

Columbia River **CROSSING**

Task Force Meeting

August 16, 2006



Columbia River **CROSSING**

Cross-River Arterial Roadway Connections

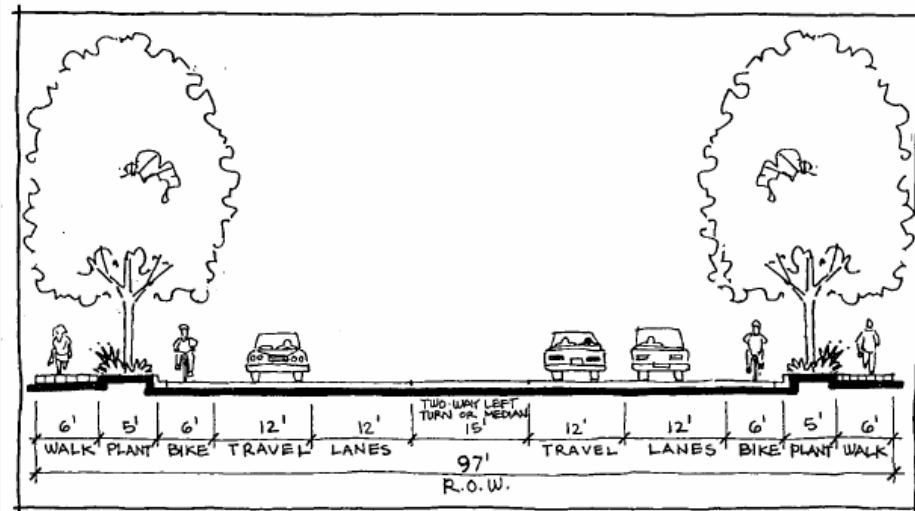
CRC Task Force

August 16, 2006



Arterial Roadways

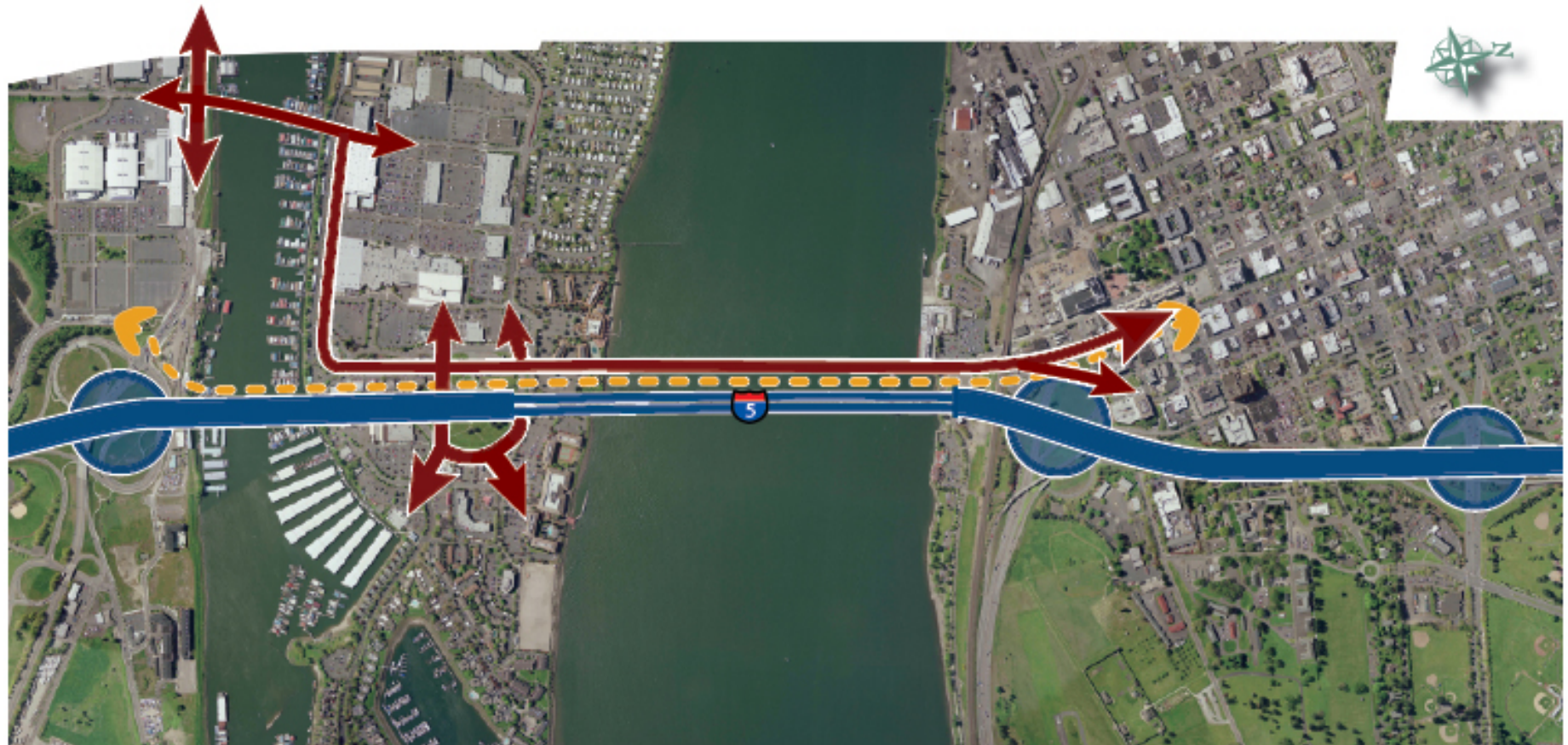
- Alternatives 3 through 7 include an arterial roadway crossing the Columbia River
- What is an arterial?
 - Generally 2 to 6 through travel lanes
 - Usually 35 to 55 mph posted speeds
 - Provide high degree of mobility
 - Broad right-of-way
 - Bicycle and pedestrian facilities



Arterial Roadways





Issues to consider:

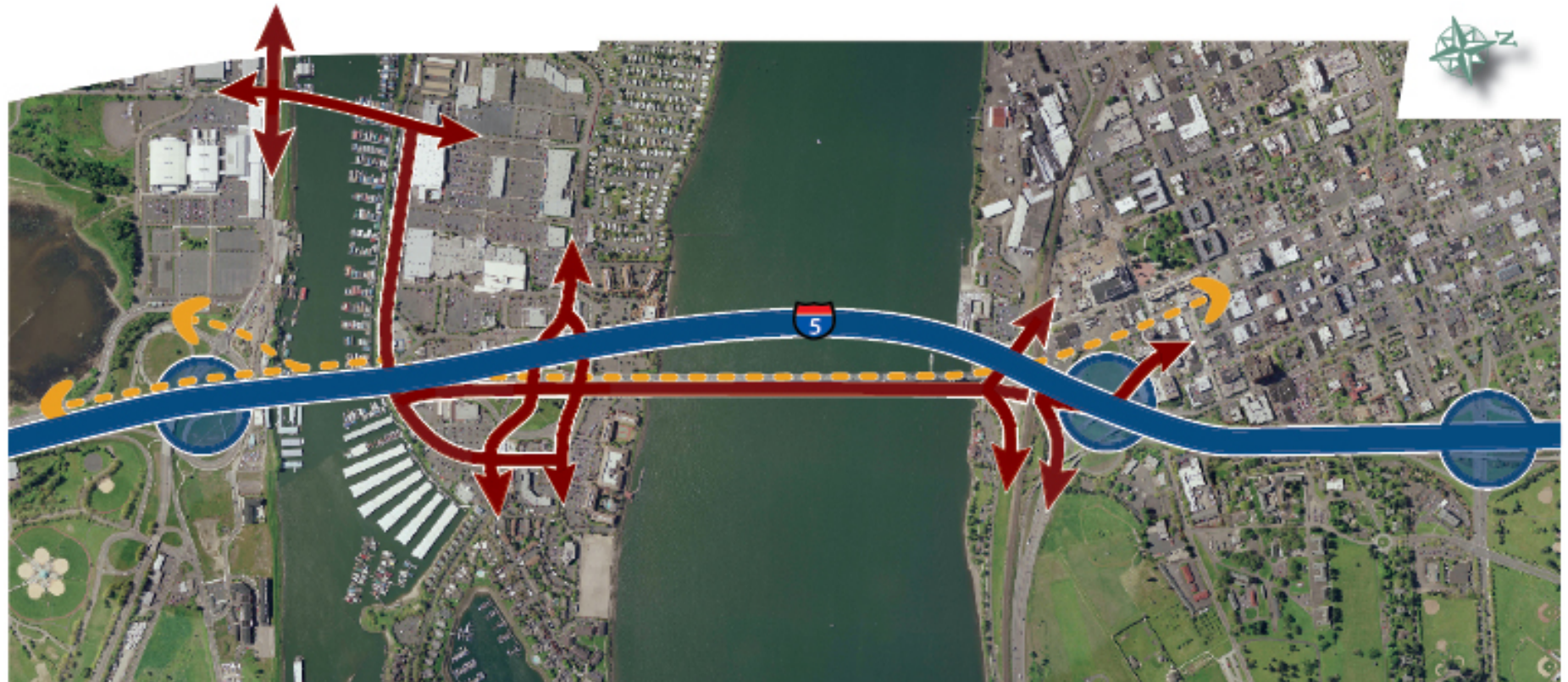
- Arterial roadway on new bridge or existing bridge
- Connections with other roadways
- Travel demand for arterial roadway
- Capacity and number of lanes
- Travel patterns and potential arterial roadway users
- Potential for cut-through traffic
- Right-of-way impacts
- Potential for tolling arterial roadway
- Ownership and maintenance



DISCLAIMER These maps are for discussion purposes only and are subject to change.





LEGEND

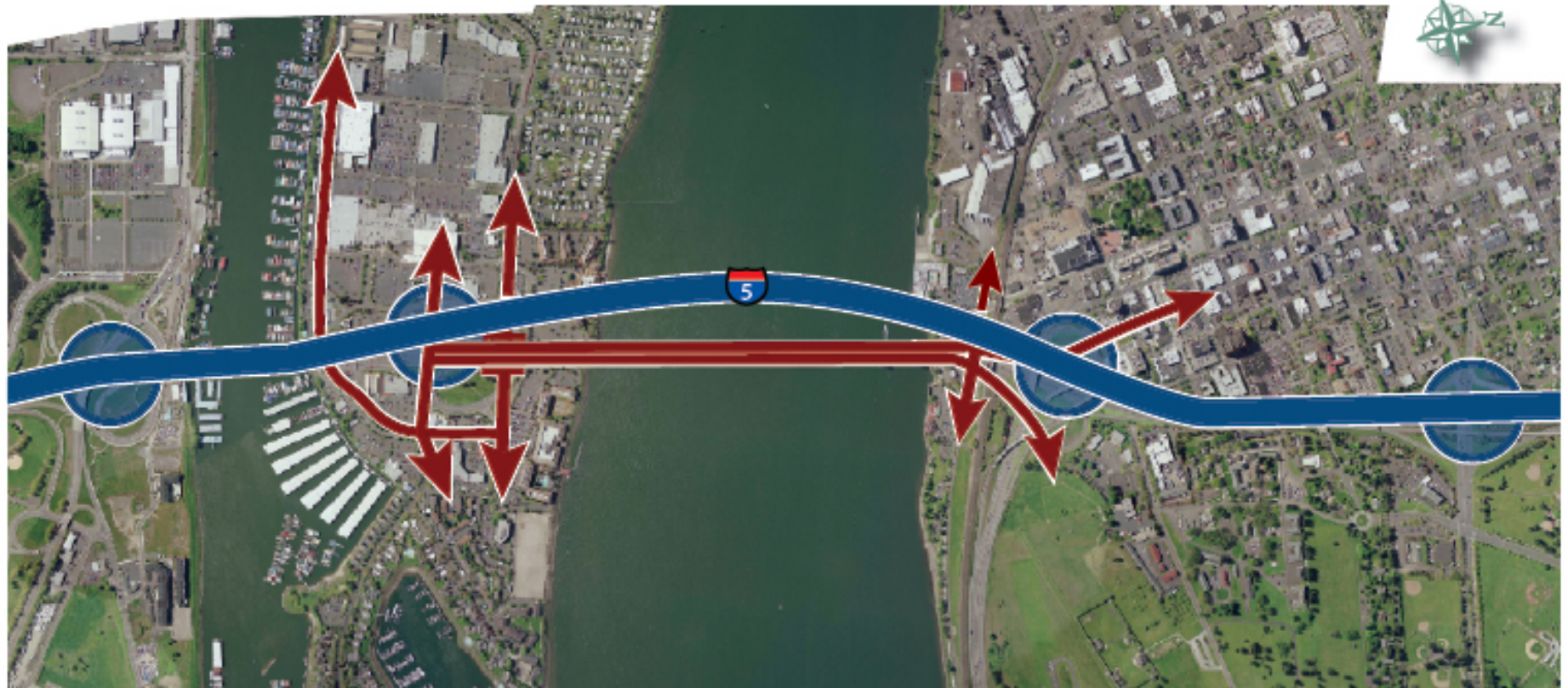
-  I-5 Travel Lanes
-  Arterial Connections
-  High Capacity transit alignments
-  I-5 Interchange



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LEGEND

-  I-5 Travel Lanes
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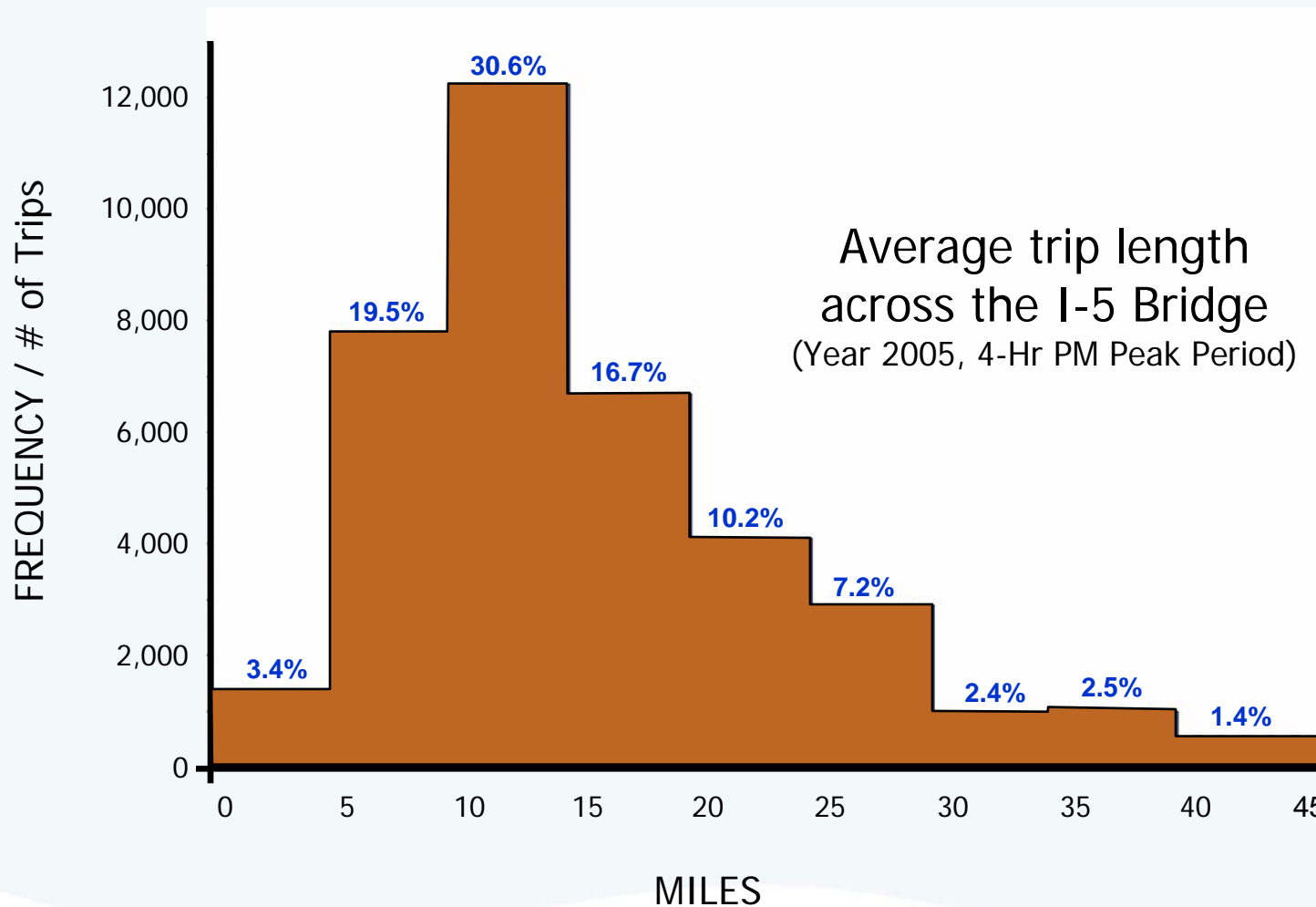


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LEGEND

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Vehicle Trip Lengths Across the I-5 Bridge

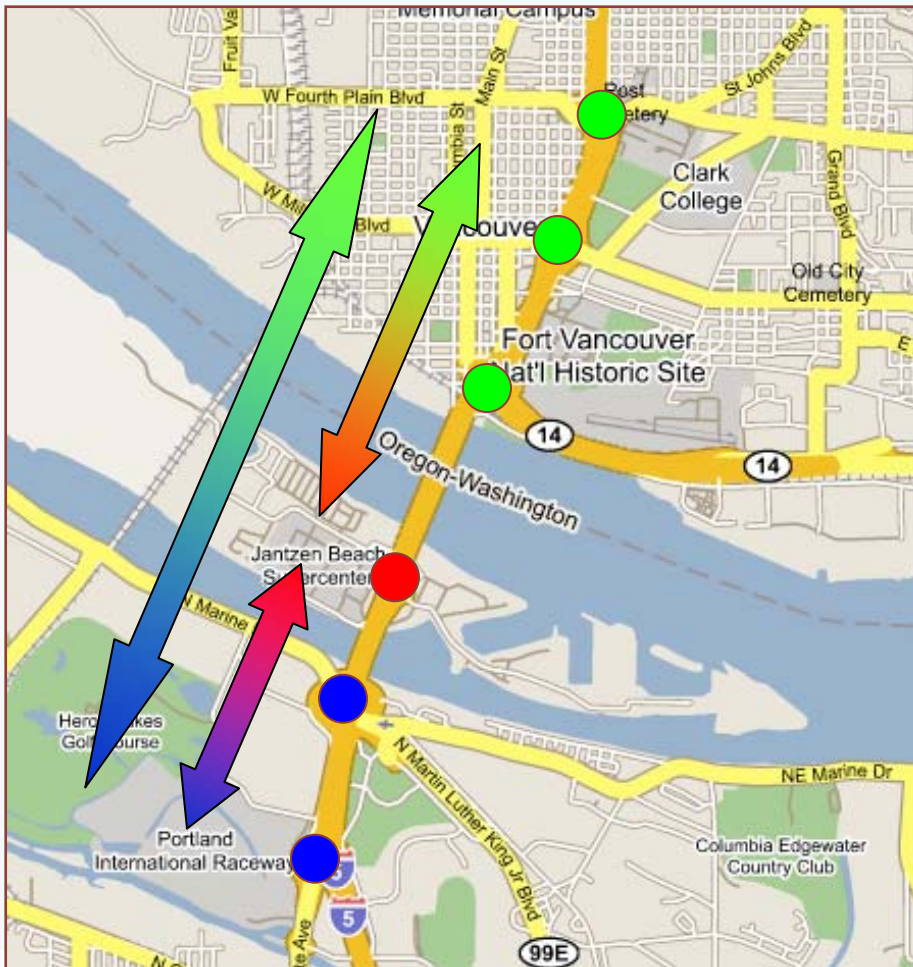


Ramp Counts and License Plate Surveys

- 24-hour counts were conducted at all I-5 ramps in October 2005
- Video cameras used to capture license plates of vehicles traveling to and from ramps in the Bridge Influence Area



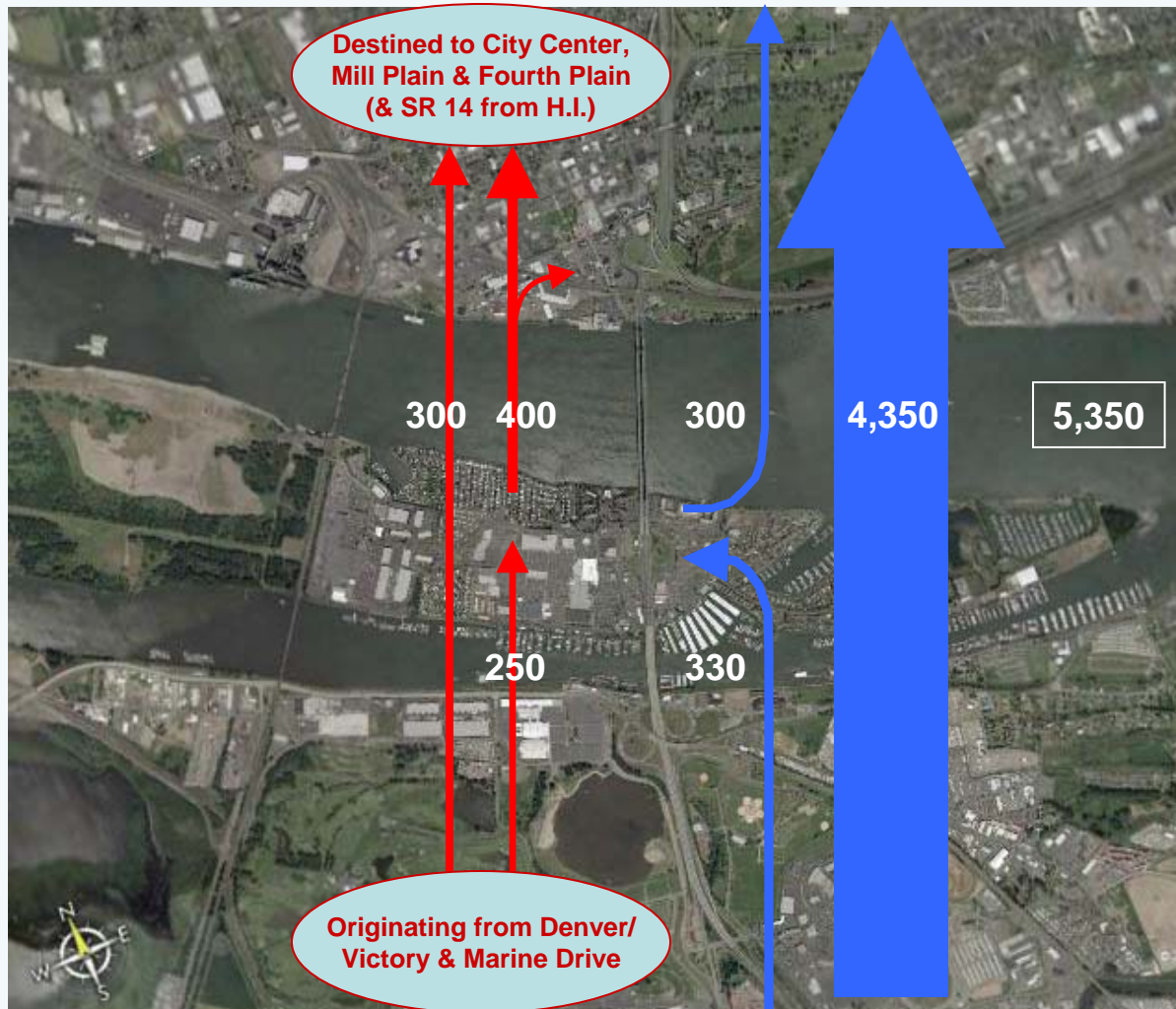
“Potential” Cross-River Arterial Trips



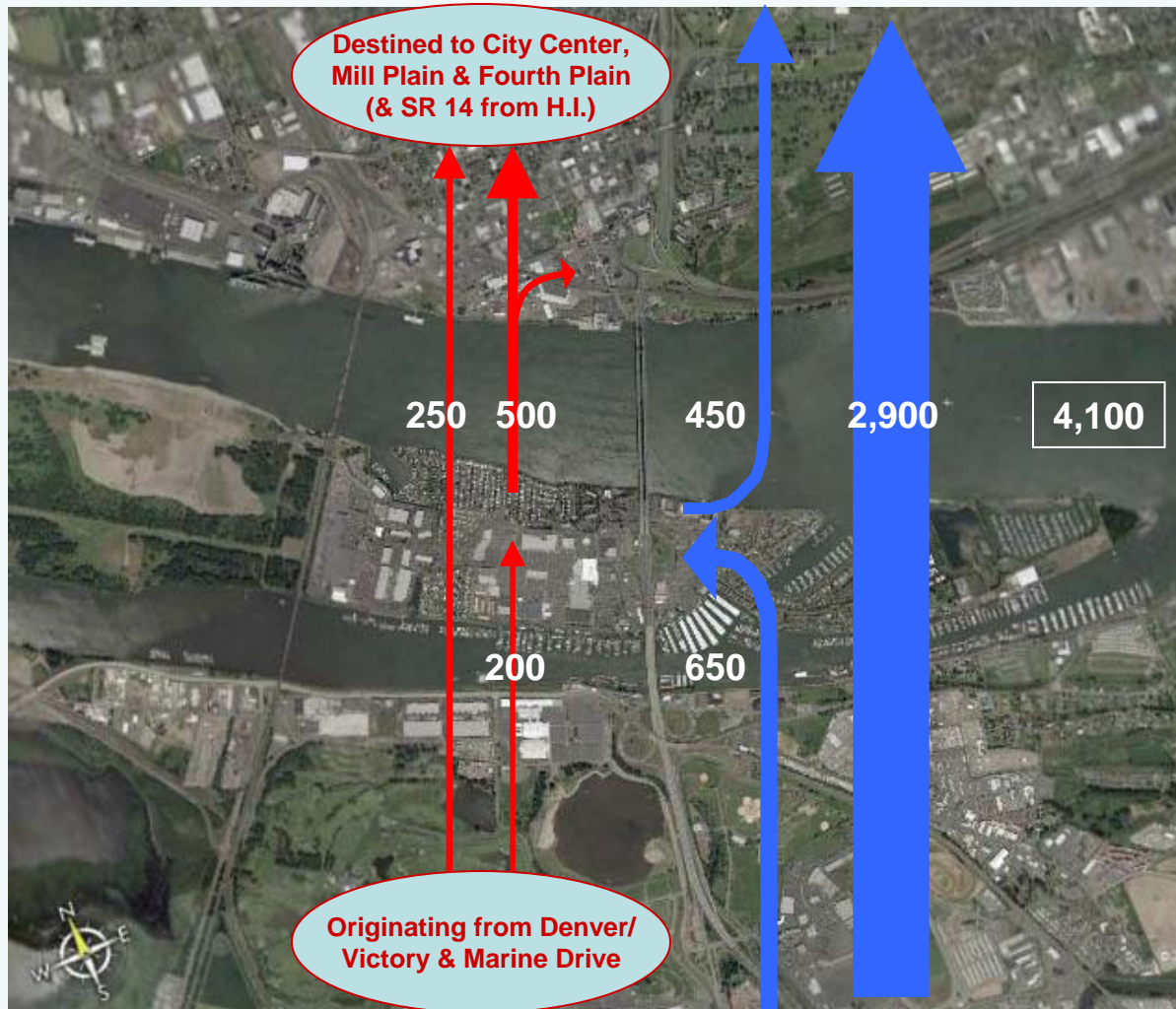
Trips that would travel between:

- Denver/Victory and Marine Drive to/from Hayden Island
- Denver/Victory and Marine Drive to/from City Center, Mill Plain, and Fourth Plain
- Hayden Island to/from City Center, SR 14, Mill Plain, and Fourth Plain

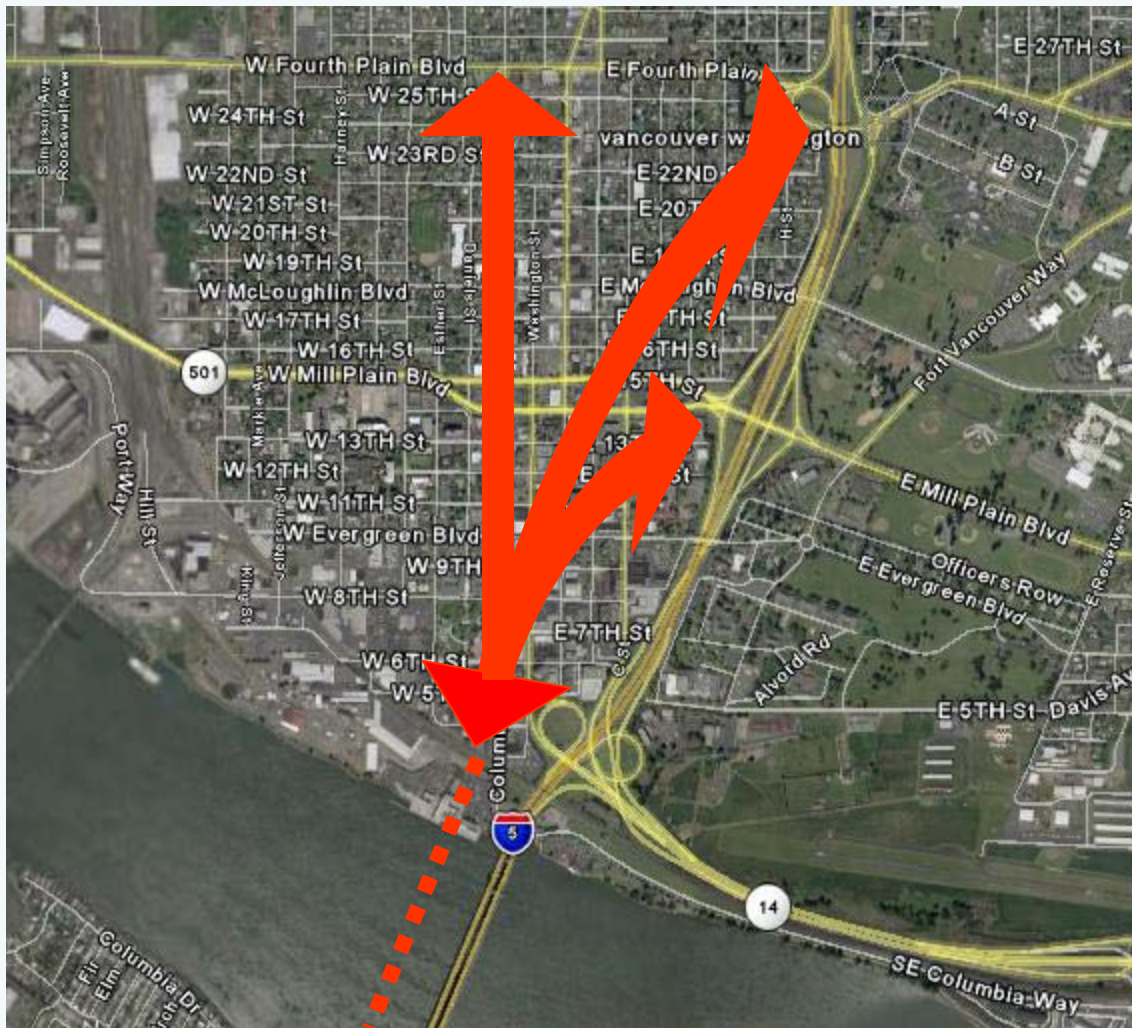
"Potential" Arterial Trips: Existing PM Hour



“Potential” Arterial Trips: Existing Midday



Connections and Effects on Other Roadways



Alternative Package #3

- Alternative Package #3 is the only Build Alternative that would depend on an arterial roadway – instead of added freeway capacity across the river – to address congestion
- The arterial roadway would need to provide convenient connections and adequate capacity – up to 6 through lanes

Highway Type	Hourly Lane Capacity
Freeway	2,000 – 2,200
Principal Arterial	900 – 1,200
Minor Arterial	700 – 1,000
Major Collector	600 – 800
Minor Collector	450 – 650
Local	300 – 500

* Adapted from FHWA guidelines

Summary

- Existing demand is limited for short distance cross-river vehicle trips
- If an arterial roadway is depended upon to reduce cross-river congestion instead of added freeway capacity, traffic diversion impacts would result in downtown Vancouver, on Hayden Island, and/or near Marine Drive
- The provision of a cross-river arterial roadway would provide two adjacent and parallel highway corridors, resulting in additional right-of-way requirements
- Issues related to ownership and maintenance and to potential tolling would need to be addressed

Columbia River **CROSSING**

Approach to Alternatives Screening

Task Force

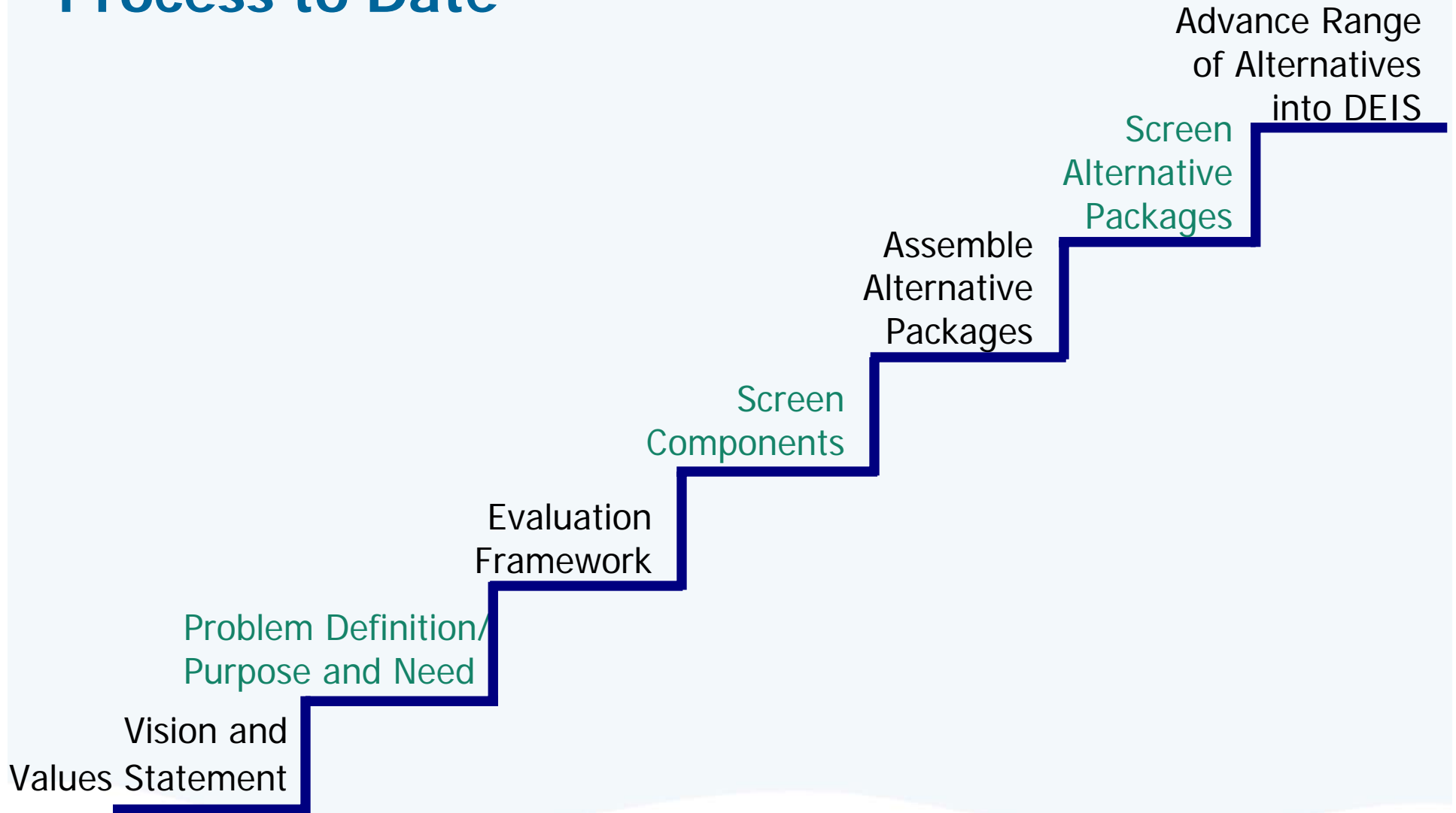
August 16, 2006



Introduction

- Where we are in the screening process
 - Task Force has adopted 12 alternative packages for study
 - Need to reduce the number to a smaller range of alternatives for the DEIS
- Screening identifies the best performing ideas to build a narrower range of alternatives around;
- Make key decisions that will guide the screening process
- Key decisions derived from:
 - Component screening and packaging
 - Task Force and stakeholder discussion

Process to Date



Key Decisions

- What river crossing type(s) should be advanced?
- What transit mode(s) should be advanced?

Information Supporting Key Decisions

- Considerations in retaining the existing I-5 Bridges
- Effect of tolling on transit, diversion, and capacity needs
- Effect of TDM/TSM on transportation system performance and capacity needs
- Cost of key features (i.e., cost of each transit mode)
- Considerations in providing an arterial
- Interchange accessibility options

Information Supporting Key Decisions cont.

- Effect of bridge decisions on marine navigation
- Pedestrian/bicycle accessibility, connectivity, and mobility
- Managed lane performance
- Potential project benefits for freight movement
- Access to activity centers near I-5
- Highway performance

Using Criteria to Support Key Decisions- Transit

What transit mode(s) should be advanced?

- **Criteria 2.2-** Reduce travel times and delay in the I-5 corridor and within the bridge influence area for transit modes
- **Criteria 2.5-** Improve person throughput of I-5 Columbia River crossing
- **Criteria 3.1-** Provide for multi-modal transportation choices in the I-5 corridor and within the bridge influence area
- **Criteria 3.2-** Improve transit service to target markets in the I-5 corridor and within the bridge influence area
- **Criteria 8.1-** Minimize the cost of construction
- **Criteria 8.2-** Ensure transportation system construction cost effectiveness
- **Criteria 9.1-** Support adopted regional growth management and comprehensive plans

Upcoming Task Force Screening Activities

August 2006	<i>August 16:</i> Design concepts
September	<i>September 27:</i> Design concepts, continued & Performance measures
October	<i>October 25:</i> Evaluation results
November	<i>November 29:</i> Evaluation results- capital and O&M costs Recommendations for revised set of combined alternatives
December	<i>December 13:</i> Task Force draft recommendations for DEIS alternatives
January 2007	<i>To be scheduled:</i> Task Force final recommendations for DEIS alternatives
February	<i>To be scheduled (if needed):</i> Task Force final recommendations for DEIS alternatives

Columbia River **CROSSING**

Fuel Costs and Travel Demand

CRC Task Force

August 16, 2006



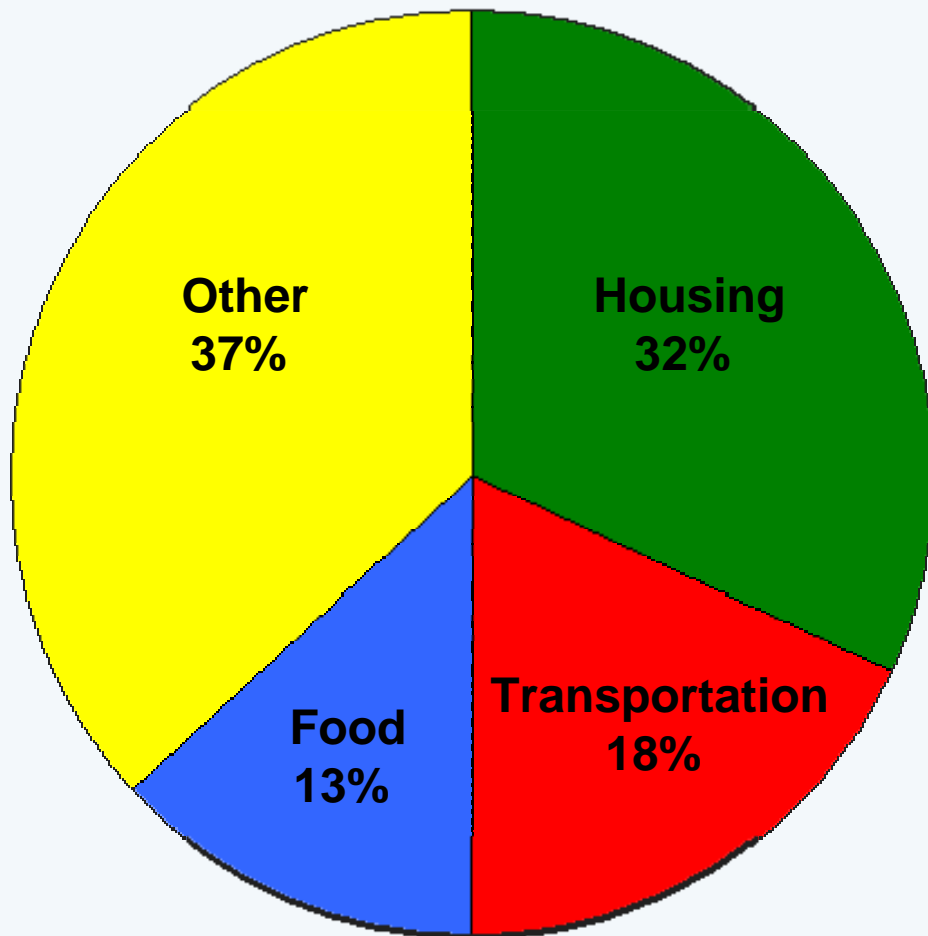
Presentation Outline

- Oil and transportation
- Fuel prices and travel demand
- Short and long term effects
- Regional travel demand modeling
- Travel demand in the CRC project area
- Summary

Presentation Outline

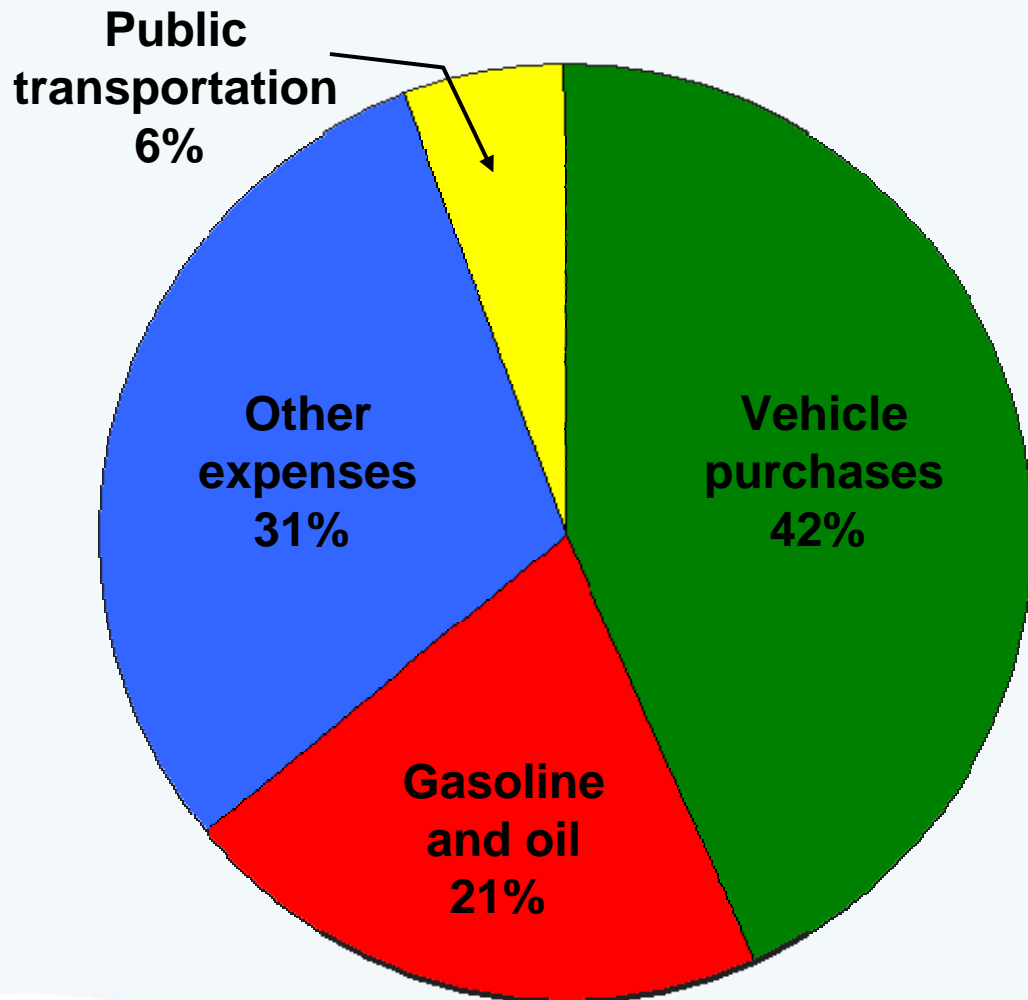
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Consumer Spending on Transportation



- **Transportation** is the 2nd largest segment of consumer spending, after **housing**
- \$3,100 per person per year in the United States

Vehicle Ownership Costs



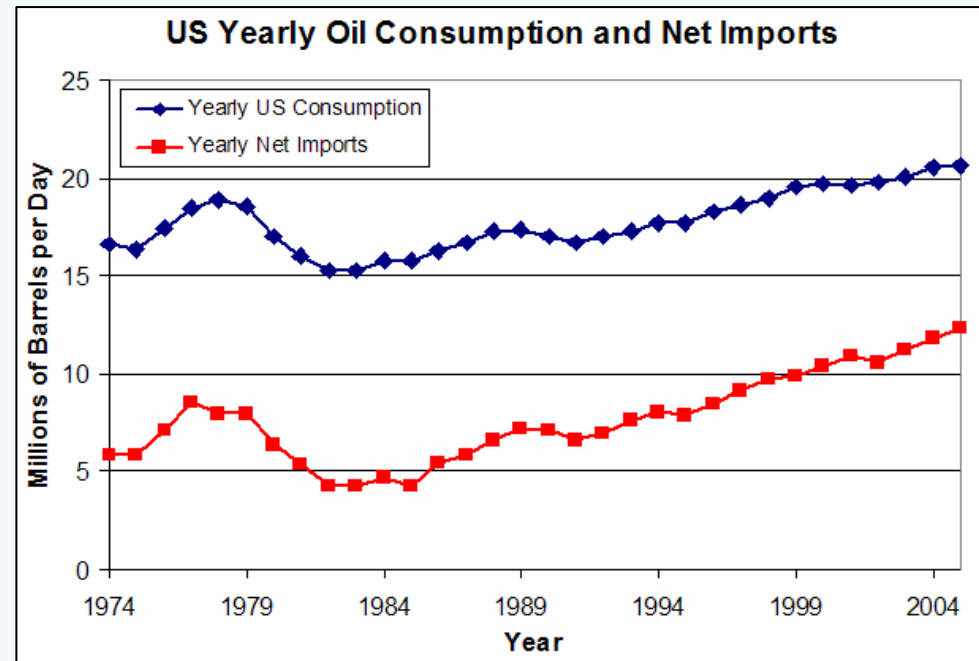
- **Gasoline and oil** constitutes 21% of vehicle ownership costs
- \$1,560 per household per year in Oregon
- \$1,730 per household per year in Washington

Supply Volatility

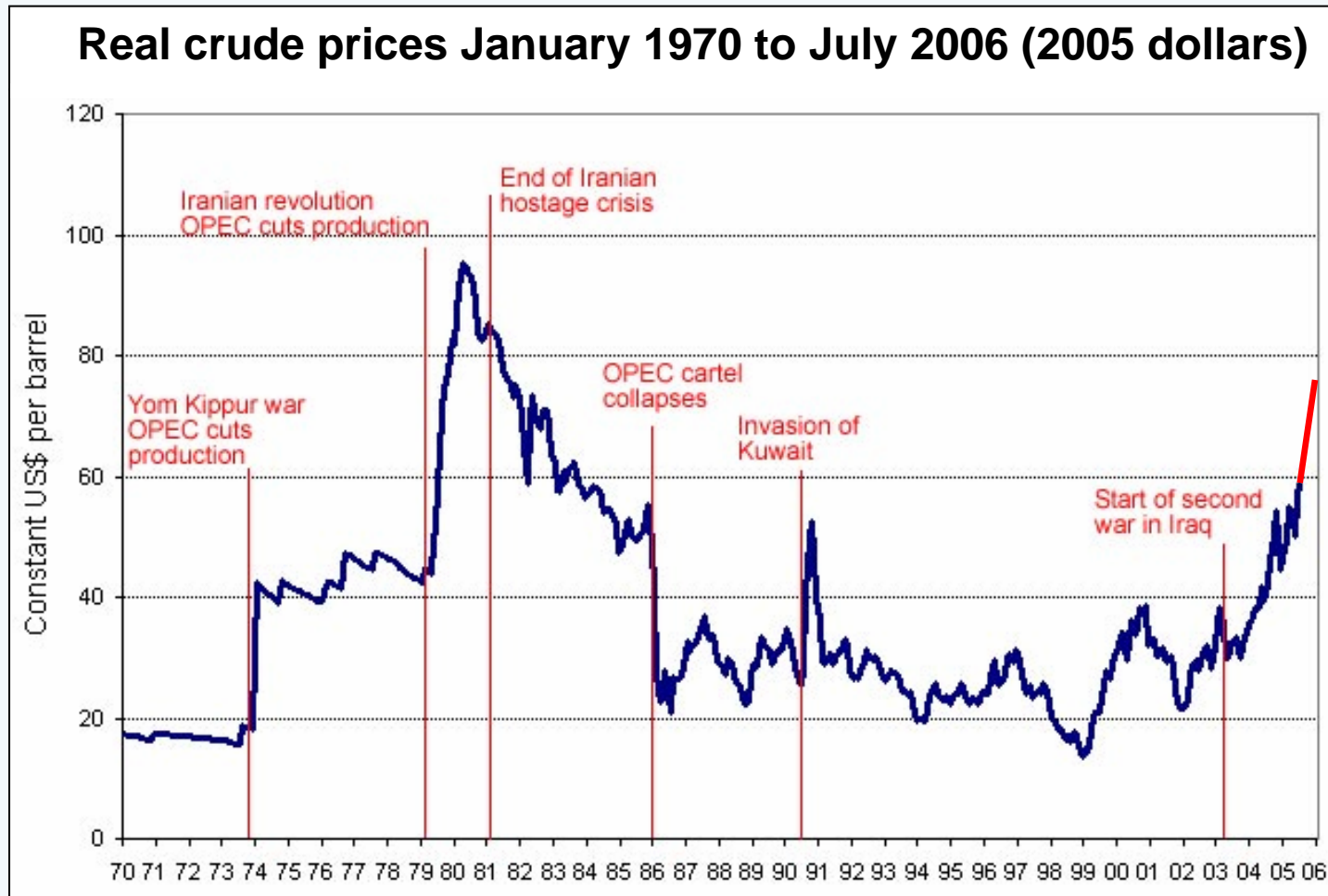
- Oil is a non-renewable, finite resource
- Current worldwide proven reserves: 1.1 trillion barrels
- Crude oil supply is highly concentrated in 7 countries
- US foreign policy decisions can influence supply reliability
- Current proven reserves in US will not decrease our reliance on foreign sources of oil

U.S. Oil Production and Consumption Today

- U.S. uses 25% of worldwide production
- Imports account for 60% of oil consumed in U.S.
- 2/3 of all oil is consumed in U.S. is by the transportation sector



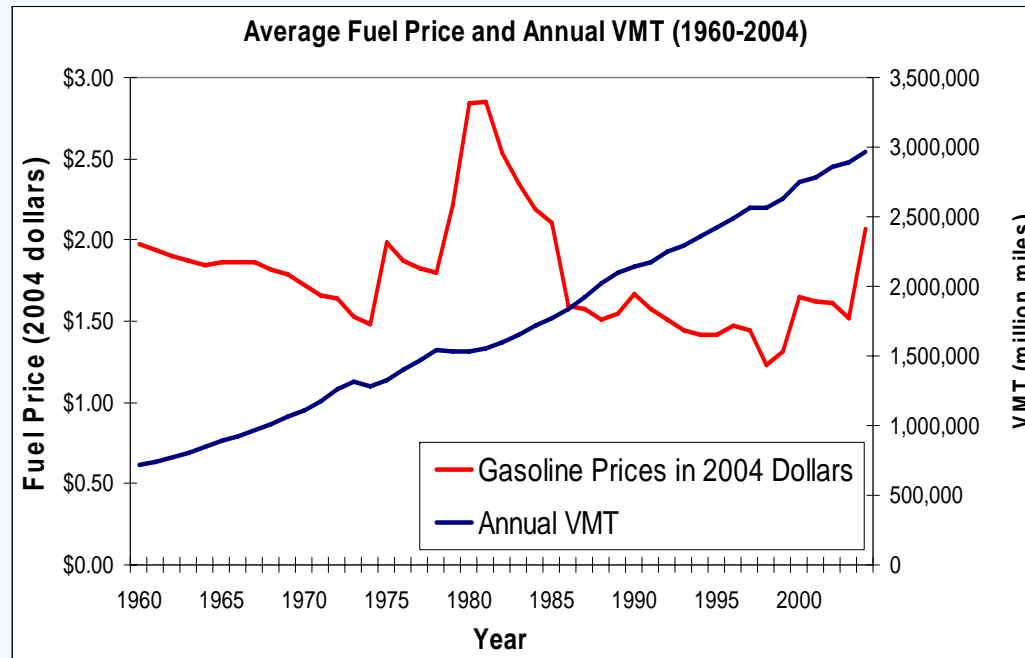
Oil Price Volatility



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History of Fuel Prices and Travel Demand



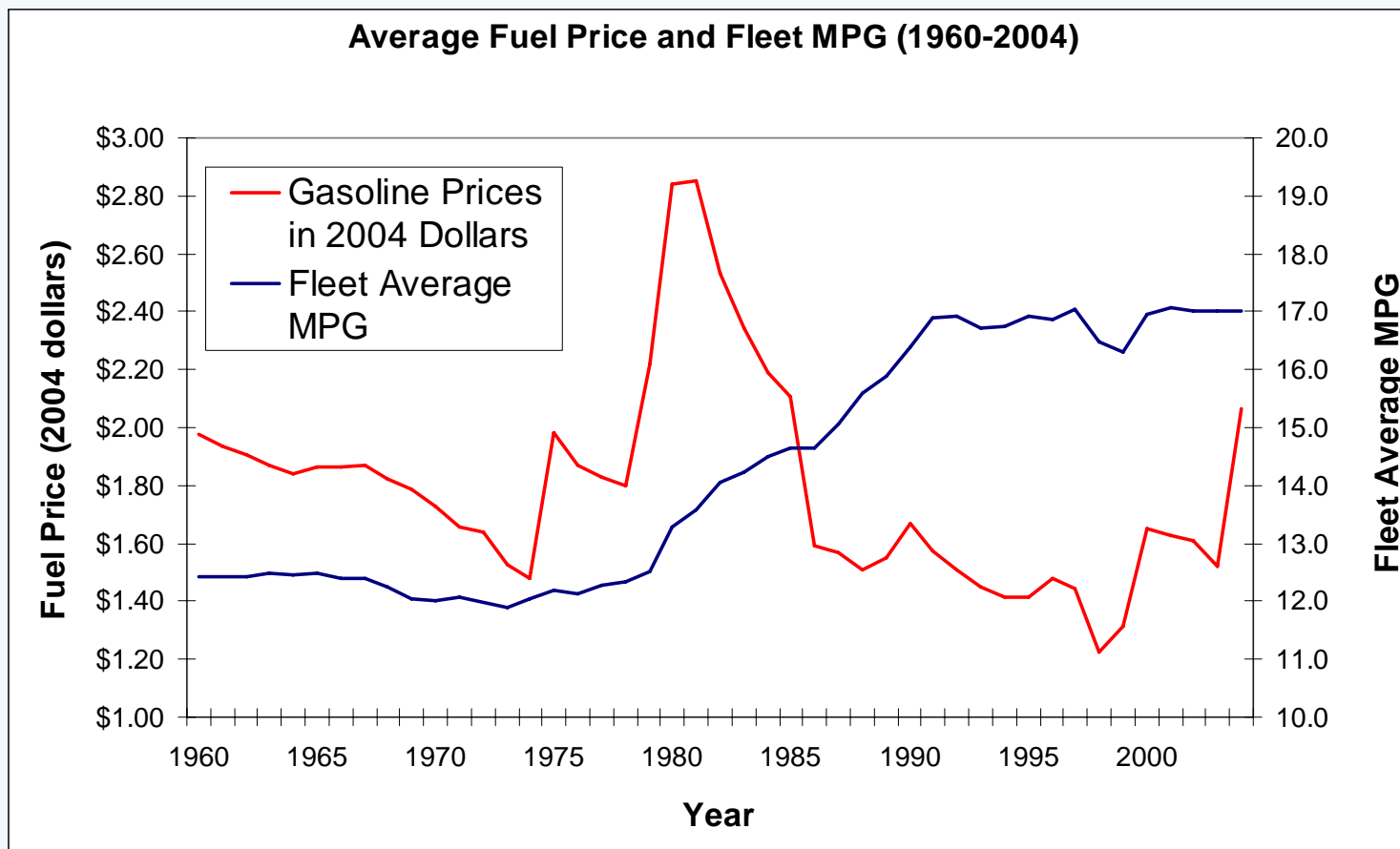
1973 oil crisis:

- Increase in fuel price: 30%
- Decrease in VMT: 2.5%

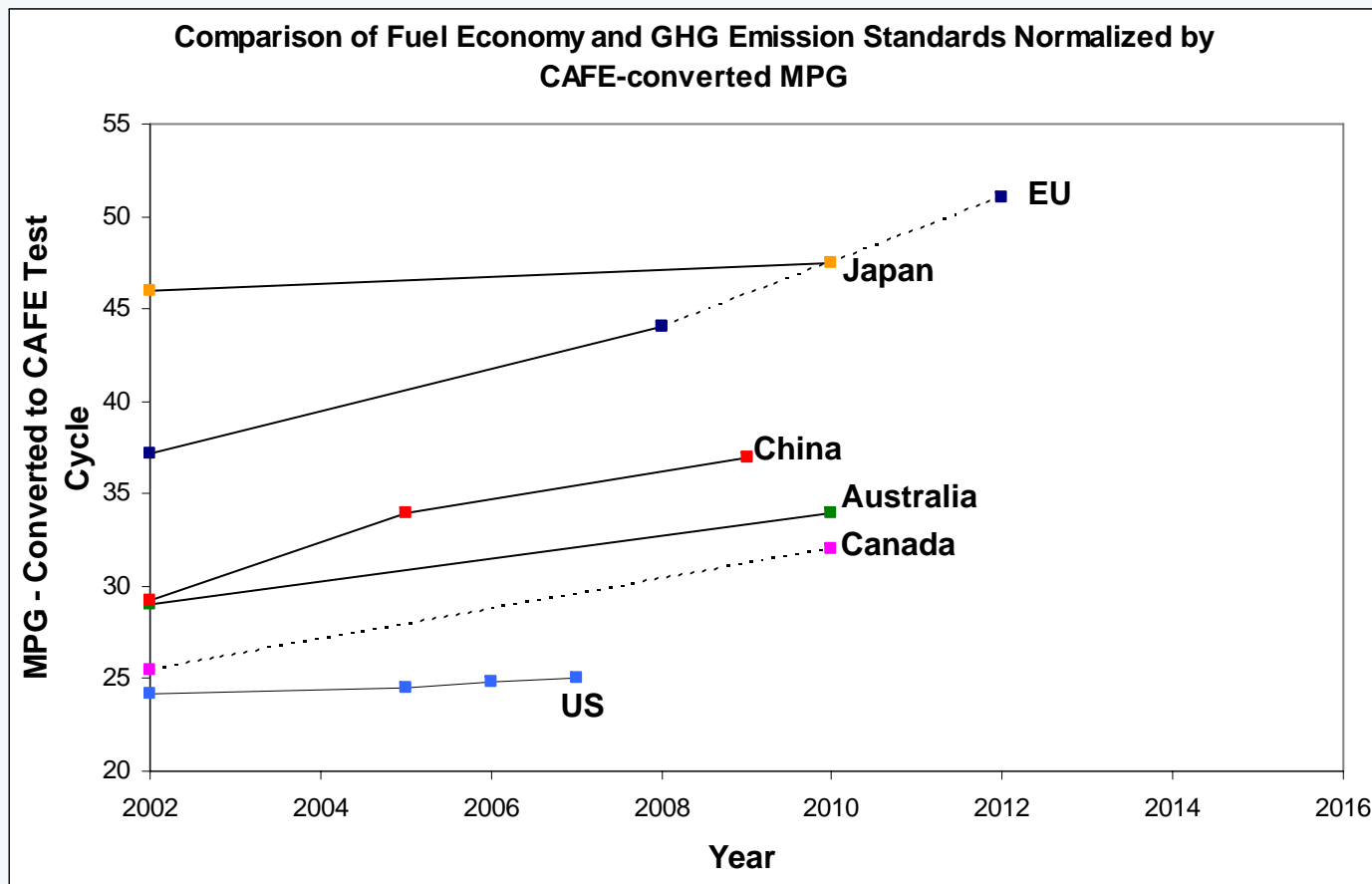
1979 oil crisis:

- Increase in fuel price: 58%
- Decrease in VMT: 1.1%

History of Fuel Prices and Fuel Economy



World Fuel Economy Comparison



Dotted lines denote proposed standards

Fuel Price Elasticity

- Elasticity is a way of measuring the effects of a change in price of one good/service to a change in demand of another good/service
- Elasticity of VMT to fuel prices suggests:
 - Short term: little effect on VMT
 - Long term: some reduction in VMT, partially offset by changes in driver choices
 - Assume that all other factors remain constant

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Short-Term Responses

- Trip chaining
- Using the household's most efficient vehicle
- Riding transit
- Carpooling
- Reducing discretionary driving during peak hours
- Biking or walking
- Reconsidering vacation ideas to minimize driving
- Budgeting disposable income for fuel
- Telecommuting / flex-hours

Long-Term Changes

- Purchase more economical vehicles
 - Smaller, lighter vehicles
 - Hybrids and diesels offer much better fuel economy
- Government regulations / legislation
 - Improve Corporate Average Fuel Economy (CAFE) Standards
 - Incentives and subsidies
- Consider moving closer to work / school / shopping

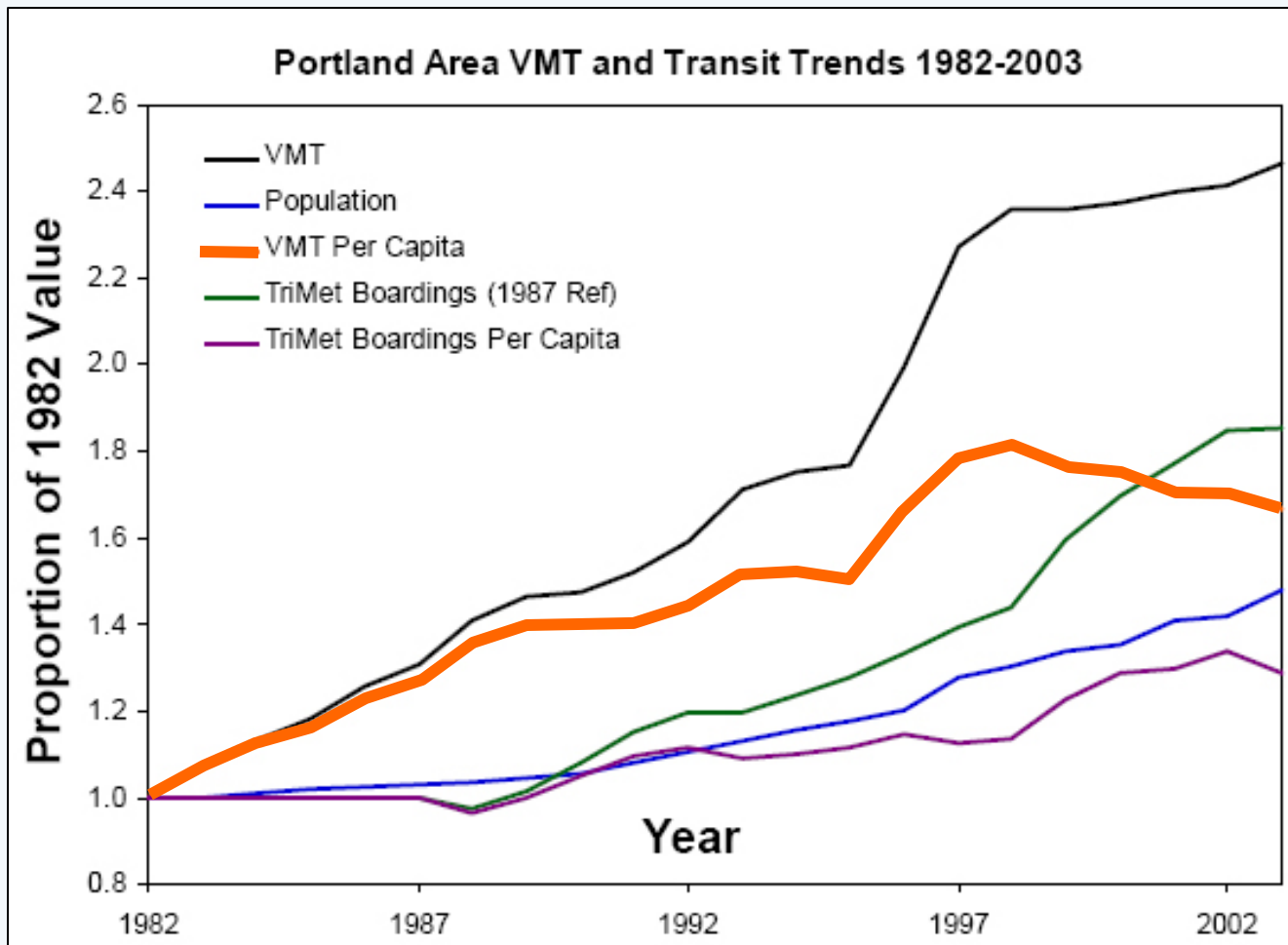
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Regional Land Use and Transportation Policy

- Metro and RTC are national leaders in regional planning
- Current policies that reduce impact of higher fuel prices:
 - Integration of land use and transportation planning
 - Reducing mean travel distance
 - Increasing usage of alternative modes
 - Slowing regional growth in vehicle miles traveled (VMT)
 - Providing a diverse range of housing options
 - Protection of farmland and natural areas
 - Maintaining a healthy economy

Portland/Vancouver VMT per Capita



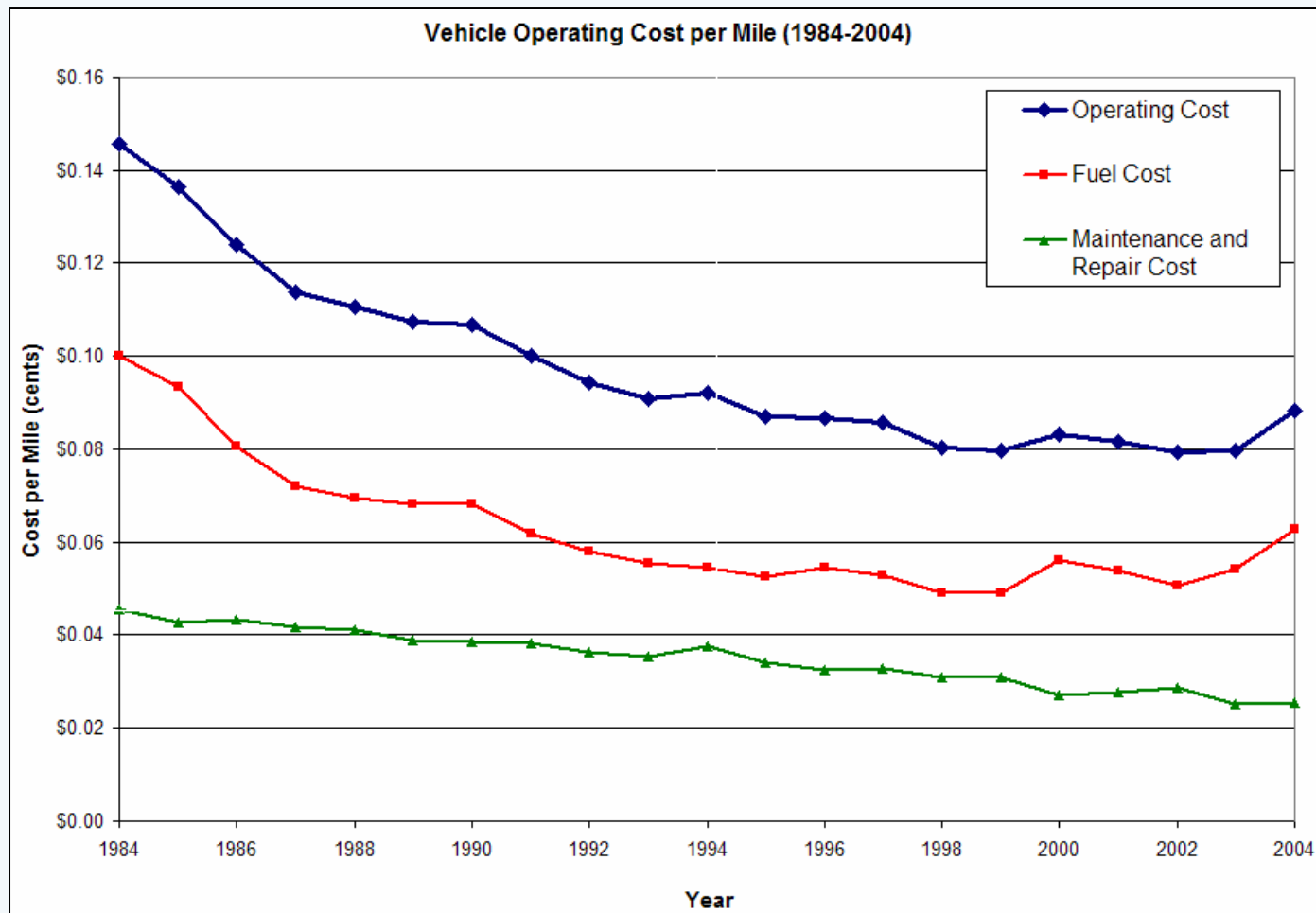
Current Modeling Best Practices

- The CRC team is following the state of the practice used by USDOT, FHWA, state and local governments
- Regional models are the tried and true procedures developed over decades of research and implementation
- Travel Model Improvement Program (TMIP)
 - Provides training, peer exchange, new model deployments & technical assistance to MPO's

Metro/RTC Travel Demand Forecasting Model

- Used to predict transportation choices
- CRC project uses the same forecasting methodology as other projects in the region
- Model considers total auto operating costs
 - Data is updated yearly from the AAA
 - Price of gasoline not explicitly defined
 - Average operating costs based on multiple vehicle types
 - Automobile operating costs have been fairly stable over decades, despite changes in gasoline prices

Vehicle Operating Cost per Mile (1984-2004)



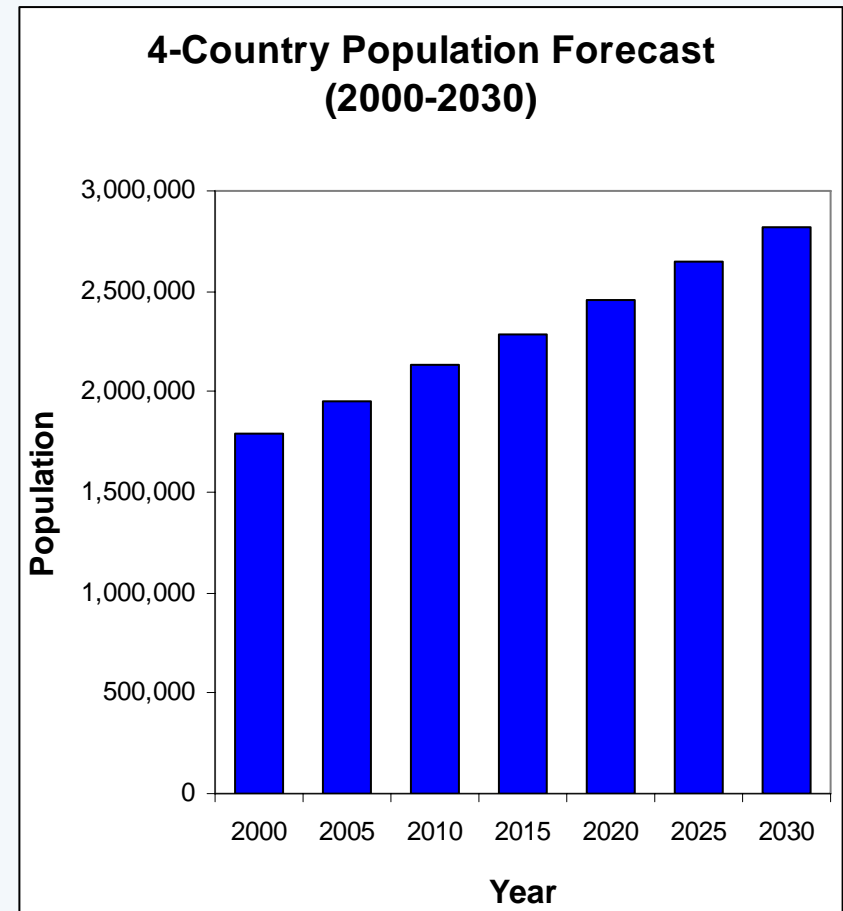
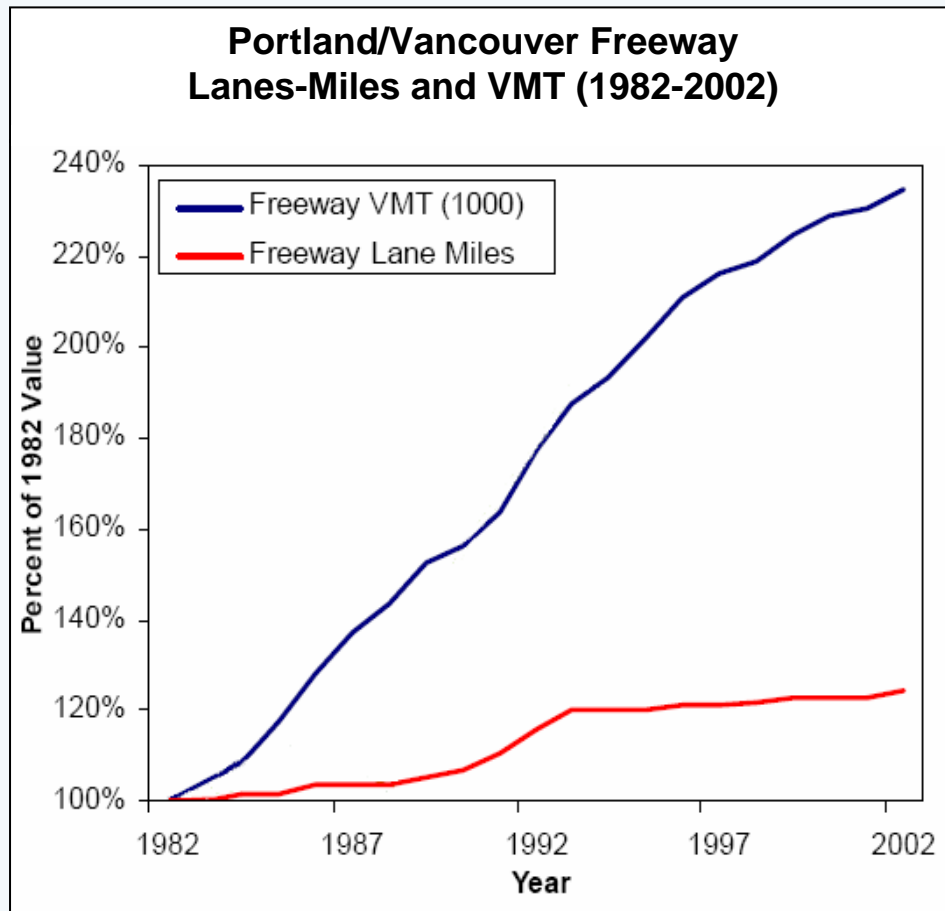
Future Plans

- White paper: “Future Oil Supply Uncertainty and Metro”
 - “To explore how Metro may approach the possibility of future uncertainty in the supply and price of oil. It identifies future oil supply uncertainty as a timely risk management issue, and establishes a basis for the Metro Council to consider possible policy and program responses.”
- Develop recommendations based on several different oil price scenarios
- Develop procedures and policies to select regional transportation plan (RTP) projects

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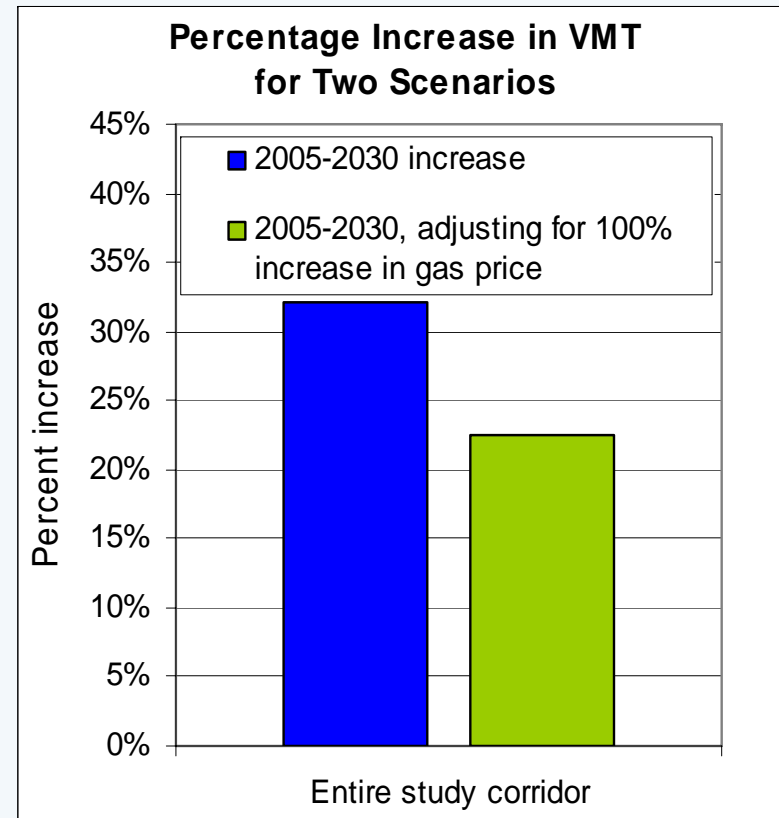
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Influences on CRC Travel Demand



CRC Travel Demand

- Traffic demand at the Interstate Bridge currently exceeds capacity
- Travel demands will increase over the next 25 years
- Corridor VMT is expected to increase even if fuel prices rise substantially



Columbia River Crossing Project

- Reduce or manage freeway congestion
- Improve transit performance
- Improve freight mobility
- Increase safety and decrease vulnerability to incidents
- Improve bicycle and pedestrian access
- Reduce seismic risk of the Columbia River Crossing

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Summary

- Oil is a key resource – its future is difficult to predict
- Rising fuel prices and reduced supply will have an impact on travel demand
- Drivers have short term remedies for higher fuel prices – greater changes are likely in the longer term
- “State of the practice” regional travel models are used for the CRC project
- Increased population and other factors will place an increasing strain on a corridor already over-capacity
- CRC project alternatives would benefit the region in many different ways, for many different users

Columbia River **CROSSING**

Fuel Costs and Travel Demand

CRC Task Force

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Public Comment