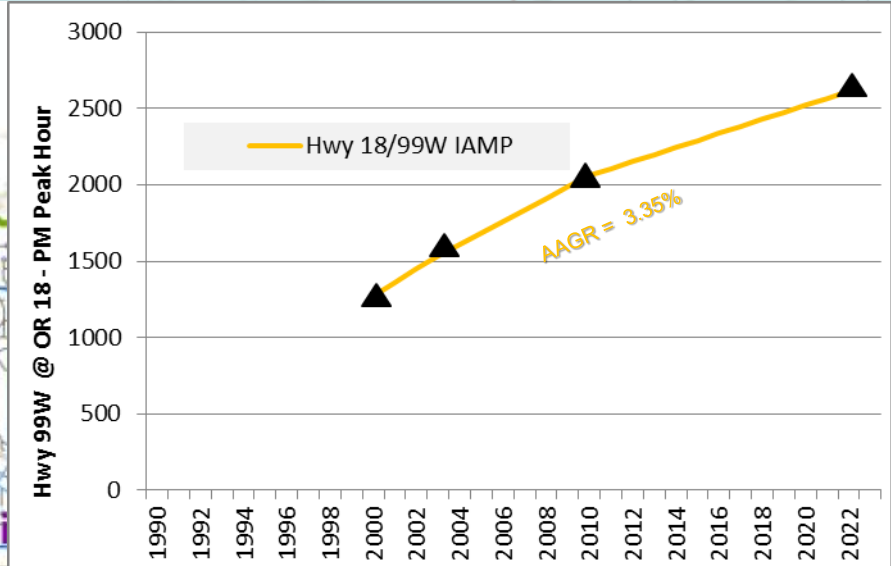
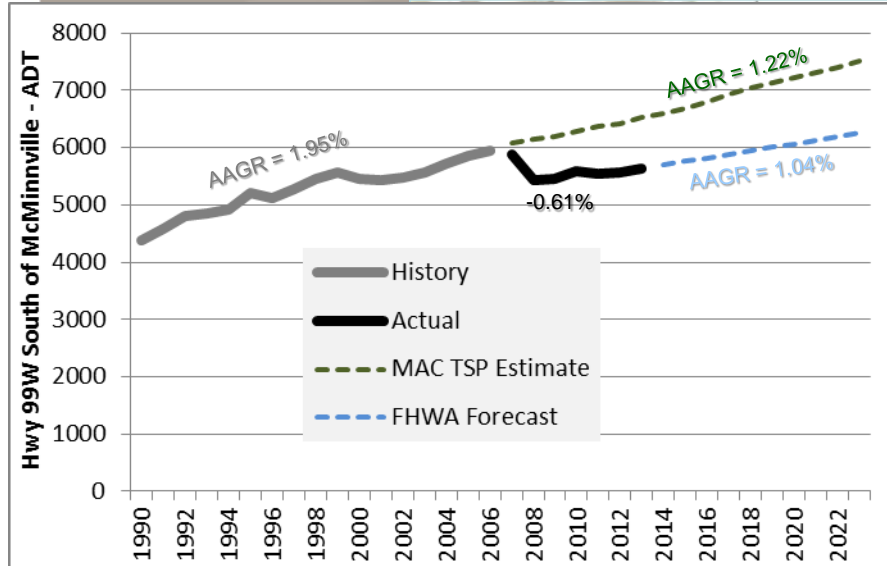
# McMinnville TSP Updating: IAMP & Travel Model Growth Assumptions

Update  
McMinnville  
Travel  
Demand  
Model -  
External  
Station  
Growth  
Assumptions

Update  
OR 99W/18  
IAMP



# Updating Hwy 18/99W IAMP



# Findings

- Oregon urbanization continuing to affect regional and localized travel patterns
  - Six D's, mainly density & high quality transit in urban areas
  - Economic and demographic shifts
- Most local, recent traffic data trends roughly align with FHWA's VMT forecast
- Continue examination of annual counts and local land use context
- Revise, update or replace outdated trends and model data, particularly in non-MPO areas





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# Questions

