

# Oregon Least Cost Planning for Transportation:

Update to the Oregon Transportation Commission

July 20, 2011

# Presentation Overview

- Provide an overview of Oregon's Least Cost Planning (LCP) efforts
  - What does LCP mean?
  - How can it help transportation decision-making?
  - LCP efforts previously brought before the OTC
- Present work to date by stakeholder groups
- Request concurrence on direction taken
- Outline next steps

# Legislative Definition

- The 2009 Jobs and Transportation Act (now ORS 184.653) defines least cost planning as:  
“a process of comparing **direct and indirect** costs of **demand and supply options** to meet **transportation goals**, policies or both, where the intent of the process is to identify the **most cost-effective mix** of options”

# Overall Project Objectives

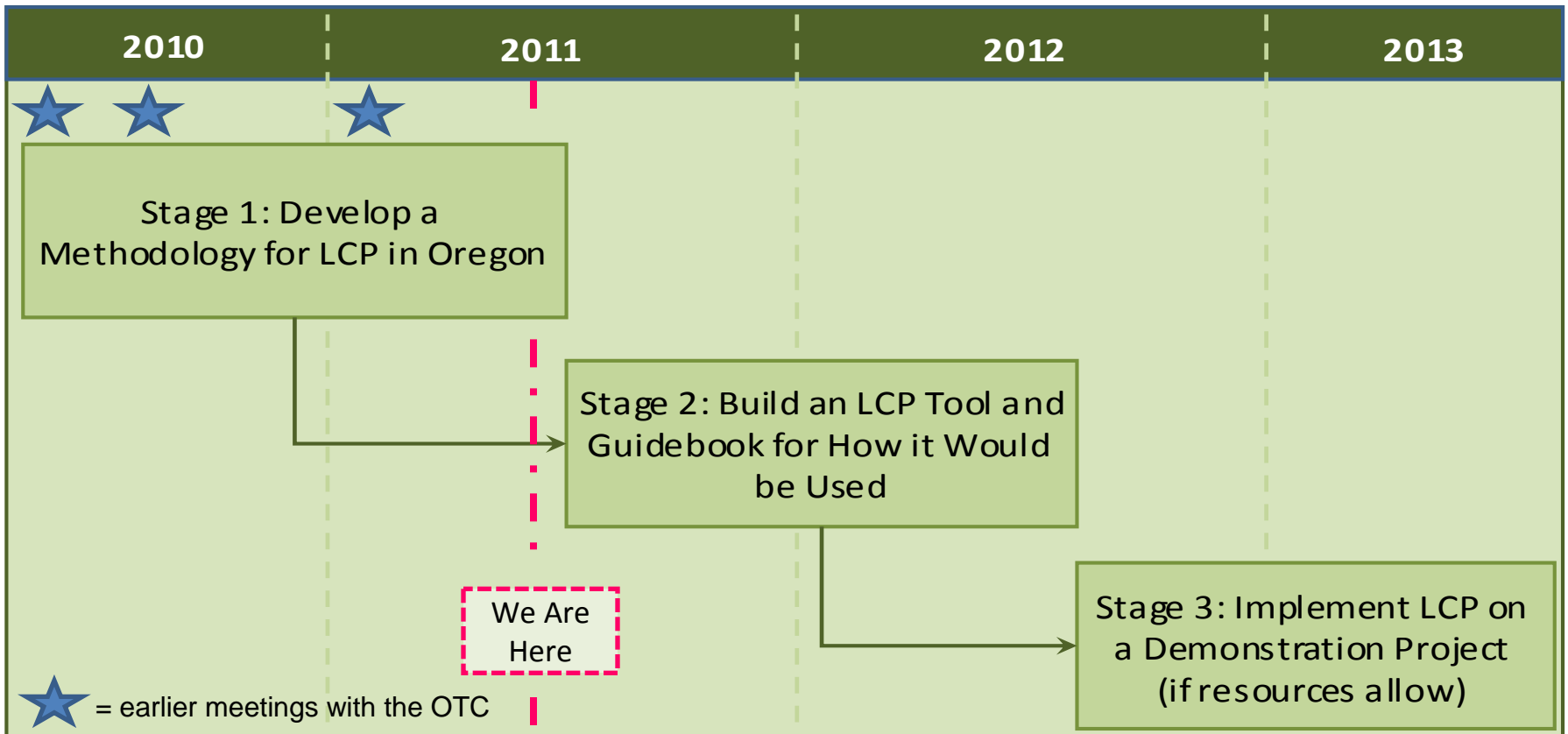
- **Develop a methodology for LCP in Oregon**, which could ultimately be used as a decision-making tool for transportation planning and project development in the state
- Assist ODOT in **making transportation decisions** in a way that is **transparent and accountable** to the public and **makes the best use of public funds** to achieve long-term goals

# Timeline

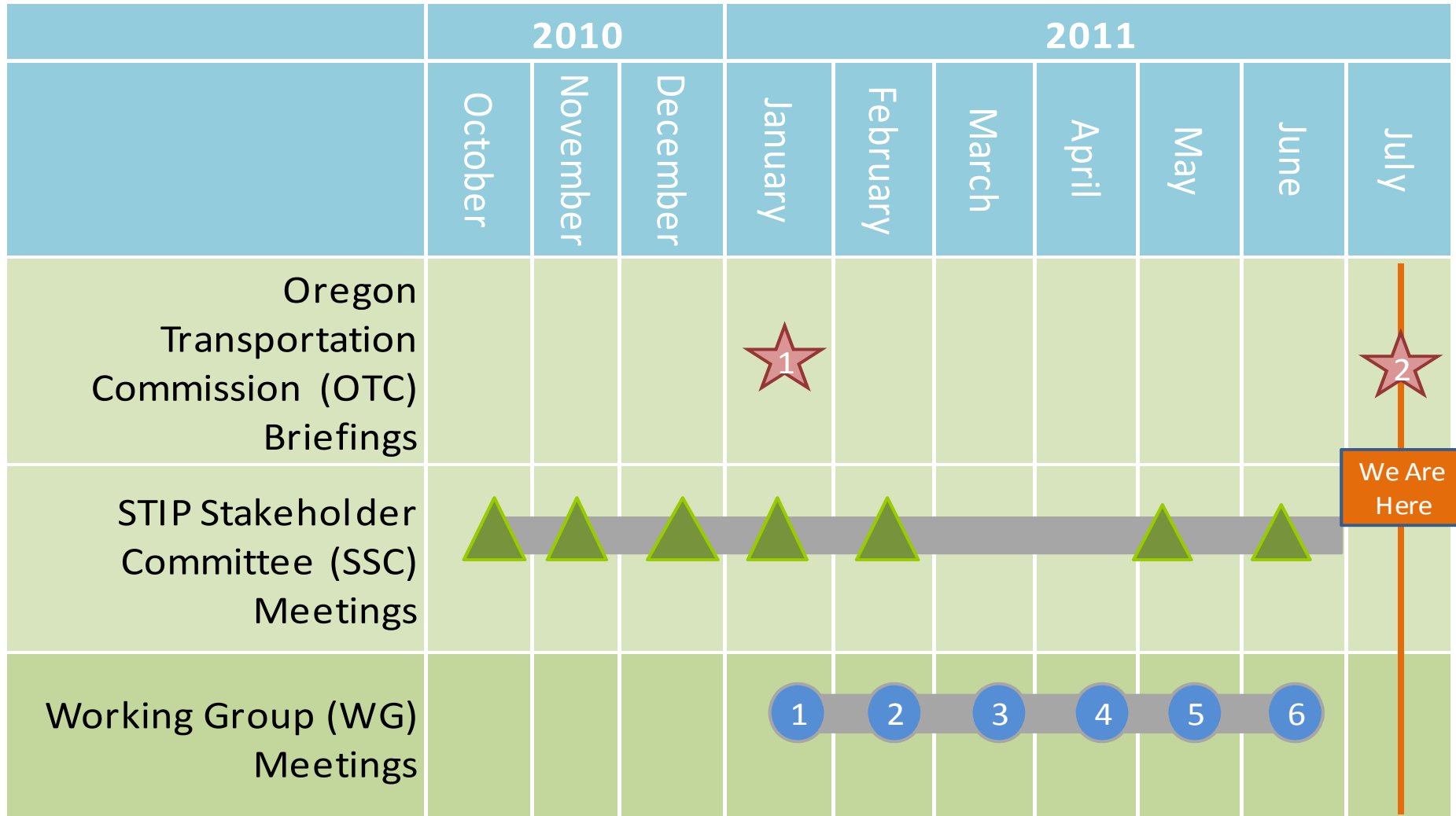
- **Stage 1: Prepare a Methodology for LCP.** Define objectives and transportation system performance categories, current procedures, general indicators, outreach recommendations
- **Stage 2: Develop a Beta Version of an LCP Tool and a Guidebook for How to Use It.** Create specific indicators, conduct outreach to key stakeholders, indicator comparison process, LCP analysis methodology
- **Stage 3: Implement LCP (if resources allow)**

# Timeline

## Oregon Least Cost Planning *Overall Project Timeline*



# OLCP Stage 1 Timeline



# Stage 1 Outcomes

- Discussion paper with case studies
- Series of recommendations from SSC to help give shape to OLCP
- OLCP Categories and General Indicators
- Recommendations for Outreach in Stage 2
- Evaluation of how OLCP can build on current ODOT procedures

# Project Principles and Context

Several overall principles have guided work to date:

1. LCP seeks the most **cost-effective** solutions.
2. Existing policies **lay the foundation** for LCP.
3. LCP will **utilize and build on** existing analysis procedures and tools.
4. The LCP methodology to be **useful for every region of the state.**
5. Use of the LCP methods will result in **information that can be considered and compared** in a decision process.

# Project Principles and Context, cont.

Several overall principles have guided work to date:

6. **Multiple techniques** will contribute to the LCP methodology.
7. Recommended methods will **allow for an overall understanding of the processes used**; they will not result in a “black box.”
8. **Both qualitative and quantitative** information will be utilized in the LCP methodology where appropriate.
9. The LCP methodology developed will be **consistent with related Agency efforts**.
10. The LCP methodology developed will not be a static product, but will be **amended and** improved over time.

# Who is Involved?

- **STIP Stakeholder Committee**

- Approximately 20 people including representatives from freight, public transit, ports, the Federal Highway Administration, state agencies, local governments, MPOs, environmental and private business interests

- **Oregon LCP Working Group**

- Transportation agency staff whose expertise is required for successful development and implementation of OLCP

# Oregon Least Cost Planning

Review of Earlier Efforts

# Discussion Paper



# Origins of Least Cost Planning

- **Developed in electric utility industry**
  - To consider broader set of choices for meeting service requirements
- **Key characteristics:**
  - Evaluation of a **wide variety of options**, including demand management
  - Consideration of **environmental and social costs** of service

# Selected Case Studies

Case Study Location	Scale	Project / Program
<b>Washington: Puget Sound Regional Council</b>	<b>Metropolitan (state mandate)</b>	<b>Transportation 2040</b>
<b>United Kingdom: UK Department for Transport</b>	<b>National</b>	<b>New Approach to Appraisal – “Refresh”</b>
<b>Indiana: Indianapolis</b>	<b>Metropolitan (private sector)</b>	<b>Central Indiana Transportation Plan</b>
<b>Virginia: Virginia DOT</b>	<b>State</b>	<b>VTrans 2035</b>

# Key Findings Across Case Studies

Key findings from the case studies were:

1. Applications have developed in response to each agency's **unique mission, mandate and goals**.
2. **Stakeholders** have helped improve the tools and the process.
3. LCP has helped agencies and stakeholders make **more transparent and informed** decisions.
4. LCP applications use a **Benefit-Cost** framework.
5. LCP has been applied at both **project and system** levels.
6. Applications have **evolved and improved** over time.

# Oregon Least Cost Planning

## Stage 1 Methodology Development

# Earlier Framing Questions

- Stage 1 featured a series of questions that served as the framework for how LCP will be developed in Oregon.
- Several brought to OTC in January 2011
  - LCP will focus first on **portfolios of actions**
  - LCP will be designed for use first at a **state or regional scale**
  - **Nine categories** consistent with other statewide goals and policies will be included in LCP
  - LCP will consider **monetized, quantitative, and qualitative** indicators

# Efforts Completed Since January

- Framing questions addressed by the SSC since the January OTC briefing:
  - Should OLCP explicitly consider **pricing** in its suite of demand management options?
  - How should OLCP address **risk and uncertainty**?
  - What type of **discount rate** should OLCP use?
  - How should OLCP **involve stakeholders** in the development of the tool?
  - What suite of **general indicators** should be included in OLCP?

# Demand Management

- **Question:** Should OLCP explicitly consider pricing in its suite of demand management options?
- **Answer:** OLCP should include pricing in its suite of demand management options.

# Risk and Uncertainty

- **Question:** How can OLCP acknowledge the uncertainties inherent in forecasting and measuring costs and benefits?
- **Answer:** OLCP will employ a variety of risk analysis tools in implementation to adequately acknowledge uncertainty.

# Discount Rate

- **Question:** What type of discount rate should be used in least cost planning?
- **Answer:** In general, LCP will consider different discount rates for different kinds and scales and durations of investments, and will apply a sensitivity testing using a range of discount rates through specific applications of the tool.

# Involvement of Stakeholders

- **Question:** How should OLCP involve stakeholders in the development of specific indicators in Stage 2?
- **Answer:** OLCP should work mainly with the Working Group, augmenting its participant list as appropriate. Regular briefings to the SSC and to the SSC members' agencies and groups are appropriate for big picture guidance.

# General Indicators




## Review of Objectives and Definition

- General indicators describe the **type** or **groupings** of measures that will be evaluated in Oregon's LCP methodology.
- General indicators are organized by **category**. Each of our nine categories has a number (between four and six) of general indicators.




# Oregon LCP Categories

- Mobility
- Accessibility
- Economic Vitality
- Environmental Stewardship
- Safety and Security
- Funding the Transportation System/ Finance
- Land Use and Growth Management
- Quality of Life and Livability
- Equity

# General Indicators

CATEGORIES	DESCRIPTION	GENERAL INDICATORS
 <p data-bbox="198 491 340 529">Mobility</p>	<p data-bbox="481 451 1205 696">Does the plan or action help reduce travel costs and improve travel time reliability? Travel cost includes both out-of-pocket expenses and time spent in travel. Reliability includes the extent to which travelers can count on the time their trip will take being consistent from day to day.</p>	<ul data-bbox="1425 451 1686 696" style="list-style-type: none"> <li>Travel time</li> <li>Delay</li> <li>Reliability</li> <li>Out of pocket costs</li> <li>Trip Length</li> <li>Volumes</li> </ul>
 <p data-bbox="198 766 405 805">Accessibility</p>	<p data-bbox="481 726 1199 925">Does the plan or action facilitate the ease with which travelers can reach or use modes of transportation? Does the plan or action ease access to opportunities and destinations that give rise to the need for travel?</p>	<ul data-bbox="1331 726 1779 936" style="list-style-type: none"> <li>Land use</li> <li>Connectivity/Ease of connections</li> <li>Modal availability</li> <li>Option value</li> <li>Changes in access (Parking supply and regulations)</li> </ul>
 <p data-bbox="198 982 367 1062">Economic Vitality</p>	<p data-bbox="481 962 1199 1079">Does the plan or action contribute to the economic prosperity of Oregon (i.e., growth in employment, production or other high value economic activity)?</p>	<ul data-bbox="1250 962 1856 1153" style="list-style-type: none"> <li>Economic impacts of more efficient transportation services</li> <li>Economic impacts of transportation spending</li> <li>Wider economic impacts</li> <li>Community revitalization/relocation effects</li> </ul>

# General Indicators, Cont.

CATEGORIES	DESCRIPTION	GENERAL INDICATORS										
 Environmental Stewardship	Does the plan or action help provide a transportation system that meets present needs without compromising the ability of future generations to meet their needs from the perspective of ecological and social objectives?	Air Energy and greenhouse gases Biodiversity Land Water Community resources										
 Safety and Security	Does the plan or action improve the safety of transportation facilities and systems? Does it help improve security at existing or planned transportation facilities?	<table border="0"> <tr> <td style="text-align: center;"><u>Safety</u></td> <td style="text-align: center;"><u>Security</u></td> </tr> <tr> <td>Property damage only incidents</td> <td>Crime</td> </tr> <tr> <td>Injury incidents</td> <td>Perception of security</td> </tr> <tr> <td>Fatality incidents</td> <td>Resiliency of the transportation network</td> </tr> <tr> <td>(Emergency vehicle response time)</td> <td></td> </tr> </table>	<u>Safety</u>	<u>Security</u>	Property damage only incidents	Crime	Injury incidents	Perception of security	Fatality incidents	Resiliency of the transportation network	(Emergency vehicle response time)	
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Property damage only incidents	Crime											
Injury incidents	Perception of security											
Fatality incidents	Resiliency of the transportation network											
(Emergency vehicle response time)												
 Funding the Transportation System / Finance	How does the plan or action impact public accounts? Impacts include effects on fiscal balances and indebtedness.	Capital costs Lifecycle costs Operating revenues Levering funds from private sector and other public agencies Net impact on state fiscal balance and debt										

# General Indicators, Cont.

CATEGORIES	DESCRIPTION	GENERAL INDICATORS
 <p>Land Use and Growth Management</p>	<p>Does the plan or action help foster efficient development patterns that optimize travel, housing, employment, and infrastructure spending decisions?</p>	<p>Amount and nature of land developed Population and employment density</p>
 <p>Quality of Life and Livability</p>	<p>Does the plan or action improve the quality of living and working environments, and the experience for people in communities across Oregon?</p>	<p>Physical activity Exposure to pollutants Community cohesion/severance Streetscape/journey ambiance Access to recreational resources and open space</p>
 <p>Equity</p>	<p>Does the plan or action improve the availability of transportation choices among different geographies and population groups? How are the effects of the plan or action distributed across different geographies and population groups?</p>	<p>Distribution of benefits/costs by population group Distribution of benefits/costs by geography Distribution of benefits/costs by user vs. non-user</p>

# Next Steps


























- Stage 2 will:
  - Identify and develop specific indicators that nest under the general indicators developed in Stage 1
  - Arrange these in an LCP tool ready to test on a planning process
  - Prepare a guidebook for how to use LCP on a:
    - State level
    - Regional level
    - Corridor level

# Conclusion

- Stage 2 will result in an OLCP analysis tool that can be tested on a planning process
- OLCP will focus on planning processes first
- Parts of it may be adapted to projects later
- OLCP will not be a static product
- Project Website:

[www.oregon.gov/ODOT/TD/TP/LCP.shtml](http://www.oregon.gov/ODOT/TD/TP/LCP.shtml)

# OLCP Stage 2 Timeline (Draft)

	2011						2012					
	Summer		Fall				Winter		Spring			
OTC Briefings												
SSC Meetings												
Working Group Meetings												
Coordination Workshops												
Specific Indicators												
Comparison Process												
Guidance Documentation												
LCP Tool Beta Version												

# Oregon Least Cost Planning

## Your Questions

<http://www.oregon.gov/ODOT/TD/TP/LCP.shtml>