



Oregon Department of Transportation



*4th Oregon Symposium
Integrated Land Use & Transport Models*

OREGON MODELING IMPROVEMENT PROGRAM

November 15, 2005





WELCOME TO OREGON

1.5M people
(48% Portland area)

6 MPOs ●

Economy

- Service
- Manufacturing & Distribution
- Hi-Tech
- Resource-based

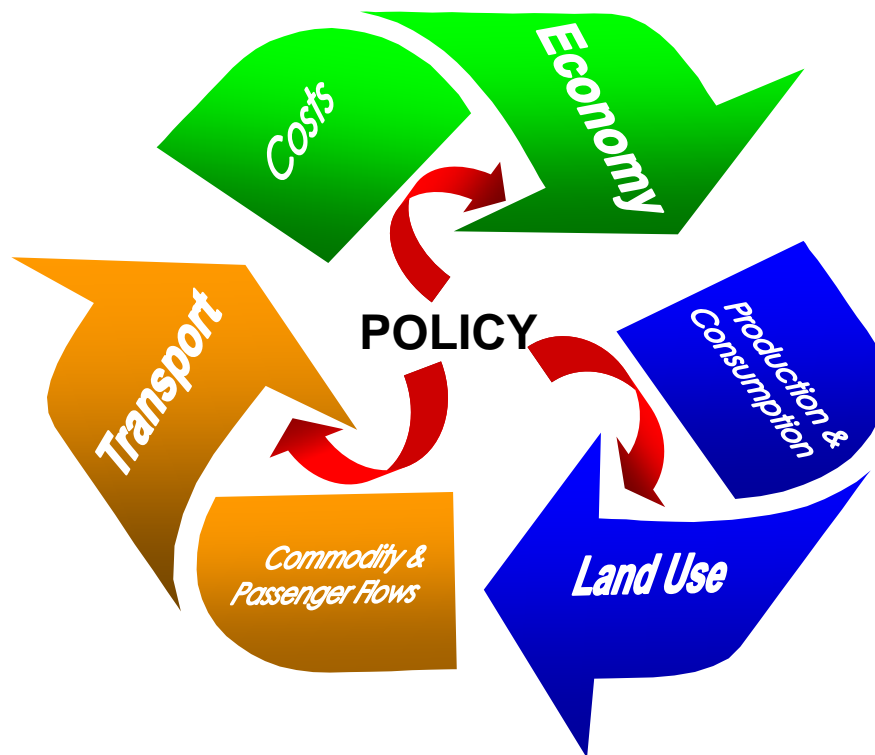
Progressive State

- Land Use Laws
- Compact growth
- Sustainability





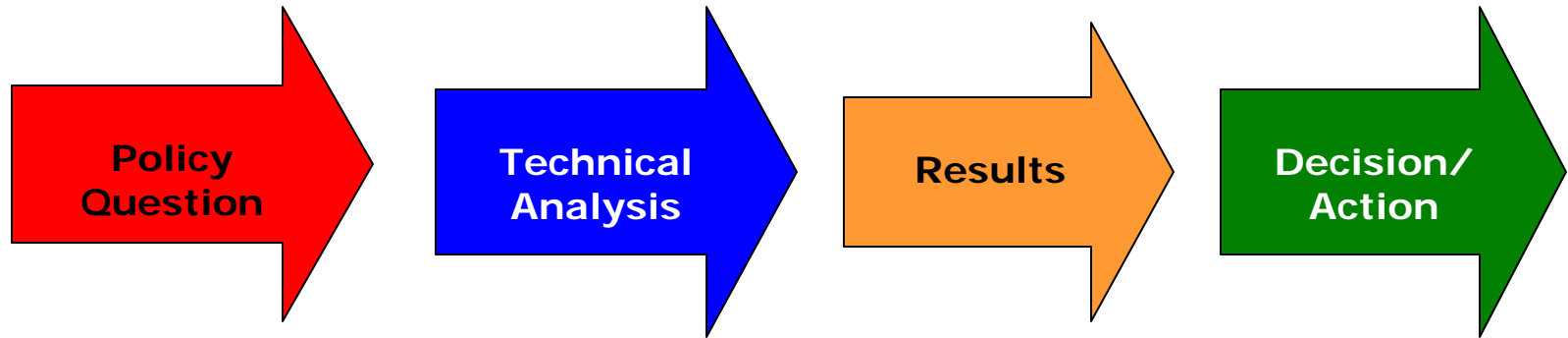
REASONS FOR OMIP



- Model methods outside Portland Metro were outdated
- Could not meet new state & federal mandates
- Could not provide needed information
- Losing ability to effectively participate in decision-making process



HISTORICAL CONTEXT FOR MODELING



Local planners
State DOT
Legislatures
Federal government
Investment bankers
"The public"

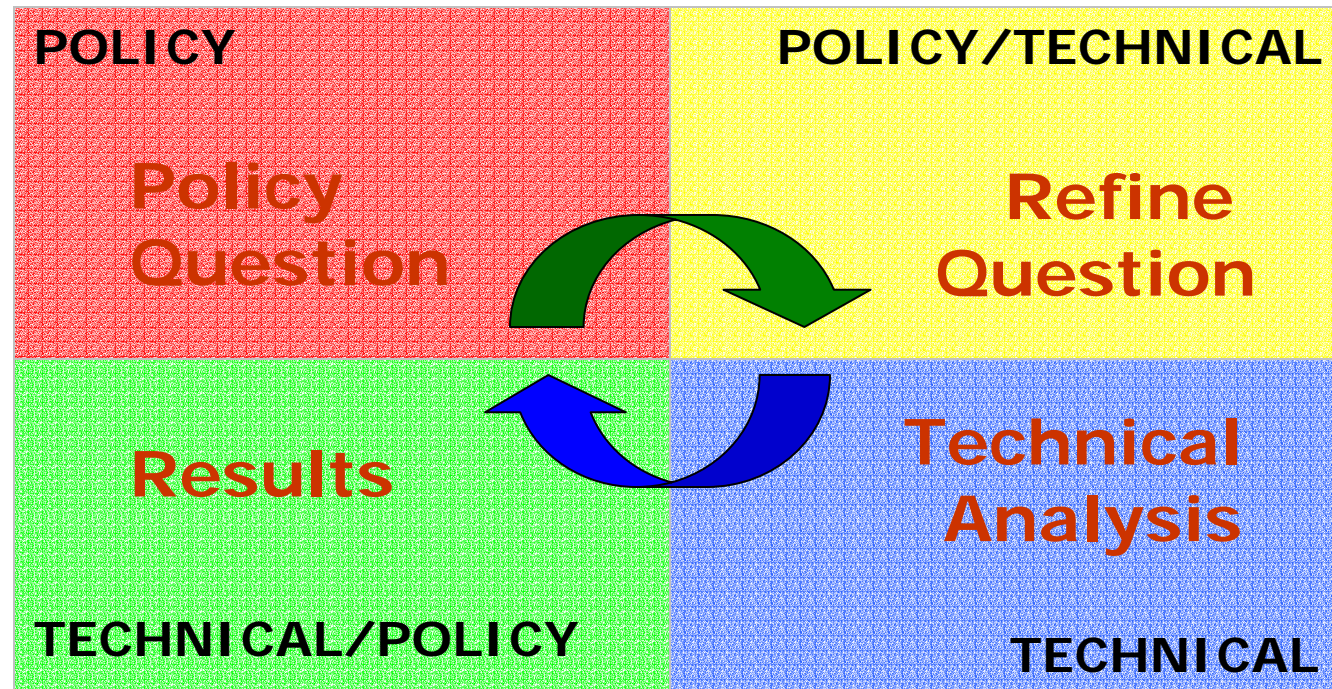
Travel models
Traffic impact studies
NEPA analyses
Land use models
Market analyses
Expert panels

Engineering reports
Environmental impacts
Public hearings
Rational planning

Trade-offs
Uncertainty
Priorities



INTERACTIVE & RESPONSIVE DECISION-MAKING PROCESS





Oregon Department of Transportation



OMIP STRATEGIC ELEMENTS



OMIP STRATEGIC ELEMENTS

RESOURCES	OUTREACH	DEVELOPMENT	IMPLEMENTATION	DATA
Funding	Oregon Modeling Steering Committee	Research	Standards	Household Activity & Travel Survey
Qualified Staff	Peer Review Panel	Joint Model Development	Protocols	Recreation/Tourism Activity Survey
Equipment	Statewide Modeling User Group	Rural Joint Model Estimation	Case Studies	Oregon Travel Behavior Survey
	Training & Education	Urban Joint Model Estimation		Longitudinal Panel Survey
	Information Sharing	Model Enhancements		Commodity Flow Data Collection
	Communication	Documentation Enhancement		Freight Shipper and Carrier Survey
	Formal Education	TRANSIMS		Truck Intercept Survey
		Transportation & Land Use Model Integration Program		Truck Generation & Distribution Survey
				Geographical Information System



OMIP TRACK 1

RESOURCES

Funding

Qualified Staff

Equipment



OMIP TRACK 2

OUTREACH

Oregon Modeling Steering Committee

Peer Review Panel

Statewide Modeling User Group

Training & Education

Information Sharing

Communication

Formal Education



TLUMIP EXPERT PEER REVIEW PANEL

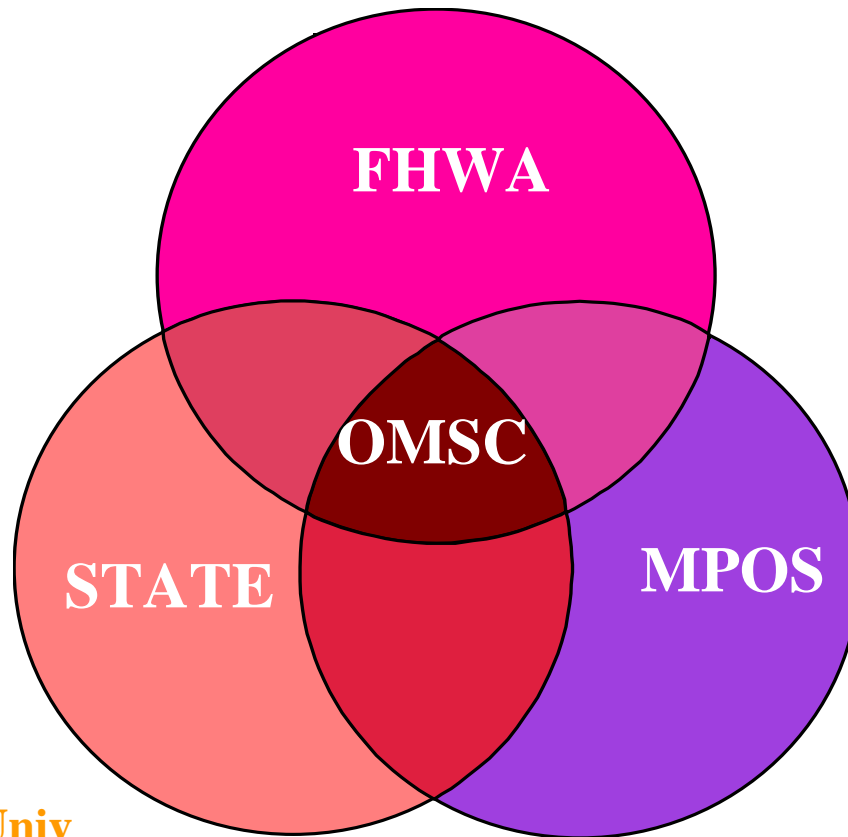
- Julie K.P. Dunbar, Dunbar Transportation Consulting, Bloomington, IL
- Kimberly M. Fisher, Transportation Research Board, Washington, DC
- Robert Gorman, Federal Highway Administration, Washington, DC
- Frank S. Koppelman, Northwestern University, Evanston, IL
- Keith Lawton, Keith Lawton Consulting, Newberg, OR
- David Simmonds, David Simmonds Consultancy, Cambridge, U.K.
- Michael Wegener, University of Dortmund, Dortmund, Germany



OREGON MODELING STEERING COMMITTEE

Partnership among federal, state & local agencies & jurisdictions

GERT
ODOT
DEQ
OECDD
OHCD
DLCD
Port of Portland
Portland State Univ



Metro
MWVCOG
LCOG
RVCOCG
Bend
Corvallis



OMIP TRACK 3

DEVELOPMENT

Research

Integrated Model Development

Urban Joint Model Estimation

Rural Joint Model Estimation

Model Enhancements

Documentation Enhancement

TRANSIMS

Transportation/Land Use Model Integration Program



OMIP TRACK 4

IMPLEMENTATION

Standards

Protocols

Case Studies



BIG PICTURE BRAINSTORMING ON POSSIBLE FUTURES

Willamette Valley Livability Forum Alternative Transportation Futures



A long-range, comprehensive, regional look at possible land use & transport futures in the populous Willamette Valley

Result

Expected future effects of:
No-Action, compact development, major highway expansion, major transit expansion, transportation tax, balanced system



STATE LEVEL POLICY DEVELOPMENT

Oregon Transportation Plan Update

- Statewide multimodal plan
- Provides umbrella policies & investment strategies for modal, facility, regional & local plans
- Originally adopted in 1992
- Spans 2005-2030

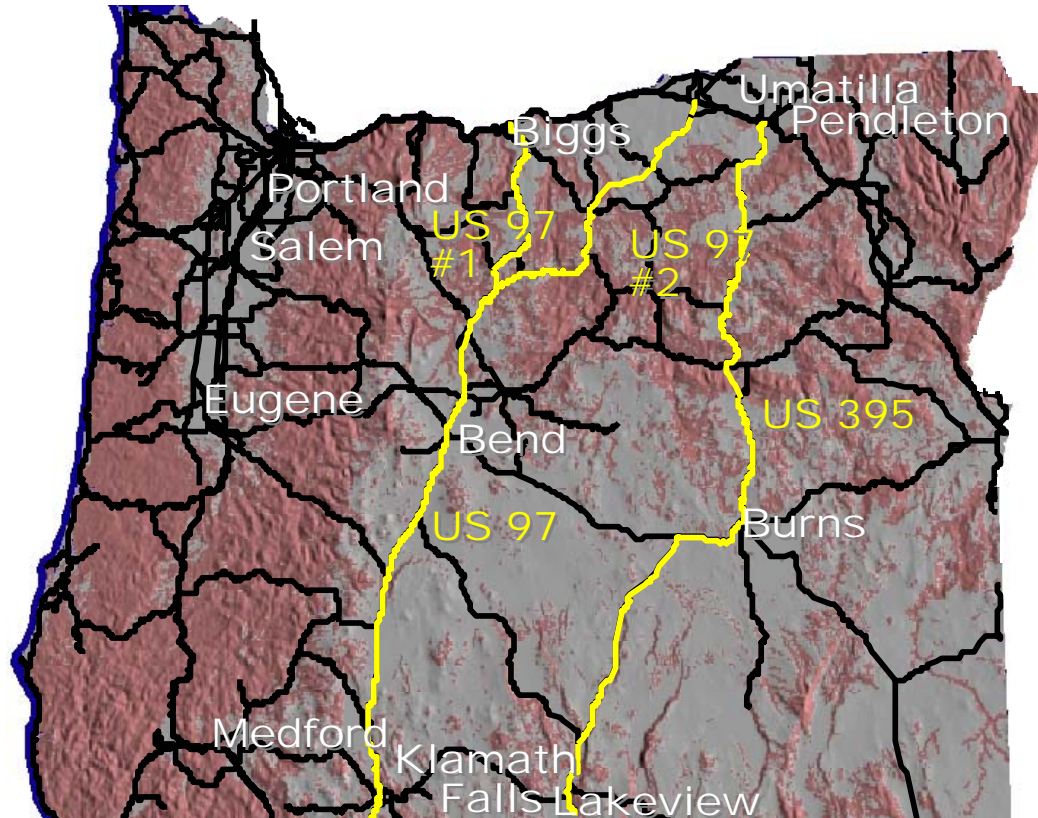
Result

Provided reference case for alternative scenarios
Showed that "modernization" projects not necessarily improve mobility
Provided data to support what was suspected but not confirmed
Reinforced & supported other analysis processes/tools



INFRASTRUCTURE INVESTMENT DECISIONS

House Bill 3090 Alternatives



Proposal:
Build freeway to
divert development
& traffic from
Western Oregon to
Central & Eastern
Oregon.

Result
Proposal did
not meet
policy intent



INDUCED GROWTH ANALYSES

Newberg-Dundee Bypass Environmental Impact Statement

- A bypass of two towns is proposed on a major recreation route within commuting distance of Portland metropolitan area.
- The model was used to examine the potential effects on the growth of population, jobs, & travel in the affected area.

Result
EIS withstood land use challenge



INFRASTRUCTURE PRIORITIZATION

Oregon Bridge Deficiency Analysis

- Major bridge deterioration problem in Oregon, especially on freeways
- Model used to examine economic, land use & transport impacts :
 - Statewide & regional impacts of limiting truck weights on transportation costs, economic production, & jobs
 - Impact on travel & land use patterns
 - Develop staged improvement program

Result

Statewide & regional info for decision-makers
\$2.8 billion investment in bridges & roads



JOINT MODELING PROJECTS

Urban Joint Model Estimation (JEM-in-R)

Rural Joint Model Estimation (OSUM)

Develop *best* models using data from all Oregon MPO areas & 8-counties

Result

Compatible & consistent models for ODOT & all Oregon MPOs
Oregon data for Oregon models



OMIP TRACK 5

DATA

Household Activity and Travel Survey

Recreation/Tourism Activity Survey

Oregon Travel Behavior Survey

Longitudinal Panel Survey

Commodity Flow Data Collection

Freight Shipper and Carrier Survey

Truck Intercept Survey

Truck Generation and Distribution Survey

Geographical Information System



WHAT'S NEXT FOR OMIP?



OMIP FUTURE - RESOURCES

- Cooperation with PSU Center for Transportation
- Streamline cooperative modeling program
- Reinforce multi-agency & jurisdictional cooperation



OMIP FUTURE - OUTREACH

- 4th Integrated Modeling Symposium
- Focus OMSC on its role in informing public policy
- Work with PSU to expand outreach, education & training opportunities
- Continued outreach to inform & engage users
 - Inside & outside of Oregon
 - Inside & outside of ODOT



OMIP FUTURE - DEVELOPMENT

- Complete transitional and next generation of statewide model
- Build interactive link between statewide model & local urban & rural models
- Expand transport & land use integration at for urban models
- Continue to develop JEM-n-R
- Expand OSUM to all parts of OR
- Improve visualization



OMIP FUTURE - IMPLEMENTATION

- Continue high profile modeling projects
 - Columbia River Crossing
 - East/Central OR land use/transport futures analysis
- Day-to-day support of cities, counties, state agencies



OMIP FUTURE - DATA

- Update statewide survey
 - combined longitudinal panel & cross-sectional survey



KEYS TO A SUCCESSFUL PROGRAM

- *Communication*
- *Consistency*
- *Cooperation*



Oregon Department of Transportation



THE END