

OREGON MODELING STEERING COMMITTEE LONG-RANGE STRATEGY SUBCOMMITTEE 2003 ANNUAL REPORT

This report summarizes the activities and accomplishments completed in calendar year 2003 to accomplish the mission of the Oregon Modeling Steering Committee (OMSC). It summarizes progress on the OMSC FY2003-3004 work program, which implements the five-year Strategic Implementation Plan completed in June 2002. These documents are available on the ODOT website at <http://www.odot.state.or.us/tddtpau/modeling.html>

MISSION STATEMENT

It is the mission of the Oregon Modeling Steering Committee to coordinate the land use-transportation modeling efforts of federal, state, regional and local agencies. It is the further mission to serve as a consensus forum and support group to improve the state-of-the-practice and promote state-of-the-art land use and transportation modeling in the state of Oregon. The Committee cooperates with the Transportation Modeling Users Group. Integration of land use, transportation and the economy is a major focus of the Committee.

MEMBERSHIP

The Oregon Modeling Steering Committee (OMSC) is composed of technical and policy representatives of the following organizations. For 2003, the following representatives participated on the OMSC:

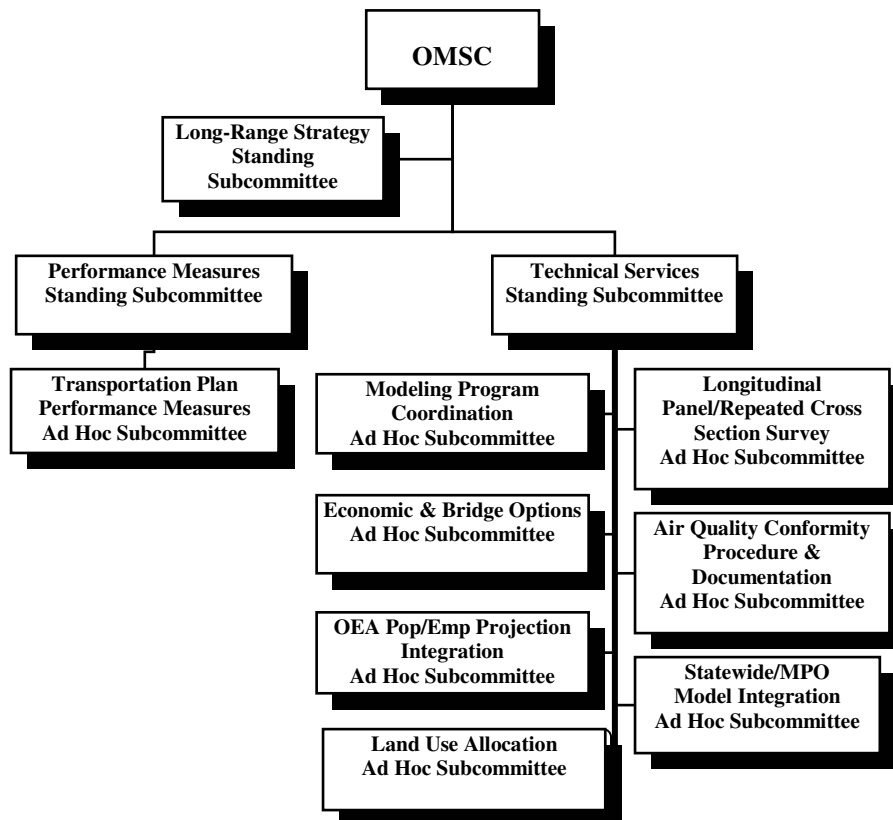
- OR Governor's Economic Revitalization Team (GERT) - Sam Johnston
- OR Department of Administrative Services-Office of Economic Analysis (OEA) - Dae Baek/Tom Potiowsky
- OR Department of Economic and Community Development (OECDD) – David Kavanaugh/Michael Burton
- OR Department of Environmental Quality (ODEQ) - Dave Nordberg/Annette Liebe
- OR Department of Housing and Community Development (OHCDD) - Richard Bjelland/David Foster
- OR Department of Land Use and Conservation (DLCD) - Bob Cortright/Anna Russo
- OR Department of Transportation (ODOT) - Bill Upton/Jerri Bohard
- Metro - Dick Walker/Keith Lawton
- Mid-Willamette Valley Council of Governments (MWVCOG) - Mike Jaffe/Richard Schmid
- Lane Council of Governments (LCOG) - Bud Reiff/Tom Schwetz
- Rogue Valley Council of Governments (RVCOG) - Craig Anderson/Dan Moore
- Southwest Washington Regional Transportation Council (RTC) - Shinwon Kim/Dean Lookingbill
- Port of Portland (POP) – Scott Drumm/Susie Lahsene
- Federal Highway Administration (FHWA) – Kim Hoovestol/Fred Patron

Freight modeling has become increasingly important in Oregon and the nation. Because of the partnerships among the Port of Portland, Metro and ODOT for freight modeling and the significant contribution to freight movement in Oregon, the Port of Portland was invited to join the OMSC in 2003.

Bend and Corvallis were designated MPOs in 2003. As their administrative structures are established in 2004, they will be invited to join the OMSC.

ORGANIZATION

The OMSC completes its work through standing and special topic subcommittees and through broad discussions at quarterly meetings of the full committee (see following graphic). The OMSC met four times in 2003 – March 19, June 18, September 17 and December 17.



OMSC STANDING COMMITTEE ACCOMPLISHMENTS

Following are the accomplishments of the three standing committees.

Long-range Strategy – Keith Lawton/Chair, Richard Bjelland/Vice-chair

Purpose: Responsible for annual work planning, strategic activities and OMSC membership.

Annual Report and Work Planning

- The OMSC prepared an annual report of 2002 accomplishments to document implementation of the annual work program.
- A work program was prepared for FY 2003-04 that identified major efforts for the OMSC and identified special topic subcommittees needed to address specific topics.
- A copy of both plans are available on the ODOT website at <http://www.odot.state.or.us/tddtpau/modeling.html>

Strategic Activities

- OMSC continued to support Portland State University (PSU) as it strives to become a federally recognized Oregon Transportation Center.
- The Director of the new Center met with the OMSC to discuss the PSU program and collaborative research proposals. Additional information on the PSU program can be seen at www.cts.pdx.edu.
- OMSC members and members of the modeling team participated in interviews for a new PSU faculty position with a modeling and GIS focus.
- A statement from the Peer Review Panel and a letter from OMSC were submitted to the ODOT Economic & Bridge Options Team supporting use of the Oregon1 model to analyze the potential economic costs and land use and transportation results of deteriorating Oregon bridges.

OMSC Image

- The US DOT Travel Model Improvement Program (TMIP) website is intended to provide access to new and successful transportation planning methods around the world. The Oregon Modeling Improvement Program was profiled on this website, recognizing not only the sophisticated Oregon model, but also the importance of the collaborative environment provided by the OMSC.
- TMIP also profiled the Oregon model in the TMIP winter newsletter.
- This information can be accessed at <http://tmip.fhwa.dot.gov/>.

Membership

- Background materials and information were provided to a new member in 2003 – Susie Lahsene/Scott Drumm, Port of Portland.
- Regular status reports were received on designation of Bend and Corvallis areas as new Oregon MPOs. Formal invitations to join the OMSC were delayed until administrative structures are established.

Technical Services - Bill Upton/ODOT, Dick Walker/Metro, Co-chairs

Purpose: Address technical model development, education, training and quality control.

Education and Training

- A two-day workshop was held to review progress on the Oregon modeling program, status of the statewide model, and to discuss future steps. Interviews were held with OMSC members prior to the meeting to identify key issues, concerns and opportunities.

- Metro provided a half-day overview of the TRANSIMS program that Metro is developing with the Los Alamos National Laboratory (LANL).
- Metro hosted a presentation for INRO to discuss its software and talk about implementation issues.
- Metro hosted a session with MPOs in June to talk about the conversion from Mobile 5 to Mobile 6 for air quality modeling. The intent is to inform all OMSC members on what is required for Mobile 6 air quality modeling and to ensure a consistent application across the state.
- The makers of VISUM/VISEM planning engineering software provided two days of training on use of the software for microsimulation. This was a hands-on training program for MPOs and ODOT staff.
- Metro hosted training on Enif, a user interface for EMME/2.
- DEQ provided regular updates on the new EPA emissions model Mobile 6.
- ODOT staff developed easy-to-use email lesson plans for ODOT and MPO modelers to learn R code.
- Regular meetings were held of the Oregon Modeling Users Group.

Technical Documentation

- JEM-in-R, air quality and small urban area models are documented within the source code.

Model Development and Analysis

- Coding models in R in ODOT and several MPOs was a primary effort in 2003. R is a language and environment for statistical computing and graphics, similar to emme-2. It improves performance by drastically cutting run time, standardizing the coding process and automating reporting. R is an ideal environment for transportation, land use and economic modeling.
- Metro completed its Joint Estimation Model (JEM) specifications and coded it in R. Substantial changes have been made to the JEM and Metro's version is referred to as Metro 2003.
- Through the partnership agreement, Metro worked with LCOG to apply the Metro 2003 model in the Eugene/Springfield area. Metro is working with LCOG to code the JEM in R. The intent is to have a version that is useful for all MPOs.
- ODOT developed models for the small cities using R. In the Salem-Keizer area, both the Metro code and the new R design will be applied.
- Metro and DEQ provided information to the EPA for its National Air Toxics Assessment (NATA) project. EPA is looking at 187 compounds that cause degradation of health, many of which come from motor vehicles. The NATA is to determine where these come from and how they should be addressed. This information will be used to develop regulations.
- Discussion was ongoing on how ODOT can use the statewide modeling tool in its update of the Oregon Transportation Plan in 2004. A consultant to update the plan was selected in late 2003 and an OMSC subcommittee will be established to oversee model application.
- ODOT and the MPOs met to agree on a framework for air quality emissions modeling. Metro and ODOT coded the concepts into application using R code.

- The Medford model now covers almost all of Jackson County with about 1300 zones.
- The statewide model was used to analyze economic, land use and transportation effects of different solutions to the problem of deteriorating bridges in Oregon. The results of this analysis were used to help define a strategy for bridge improvements and were the basis for a successful proposal to the Oregon legislature for a \$2.5 billion funding package.
- The ODOT Bridge Oversight Committee fully supported the use of the statewide to develop performance measures and to assist the consultant program management firm in defining bridge construction packages to implement the legislatively-approved OTIA III program.
- The Peer Review Panel met to review the most recent work on Oregon2. The Panel was surprised and pleased on how the Oregon1 model was applied to policy issues (ODOT bridge study) and that ODOT used the model results to support a successful legislative funding package.

Agency/Jurisdiction Coordination

- A final report on the pilot program agreement between ODOT and Metro was provided to ODOT and Metro management, recommending similar agreements among all MPOs and ODOT.
- Intergovernmental agreements were expanded to include all MPOs and ODOT, with ODOT acting as a clearinghouse.
- Discussions were held on the difficulty of finding accurate data for a variety of uses - buildable lands inventories, model development, industrial site assessments. The OMSC discussed the possibility of developing a standard. It would be useful if there was definition of the data that is needed for the models. These discussions are ongoing.
- Discussions were held on OSMC member modeling activities and emerging issues to share day-to-day projects that do not necessarily have statewide implications

Research

- The *Urban Design Variables* report, prepared by Bud Reiff and Kyung-Hwa Kim/Metro with Brian Gregor/ODOT, was finalized and posted on the ODOT website. The purpose of this research was to further the understanding of how aspects of urban design influence transportation choices. The report can be viewed at <http://www.odot.state.or.us/tddtpau/papers/other/urbanDesignReport.pdf>.
- ODOT Research provided funding for freight origin-destination methodology research. Cambridge Systematics completed work for the Port of Portland on Phase I of the Regional Freight Data Collection Project. This phase consisted of a series of interviews with more than 50 representatives from the public, private and non-profit sectors regarding the region's needs for freight data. Through the Metro MTIP process, \$500,000 was set aside for the region to undertake Phase 2 of the project, a full origin-destination study and truck traffic monitoring program. Based on recommendations from the first phase and from ODOT's Truck Trip Data Collection Method Study, the region will identify the priority data needs and develop a work scope for collecting the data.

- Scott Drumm reported on the National Cooperative Highway Research Program (NCHRP) project on *Cost-Effective Measures and Planning Procedures for Travel Time, Delay and Reliability*. Scott is a member of the technical panel. The outcome of the research project is a guidebook, including a framework and methods for data collection; measuring travel time, delay and reliability; and implementing these measures and results in analyses in transportation planning and decision-making. The study will include transit, freight and autos and will be complete about August 2005.

Outreach and Information

- Annette Liebe/DEQ testified before the U.S. Senate for TEA-21 reauthorization because of her experience with air quality conformity in Oregon. The National Association of Air Quality Associations feels that conformity is working better in Oregon than in other parts of the country and would like to know why. The OMSC and the excellent cooperation and coordination that occur within this organization and Oregon land use planning were given as reasons.
- The 4th Oregon Modeling Symposium was scheduled for August 2004, to be combined with a two-day conference on freight modeling sponsored by the newly formed Transportation Research Board (TRB) Freight Committee. The TLUMIP Peer Review Panel recommended that the bi-annual symposium should focus on implementation and not development and recommended that the symposium be postponed. Postponement will also provide time for the TRB Freight Committee to be organized and to sponsor the freight modeling component. The symposium will be rescheduled for the week of January 24, 2005.
- An OMSC subcommittee was established to oversee planning for the TRB Planning Methods Conference in April 2005. This is the first conference sponsored by OMSC.
- The OMIP brochure was updated to include the five OMIP tracks and the current OMSC membership.

Performance Measures - Bud Reiff/LCOG, Chair

Purpose: Address the environment and criteria under which models are applied, i.e., regulatory requirements and general application. Focal point for peer review.

Policy Applications

- The Transportation Plan Performance Measures research is being conducted under the oversight of this subcommittee. This research is intended to address the concern, especially among MPOs, that Transportation System Plans and other state planning documents have broad policy statements but no good mechanism for evaluating performance against these policies. Task 1 included a literature search and inventory of state and MPO plan policies. From this information, a list of about 1000 performance measures were included in a matrix of policies and performance measures showing which policies are not covered by adequate performance measures. Task 2 will result in a limited set of policies that need performance measures.

Technical Model Applications

- A peer review of the Coos Bay model was conducted by ODOT. This is the first model for small cities written in R and is the first time all the data was brought together and done in the same context as the JEM.

AD HOC SUBCOMMITTEE ACCOMPLISHMENTS

For issues that require additional personnel or expertise beyond the OMSC, or to address specific and complex issues, Ad Hoc subcommittees were formed to implement activities of OMSC Standing Subcommittees. Ad Hoc Subcommittees in 2003 included:

Modeling Program Coordination Subcommittee, Dick Walker/Metro and Mike Jaffe/MWVCOG, Chair

This subcommittee coordinates the modeling elements of the ODOT and MPO Unified Planning Work Programs. The subcommittee generally provides a forum for MPOs to discuss issues of common concern.

- A work plan was prepared to facilitate development of the JEM in R code.
- Discussion continued on the benefits and possibilities of funding staff for the OMSC, dedicated to joint programs. Unlike many other organizations, state monies for modeling have remained relatively stable over the past year. However, there are high standards and Best Practices that must be met on projects but often not enough money available to do the work to meet the standards. Continued funding cutbacks and limitations make it more difficult to work together on joint projects. It would be useful to have the MPC work through the UPWP work program to help set priorities and make model commitments. This will be a continuing conversation.
- The need to clearly establish and balance priorities to maximize limited staff and other resources is a continuing discussion for this subcommittee. It is recognized that demands on modeling are increasing more than staff and money to support the efforts are being provided. Data needs are greater, output required is complex, alternatives are more complicated, and committee processes raise more issues. The number of projects is increasing and the time required to do the project is greater. The MPC Subcommittee provides a forum to discuss priorities and identify opportunities to share staff and other resources.
- ODOT and the MPOs are evaluating the current use of EMME/2 against other modeling platforms.

Long. Panel/Repeated Cross-Sectional Survey - Keith Lawton/Metro, Chair

- An expert panel was convened on May 29-31, 2002 to discuss the pros and cons of a longitudinal panel survey. Instead of conducting behavioral surveys every five or so years, the longitudinal survey allows a look at changes in behavior and tracks the same household annually over time. After further input from peer panel members, the subcommittee made a recommendation in 2003 to develop a survey containing both a longitudinal panel survey and a repeated cross-section survey.
- A request for proposal (RFP) was prepared to hire a consultant to develop and conduct a survey. The project will be in three-steps: design the survey and estimate

costs; conduct the survey; establish a continuing survey process. The survey effort will occur in 2004 and will be contracted through ODOT.

ODOT Economic and Bridge Options Study - Bill Upton/ODOT, Chair

The Oregon bridge problem was a significant application of the statewide model and provided a high profile for the application and benefits of the Oregon modeling program. The ODOT modeling team used the statewide model to identify impacts on truckers, communities affected by detours and the traveling public and to provide information for the Oregon Transportation Commission and the Legislature to use for setting improvement priorities. The subcommittee reviewed and advised on assumptions used for modeling the economic and transportation impacts of different bridge improvement investment packages. The subcommittee also reviewed the reasonableness of model results. The modeling team was principle authors of the report used as the basis for a successful \$2.5 billion legislative funding package for transportation in 2003.

The subcommittee includes representatives of FHWA, OECDD, OHCS, ECONorthwest, ODOT Motor Carrier Division and ODOT modeling/planning/policy staff. In 2004, the Subcommittee will oversee use of the statewide model for implementation of the OTIA III program.

Statewide and MPO Model Integration – Bill Upton/ODOT, Chair

Several conversations were held to discuss how the statewide model and local models can be reconciled. This was a major topic of the modeling workshop held in early 2003. ODOT is doing some ‘tune-up’ to the Oregon I model for use with OTIA III and the OTP update. Some of the Oregon2 modules – CT/freight and LD/land use – are being evaluated to see if these modules can be used to get finer detail.

Air Quality Conformity Procedure & Model Documentation – Bill Upton/ODOT, Chair

The *Air Quality Conformity Procedure and Model Documentation* draft report prepared by DKS Associates was set aside until Mobile 6 transition is well underway.

Integration of OEA Pop/Emp Projections with Statewide Model – Bill Upton/ODOT, Chair

The OEA population and employment projections discussion was set aside during the legislative session. It will be reconsidered after OEA and ODOT have more discussion on how to use the statewide model to complement OEA forecasts.

Land Use Allocation – Bill Upton/ODOT, Chair

This Subcommittee was formed to provide technical oversight for preparing land use allocation tools for the Medford area and for the MWVCOG and LCOG models. The subcommittee will include: Bill Upton, chair; Mike Jaffe, Bud Reiff, Dave Kavanaugh, Richard Bjelland, Kim Hoovestol, Sonny Condor/Metro, Tara Weidner/PBQD and Dick Reynolds/ODOT. Several activities occurred in 2003:

- ODOT started a test of the interim Oregon model (Oregon 1.8) on a regional planning area in Medford. This test uses the statewide model and isolates the Medford area.

ODOT is collecting data and getting ready to do model runs. Initial testing will begin in January and it will take a year to go through testing and calibration.

- RVCOG is scheduled to complete its Regional Transportation Plan (RTP) update this year. The urban model will be updated to incorporate the JEM. At the same time, a regional problem-solving (RPS) project is being conducted in ODOT Region 3. The purpose of the RPS is to look at hypothetical scenarios of twice the current population with no timeframe. When twice the population is reached, it will define land use needs. The growth area is still being discussed but the RTP and RPS will cover the same general geographic area. ODOT wants to use Oregon2 for the RPS because it has land use components.