



Oregon Modeling Improvement Program

An Innovative Approach to Support Public Policy & Decision-Making

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Committee October 20, 2010

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OMIP OVERVIEW

- Purpose & strategic elements
- Accomplishments
- Next steps
- Next challenges





WHAT IS THE OREGON MODELING IMPROVEMENT PROGRAM? (OMIP)

- Comprehensive statewide modeling & analysis program
- Started by ODOT in 1994
- Addresses complex rules & regulations
- Multi-agency effort





MODELING IN THE 1990s

- Modeled air quality conformity, major project development
 - ODOT*, 4 MPOs (Metro, LCOG, RVCOG*, MWVCOG*) and Bend*
- New federal & state mandates
 - Clean Air Act Amendments, National Environmental Policy Act, Transportation Equity Act for the 21st Century
 - Oregon Transportation Rule, Transportation Growth Management, Oregon Transportation Plan
- Modeling methods outdated & could not address mandates
 - Best modeling practices, timeliness, decision-making support



MODELING IN THE 1990s, cont'd

- **OMIP provided strategic direction**
 - Establish collaborative working relationships with good communication
 - Create oversight groups for policy and applications
 - Improve transport models, integrate land use & economics
 - Establish best practices & model development /application guidelines
 - OMIP Strategic Implementation Plan (1999)





OMIP STRATEGIC ELEMENTS





OMIP STRATEGIC ELEMENTS

■ RESOURCES

- Funding
- Staff & Equipment

■ OUTREACH

- OMSC & OMUG
- Peer Review
- Training & Education

■ DEVELOPMENT

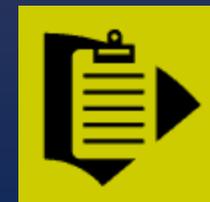
- Research
- Best Practices
- Documentation
- Model Development

■ IMPLEMENTATION

- Guidelines & Protocols
- Case Studies

■ DATA

- Household & Activity Surveys
- Freight Data
- GIS





OMIP started a new interactive approach to analysis





MOVED FROM A LINEAR DECISION-MAKING PROCESS

**Policy
Question**

**Technical
Analysis**

Results

**Decision/
Action**

POLICY

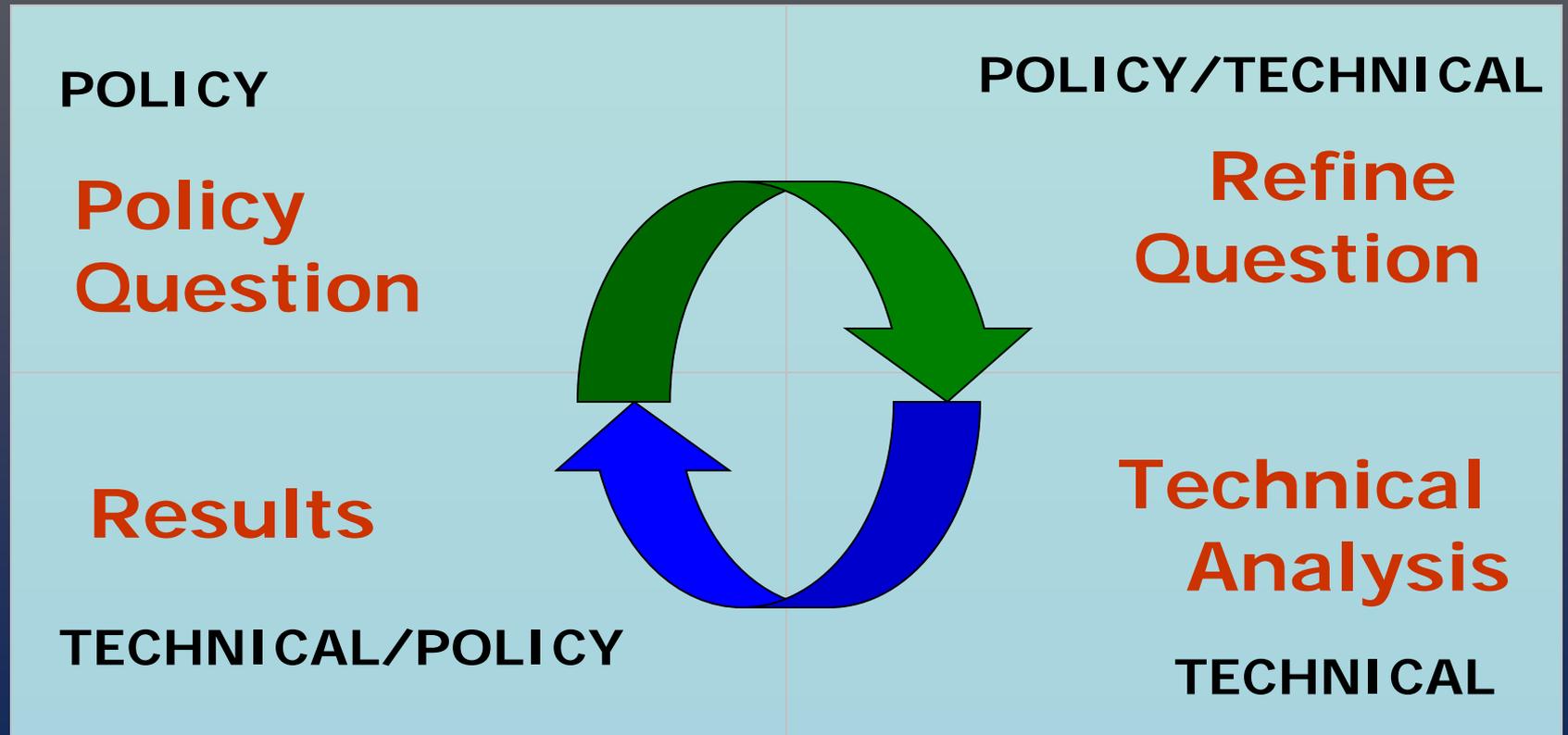
TECHNICAL

TECHNICAL

POLICY



TO AN INTERACTIVE & ITERATIVE DECISION-MAKING PROCESS





HOW DOES OMIP HELP OREGON?

- Address federal and state mandates
- Develop & analyze policy options
- Make better investment choices
- Provide innovative tools and methods to address pressing issues:
 - Sustainability and quality communities
 - Greenhouse gas reduction & least cost planning
- Foster collaboration to optimize limited resources (staff, funds)



***"Necessity, Who is the Mother of
Invention"***

Plato, The Republic



A LOT HAS BEEN ACCOMPLISHED

RESOURCES

- Collaborative projects
- Qualified staff
- Shared resources



OUTREACH

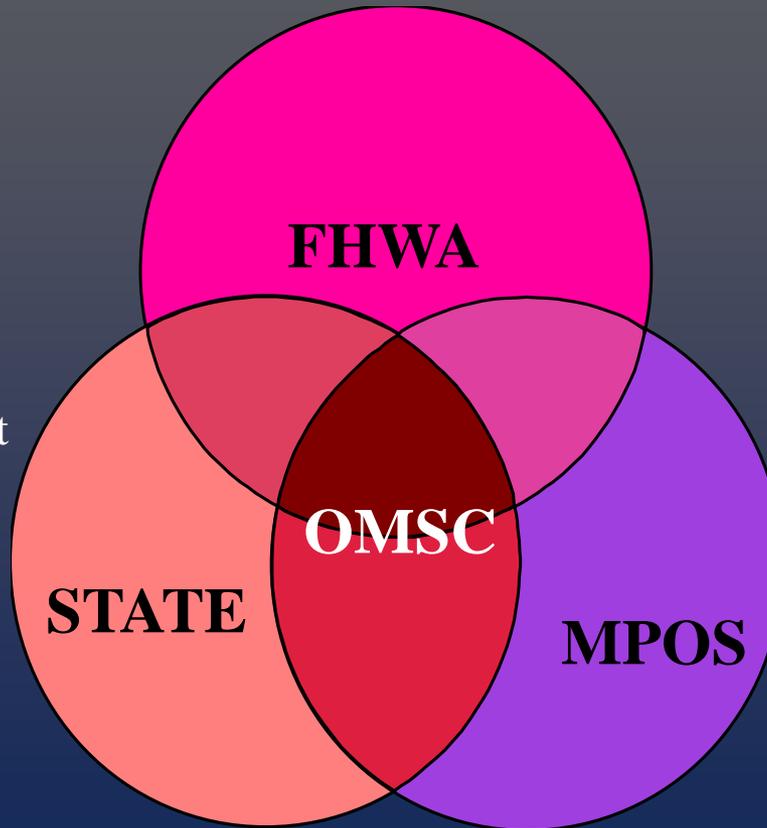
- Continuous International Peer Review panel
- Peer review of MPO models
- OMSC active forum for discussion & debate
- OMUG active forum for information sharing
- Partnership with OTREC universities for research & interns



OREGON MODELING STEERING COMMITTEE

Partnership of federal, state and local agencies and jurisdictions

Transportation
Office of Economic Analysis
Land Conservation & Development
Environmental Quality
Energy
OR Transportation Research
& Education Consortium
Port of Portland



Metro
MWVCOG
LCOG
RVCOG
Bend MPO
Corvallis MPO



A LOT HAS BEEN ACCOMPLISHED

DEVELOPMENT

- OR StateWide Integrated Model (SWIM1 & SWIM2)
- 5 MPO Jointly Estimated Models in R code (JEMnR)
- 18 Urban Models in small OR cities (OSUM)
- Land Use Scenario DevelopR model (LUSDR)
- Greenhouse gas Statewide Transportation Emissions Planning model (GreenSTEP)
- OR Modeling Collaborative (OMC) at PSU to support applied research
- Comprehensive documentation



A LOT HAS BEEN ACCOMPLISHED

IMPLEMENTATION

- OMIP Strategic Plan, guidelines & best practices
- Significant policy issue applications:
 - Brainstorming on Willamette Valley transportation futures
 - Alternatives analysis for infrastructure investment decisions
 - Induced growth analysis for Newberg-Dundee Bypass EIS
 - Infrastructure prioritization for OR Bridge Deficiency Analysis
 - Long-range planning - OR Transportation & OR Freight Plans
 - Rogue Valley Regional Problem Solving Study
 - Greenhouse gas emissions reduction scenario development



A LOT HAS BEEN ACCOMPLISHED

DATA

- 1994-6 MPO & rural OR household & travel activity surveys
- 2006 pilot for GPS survey application
- 2009-2012 statewide household & travel activity survey
- Freight Commodity Flow Forecasts, freight shipper & carrier surveys, truck intercept surveys
- GIS relational database development
- New visualization tools



We met the original OMIP measure of success

**"BECOME THE WAY OREGON
DOES BUSINESS"**





NEXT STEPS

RESOURCES



- Continue multi-agency & jurisdictional cooperation
- Develop program with OMC & OTREC universities
 - Provide interns
 - Train future qualified staff
- Work with OMC & OTREC for research funding



NEXT STEPS

OUTREACH



- Expand outreach & information program with OMC & OTREC
- Engage private sector in OMC activities
- Expand modeling & analysis training to ODOT, MPOs & others
- 6th OR Integrated Modeling Symposium in 2012



NEXT STEPS

DEVELOPMENT

- Incorporate land use, environmental & least cost planning capabilities in OR models
- Build interactive links among multi-level models
- Explore transition to tour-based models
- Develop sketch/scenario planning tools
- Improve economic & freight modeling
- Work with OMC & OTREC universities on applied research projects





NEXT STEPS

IMPLEMENTATION

- Continue modeling for high level policy questions
- Expand analysis support for ODOT, cities, counties, other state agencies
- Improve visualization & communication
- Update guidelines & protocols





NEXT STEPS

DATA



- Complete statewide household & travel activity survey & analysis
- Develop center for data storage & access at PSU
- Improve freight data



CONTINUED CHALLENGES

Coordination & interaction of technical & policy people

- Develop variety of analysis tools & processes
- Obtain good analytical tools
 - Recognize constraints of time, funding & staff resources
- Educate & communicate capabilities & processes for using analytical tools



Improve representation of economic factors & understand importance to stakeholders



CONTINUED CHALLENGES



Evolving public policy issues

- Greenhouse gas emissions
- Least cost planning
- Sustainability
- Pricing



Funding

- Qualified staff
- State-of-the-art equipment
- Research & development for continuous improvement
- Data



FOR MORE INFORMATION

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Oregon Modeling Steering Committee (OMSC)

<http://www.oregon.gov/ODOT/TD/TPAU/OMSC.shtml>

Oregon Modeling Users Group (OMUG)

<http://sites.google.com/site/ormodelug/>



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