



OREGON MODELING PROGRAM OVERVIEW

Oregon Modeling Steering Committee



Federal Highway Administration

Governor's Community Development Office

Oregon Department of Transportation

Oregon Department of Administrative Services

Oregon Department of Environmental Quality

Oregon Department of Land Conservation and Development

Oregon Economic and Community Development Department

Oregon Housing and Community Services Department

Portland Metro

Mid-Willamette Valley Council of Governments

Lane Council of Governments

Rogue Valley Council of Governments

The Oregon Modeling Steering Committee

The Oregon Modeling Steering Committee (OMSC) was formed in 1996 to provide direction and oversight to the statewide modeling program. Member agencies include the Federal Highway Administration, the Governor's Community Development Office, 6 state agencies, and the four metropolitan planning organizations (MPOs) in Oregon. The OMSC has focused on coordination in its formative years. In order to have a solid statewide program, it has been important to bring everyone to the same level of understanding and agreement on modeling - what it can do and what should be done with it. The other role for the OMSC is to provide technical advice and expertise and to drive consistency and advancement in model application.

Close coordination with local constituencies is of great importance to the program. The first priority is to have a tool that is used and understood at the level it is most effective, and that is with local staff and elected officials.

Metropolitan and Statewide Modeling

The two primary levels of modeling in Oregon are at the metropolitan and statewide levels. At the metropolitan level, MPOs provide modeling for their member jurisdictions and ODOT's Transportation Planning Analysis Unit (TPAU) provides modeling for non-MPO areas. MPOs prepare Unified Planning Work Programs (UPWPs) that define the work they will accomplish over the next fiscal year, including staff and other resource allocations. TPAU prepares the same type of work program.

Metropolitan Modeling Program

There are several tracks that are established for transportation and land use modeling in Oregon. For metropolitan modeling, several major activities are ongoing:

- Consistency: "Best Practices" manuals are available for all jurisdictions and consultants doing modeling in Oregon and modeling protocols are being developed. This helps guide the OMSC Peer Review Subcommittee in its work and ensures that modeling results are consistent throughout the state, i.e., all jurisdictions have consistent analyses, and not the analysis that best fits the results they desire.
- Technical Assistance: ODOT prepared "prototype" models for small MPOs to eliminate the need to build costly models for each community. This provides
- easy access to modeling tools at the least cost to smaller jurisdictions. Metro and TPAU also regularly provide assistance to small MPOs at their request.

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- **Model Integration:** TPAU, Metro and the other MPOs have developed a "joint estimation" model that incorporates the unique characteristics of each MPO into data sets that can be used by all. It includes destination-choice considerations (certain income levels are more likely to go to job A than job B). When the mode choice is brought in, it allows pricing considerations (different income levels value time differently and this can be considered in road pricing analyses). The inclusive value of multi-model accessibility is included in the model (other models have been dependent upon auto accessibility but this model takes all modes, weights them and the value of these modes becomes part of destination choice). It is expected that this joint model will be implemented soon in all the MPOs and will greatly enhance all MPO models.
- **Program Integration:** TPAU and the MPOs are working together to prepare an integrated UPWP so that all modeling activities are reflected in ODOT and MPO UPWPs. A list of all tasks to be accomplished by fiscal year was distributed prior to the last OMSC meeting, and identifies the priority of projects as well as the lead agency/jurisdiction. The MPOs and ODOT meet quarterly to coordinate projects, identify staff/other resource needs, and to identify other issues or opportunities.
- **Training:** ODOT regularly provides training to local jurisdictions and agency staff involved in modeling or modeling application, to provide both basic understanding of modeling as well as more sophisticated application.

All the work at the metropolitan level has been well coordinated and is providing local jurisdictions tools to look at transportation and land use issues within their communities. What is missing in the metropolitan models, however, is the ability to look at the bigger picture. What happens between communities? With areas of influence expanding, how do we know what impact decisions in one community will have on nearby communities or the broader region? What is the impact of land use decisions on the transportation network and vice versa? How do economic considerations factor into land use and transportation decision-making? What are the logical termini of a metropolitan model and what trip interaction occurs at these external stations? The statewide model was the next step to improving the metropolitan models, and was developed with full support of ODOT and the MPOs.

The Statewide Model

The first generation of the statewide model is complete and, among other projects, it was used to analyze alternative development scenarios in the Willamette Valley Forum project. EPA's Joan Baker commented in an email to Larry Schaffner/LCOG that "...I very impressed with the modeling team, and commend the Oregon Department of Transportation and Federal Highway Administration for funding such an innovative and comprehensive model. The feedback between economics, land development, and transportation incorporated in the model provided insights that could not have been gained in other ways. Further integrative modeling of this type should be continued and expanded."

The next generation of the model will be completed by the end of 2001 and will have greater capability to analyze the interaction of land use, transportation, and economic activities. Not only does the statewide model allow consideration of broader relative impacts, it will be an

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invaluable tool to evaluate policy questions relative to land use, transportation and economic issues. Typical analyses could include:

- What is the effect of land supply on land use and location decisions?
- How does highway capacity increase affect travel behavior?
- What is the effect of rail investment on highway use?
- What is the effect of large commercial development or major public facilities (schools) at the periphery of urban growth boundaries

The statewide model either addresses issues directly or provides input that is used by other tools, such as the metropolitan models. Interurban travel is a direct output of the statewide model. Land use and economic components of the statewide model generate outputs that can be used for regional housing and economic development analyses, as well as providing input to other types of models. DEQ has been an active member of the OMSC, realizing that the statewide model will allow air quality modeling at the statewide level, something that will be valuable in looking at air quality conformity issues. Both the Oregon Housing and Economic Development Departments are interested in how the statewide model can be used for a variety of issues, including how the statewide planning goals can be evaluated during periodic review relative to their areas of concern.

Many of the policy issues in the state are a result of metropolitan activities. These policy questions are considerably broader than any metropolitan area or MPO boundary. The statewide model was developed specifically to address these issues and the next generation of the model will interact with local metropolitan models to allow even better analysis.

If the question "what would it take to have development occur in Eastern Oregon to offload congestion and growth within the Willamette Valley" were asked of the statewide model, several policy scenarios would emerge to help in the discussion on whether these policy choices are viable or desirable. This type of question cannot be addressed using localized metropolitan models, especially in the majority of the state where no MPO exists.

Strategic Plan

Because there are so many jurisdictions and agencies that are involved in modeling in Oregon, a five-year strategic plan was prepared in 1999 to establish the long-term goals of the modeling program and to identify specific tasks necessary to achieve these goals. The first strategic plan identified mostly work efforts for TPAU, but also identified areas of interface with other OMSC activities. The strategic plan was updated in 2000 and incorporates work programs from all OMSC members, based on in-depth interviews with all OMSC members. This strategic plan has become the basis for the UPWPs that are prepared annually by TPAU and the MPOs. The UPWPs include resource requirements and anticipated funding. The MPOs and TPAU are coordinating tasks and the staff and other resources necessary to complete these tasks.

Coordination

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A primary purpose of the five-year strategic plan was to identify major program areas that will be accomplished by all OMSC participants. TPAU and the MPOs have been meeting regularly for a year to coordinate their efforts in their respective UPWPs. According to FHWA, this is unique among MPOs and DOTs in the country, to look at long-range needs and opportunities and to share work programs and resources. The UPWP coordination effort is intended to define what can realistically be accomplished with the funding and staff that is available and to focus agency and jurisdiction efforts. Through these discussions, several areas of overlap have been eliminated and gaps have been filled. These coordination discussions have resulted in all MPOs and ODOT sharing staff resources and working together on a wide variety of projects.

It should be noted that different programs are funded through different sources. As an example, monies being used for development of the statewide model are State Planning & Research Funds (SPR). Local models are funded by Federal Planning (PL) monies and cannot use the same source of funding as used for the statewide model. The work programs developed by ODOT and the MPOs consider all the funding sources available, as well as the limitations to the use of this funding. Money is allocated accordingly. The OMSC is also active in obtaining outside funding for research and development work. Application by this consortium has been more effective than individual agency efforts.

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