

**OREGON MODELING STEERING COMMITTEE**  
**ODOT Human Resource Center, 2775 19th Street SE, Salem, OR**  
**Wednesday, July 16, 2008**  
**1:00 p.m.-4:00 p.m.**

**MINUTES**

**ATTENDANCE**

**Members**

Bill Upton, Chair	OR Department of Transportation
Dave Nordberg, Vice-chair	OR Department of Environmental Quality
Jeff Stocum	OR Department of Environmental Quality
Bob Cortright	OR Dept of Land Conserv & Development
Matt Crall	OR Dept of Land Conserv & Development
Shinwon Kim	Regional Transportation Council
Dick Walker	Portland Metro
Dennis Yee	Portland Metro
Bud Reiff	Lane Council of Governments
Susan Payne	Lane Council of Governments
Matt Hermen	Rogue Valley Council of Governments
Tyler Deke	Bend Area Council of Governments
Scott Drumm	Port of Portland
John Gliebe	Oregon Transportation Research and Education Consortium/Portland State University

**Others**

John Kaufmann	OR Department of Energy
Michal Wert	MW Consulting

**INTRODUCTIONS** – Self-introductions

**SUBCOMMITTEE REPORTS**

**Long-Range Strategy Subcommittee – Bill Upton, Chair**

**Climate Change Ad Hoc Subcommittee** – Bill Upton reported that the Modeling Subcommittee of the Governor’s Global Warming Task Force Transportation and Land Use Subcommittee asked for assistance in modeling greenhouse gas emissions (GhG). ODOT is working with Angus Duncan, the Chair of the Task Force, to develop a sketch-planning tool to help the group prepare for the 2009 legislative session. Modeling of GhG, however, is a long-term issue and requests for modeling assistance and peer review will increase over time.

The Long-range Strategy Subcommittee discussed how to best support this effort and recommended to the full OMSC that a Climate Change Ad Hoc Subcommittee be formed to coordinate and provide technical oversight for model development and applications, and communicate results of analysis of greenhouse gas emissions (GhG) and climate change. The purpose, responsibilities and recommended membership of the Subcommittee are attached to these minutes.

Discussion:

- SACOG was included because Gordon Garry has done considerable analysis of GhG. SACOG represents CA and either WA Ecology or Washington DOT will represent WA State.
- Susan Payne suggested a member representing transit, who is familiar with the New Starts/Small Starts programs. There is no local representative of the Federal Transit Administration so local participation would be limited.
- Scott Drumm suggested adding a member of the OR Freight Advisory Committee.
- Bob Cortright suggested that DLCDC be on the Subcommittee. It is apparent in discussions of the Task Force Subcommittee that a tool is needed for local governments to evaluate land use alternatives as they update their transportation plans and this cannot be done using current traffic models. There many people at high levels discussing climate change but there are not many technical resources available for analysis and recommendations. LCDC will be asked to consider GhG in reviewing land use documents and it will be helpful if staff is versed in what the analysis tools can and cannot do.
- Bill noted that the LUSDR model is a land use/transportation model being used in the Medford area. Portland State University (PSU) will be working with ODOT to improve this model for broader application around the state. Metroscope offers a land use/transportation model for the Portland area. There will be more applications in smaller communities in the state as questions become better defined.
- Dick Walker stated that there are individual MPO efforts for climate change analysis as well as the work being done by the Task Force. For example, Metro is evaluating the new air quality software MOVES to determine how it can be used to analyze GhG emissions. The OMSC Subcommittee will be useful to help coordinate the different analysis tools for climate change so that they are reinforcing and consistent.
- Bill stated that the Task Force understands that current models cannot provide specific numbers for GhG analysis and that the Green Step model that Brian Gregor/ODOT is developing will provide direction and magnitude of change (+/-) for different policy parameters. This will not provide specific numbers but will give an indication of whether proposed transportation bills will help or hurt from a climate change perspective. The proposed OMSC Subcommittee will support Brian technically and provide credible peer review of his work for the Task Force. After the 2009 legislative session, membership of the OMSC Subcommittee may change as more precise tools are developed and applied. In the long-term, technical support will come from ODOT, the MPOs and OTREC and the OMSC Subcommittee will provide oversight to ensure consistency in development and applications.
- Dennis noted that land use is also an important climate change consideration. Information to populate Metroscope came from electric utilities and they have an

interest in climate change. The Bonneville Planning Administration or the NW Power Planning Council can provide information and may be interested in the work of the OMSC Subcommittee.

- Dick noted that the short-term work of the Subcommittee is clearly defined. After the short-term effort is complete, the Subcommittee will discuss a strategy to address other issues.

It was agreed to establish the OMSC Climate Change Ad Hoc Subcommittee with the proposed purpose, responsibilities and membership. Additional members suggested will be considered for short- or long-term membership.

**OMSC Membership** – Michal Wert reported that it has been 10 years since OMSC membership has been comprehensively reviewed. In that time, several members were added, including new MPOs, the Port of Portland and OTREC. The OMSC has changed over the last 10 years and it is timely to review membership, especially for members that are not active or who are not directly involved in modeling. Bill and Michal are contacting these members to determine the most effective way for them to participate in the OMSC.

Given the anticipated efforts on climate change, it was agreed the OR Department of Energy should be invited to join the OMSC. Bill talked with Bill Drumheller and he is interested in participating starting this fall.

#### **Professional Development Subcommittee – Ray Jackson, Chair**

There was no meeting of the OR Modeling Users Group this quarter because of the many conferences held in June. There was no committee report.

#### **Applications Subcommittee – Bud Reiff, Chair**

Bud stated that Metro and PSU are doing follow-up to the research conducted by Jennifer Dill/PSU on route choices by bicycle users. She equipped cyclists with GPS units so that their daily activities and routes were recorded and mapped. Cyclists could then access those routes on the internet to recall what was important to them in their route choices.

Metro and PSU are doing follow-up to see how Jennifer's research can be used to improve models for bicycle route and mode choice. The Metro Data Resources Center is using survey data of route choices and assigning attributes to those routes, including slope, functional class, and traffic levels. PSU will then do analysis of those attributed levels to create a smart path-building program for bike routes. Instead of using shortest time as the major factor, which often provides unrealistic bicycle paths, models will provide more realistic bike paths that can support a smarter bicycle mode choice. This concept has been discussed for some time, but Jennifer's research provides critical data.

There will be two products from this effort. Models will be updated to be smarter in measuring utility/disutility of bicycle paths. There is also a website called byCycle.org, which has software to help a user plot a path between two points.

John Gliebe stated that it is also intended to identify different classes of users, such as occasional rider, commuter, recreational, utilitarian, etc. so that route attributes can be accessed according to the type of user.

### **Modeling Program Coordination (MPC) – Dick Walker, Chair**

Dick stated that the MPC met in the morning and discussed two major topics. The Oregon Progress Board Performance Measure (PM) relative to Vehicle Miles Traveled (VMT) per capital in Oregon metropolitan areas for local non-commercial trips is intended to support the goal to *Move People and Goods Efficiently*. This PM has been measured since 2000.

Becky Knudson/ODOT is responsible for providing information on this PM. She expressed concerns on the legitimacy of this PM because VMT per capita is a good economic indicator but it is not a good travel performance indicator. The MPC talked about some pros and cons of VMT as a PM indicator and generally agreed that VMT does not accurately reflect progress toward the goal. The MPC discussed whether the OMSC should offer other measures that may have more meaning for what the Progress Board wishes to measure.

The MPC also discussed fuel price increases and how fuel price is addressed with current analysis tools. Given the high cost of fuel, and as models are modified, it is important to consider whether there should be levers in the models that address how many trips are actually made relative to changing fuel price and how this affects mode, routing, and destination choices.

The MPC noted that models do not directly use fuel price. They use operating cost (cost per mile) as a variable and this is a mixture of the price of fuel but also response of technology in terms of improving fuel efficiency, etc. There was discussion on what is the correct or a reasonable assumption when considering auto operating costs in the future. It is important to be strategic in modeling and bracket problems around varying auto operating costs to see how much of a difference this variable actually makes.

It was agreed that common talking points and answers to questions should be shared among MPC members. Bud Reiff will collect information and compile it for use by all MPOs and ODOT so there is consistency in responses to this issue from the modeling community. It was noted that there is not a standard practice to address fuel prices at this time. However, the Federal Highway Administration (FHWA) Transportation Modeling Improvement Program (TMIP) listserv has a lot of information and ideas on how to address fuel costs in modeling. Bud will monitor this information and synthesize or forward useful information to MPC members.

There was discussion about whether specific questions should be added to the upcoming statewide household survey to address fuel price. ODOT will contact the consultant team to explore this opportunity.

## **PROGRAM UPDATES**

### **OR Household Activity Survey (OHAS)**

Bill reported that the Work Order Contract for the pilot study should be in place to begin the pilot study by July 25. There should be enough information from the pilot to start the first survey in mid-September in Region 2. The final survey will be Metro in fall 2010 after the transit mall is completed.

Matt Crall asked if the cost of fuel will be documented at the time that surveys are conducted around the state. Dick noted that this will not be a question on the survey but will come from secondary sources. Susan noted that the ODOT Fuels Tax Group website maintains a list of fuel tax collected around the state.

### **Statewide Integrated Model**

Bill reported that calibration of the statewide model is almost complete. A few minor calibration tasks remain, but it is ready to move forward with some testing. Further work is required for data management. Storage space is becoming an issue that must be addressed - one model run generates over 30 GB of data. A few scenarios have been run to evaluate the responsiveness of the model. Preliminary results through 2012 were presented at the Symposium held June 19-20 in Portland. Those model runs are currently being completed out to 2020. The scenarios planned generally follow the runs used for the Willamette Valley Forum. There will be gross changes in the model to observe how it responds in the area of added capacity, higher vehicle operating costs, large transit investment and restricted urban growth boundaries.

This model provides a great amount of data. A focused effort is in graphic presentation of the model output to enable analysts to evaluate model performance quickly. There will be an automated process in place by the time the model goes into application mode. Ways to visualize results to customers are also being developed. The goal is to be ready for model applications by November 1. No specific application has yet been defined.

## **2008 CONFERENCES**

### **June 2-5 – USEPA 17<sup>th</sup> International Emissions Inventory Conference, Portland**

Dave stated that a meeting was organized with the developers of the new Motor Vehicle Emission Simulator (MOVES) program and OR modelers during the conference. Developers do not have much direct contact with those actually using the models so this was a good conversation for them. MOVES is supposed to be sensitive to GhG and it is expected to replace MOBILE6 next year. There will likely be a two-year or more transition to the new software. Matt Herman stated that the EPA requested suggestions and ideas on how best to train people on MOVES. Susan noted that MOVES is very different from MOBILE6 and it is being rolled out early to help users understand what will be required.

Presentations are available at <http://www.epa.gov/ttn/chief/conference/ei17/index.html>.

**June 19-20, 5th OR Symposium on Integrated Land Use-Transport Models, Portland**

Bill stated that the fifth Modeling Symposium was held at the PSU campus. The Symposium was attended by 86 people - 72 people from 19 states, and 14 people from other countries. This was one of the best Symposia yet and model applications were very interesting. Presentations are available at <http://www.tlumip.org/>.

**June 22-24, TRB Innovations in Transportation Modeling (ITM), Portland**

Bud stated that the TRB conference paralleled the Symposium talking about advanced integrated land use analysis tools. Both conferences talked about practical applications of the tools and how they are applied. Innovations emphasized ongoing research and tour-based models. They discussed the importance of having the supply side of models compatible with things like dynamic traffic assignments to better estimate delays and congestion and feed costs back onto the demand side of the model. There were duplicate tracks on model applications and how to communicate model results. The session on how to make the transition from old to new tools was very useful. The conference program is available at <http://www.trb-forecasting.org/innovationsConference2008.html>

**September 17-19, Transport Planning for Small to Medium Cities, Portland**

This national conference will provide practical information for transportation professionals in small (under 50,000) and medium sized (50,000 to 250,000) communities and will include several sessions on modeling. See registration and program information at <http://www.trbtoolsofthetrade.org/conference.html>.

**PEAK OIL: CURRENT STATUS AND PROSPECTS**

John Kaufmann, Senior Policy Analyst in the Conservation Division of the OR Department of Energy, gave a presentation on *Peak Oil: Causes and Prospects*. A copy of the PowerPoint presentation is available on the ODOT OMSC website at <http://www.oregon.gov/ODOT/TD/TPAU/OMSC.shtml>. John clarified that the OMSC responsibilities relative to peak oil is to use fuel prices in models to determine demand for transportation facilities. The presentation focused on the status of worldwide oil supply. A second presentation is available to discuss possible solutions.

Since 2002, crude oil prices have increased six-fold and gasoline/diesel and natural gas increased three-fold. Causes often blamed for these increases include:

- Weak US dollar – this is not a significant issue, and prices are increasing worldwide.
- Geopolitics – this includes issues such as the Iraq occupation, Nigeria unrest, issues in Iran, Venezuela, Russia and China
- Supply/demand imbalance
- Bad news – the more statements are made about how bad the situation is, the worse it becomes.
- Speculation – demand imbalance generates huge profits. Speculators profit from conditions but they do not create them.

For the past 50-60 years, there has been enough supply to meet demand. World crude oil discoveries peaked in 1965 and production has exceeded discoveries since 1983.

Generally, oil production follows discovery by 20-40 years. US discoveries peaked in 1930 and production peaked in 1971. New discoveries in the US are smaller and have not reversed the trend. Two-thirds of oil-producing nations have already peaked and there is no spare productive capacity.

There are three approaches to estimate remaining oil:

- Historical or statistical trend analysis – M. King Hubbert predicted the US production peak in the mid-1970s.
- Geological analysis field by field – this bottom-up analysis estimated worldwide peak by 2011.
- Economic – assumes production and technology respond to price and provide the most optimistic estimates. These predictions already are surpassed by real oil prices.

More is known about where to find oil than ever before. Seismic imaging, exploratory wells and computer mapping help define deposits. However, current finds are more difficult to extract. Currently, 85 million barrels of oil is used daily worldwide. Most projections expect oil production to peak between 0-10 years. Natural gas is also nearing peak production and it is uncertain whether liquid natural gas will fill the gap.

For modeling purposes, alternative scenarios should be developed. It is probably not realistic that prices will go back down to \$60 per barrel and it could go as high as \$400 a barrel in the future. Modeling average, high and in-between estimates gives decision-makers information to make investment decisions.

Discussion:

- National oil supplies own 75 percent of oil reserves. They have an interest in withholding some supply from the market. If they see an end to supply, they will withhold reserves for their own countries.
- If there are viable alternatives to using oil, will oil companies try to suppress them? No, there are too many producers with access to different technologies.
- Can a barrel of oil be turned 100 percent into jet fuel? No but there is some flexibility in the partitions and it can be cracked into different fractions.
- Do we have the infrastructure to support electric vehicles? Not really. Our infrastructure for electricity is point source, not mobile.
- Nuclear has potential but byproducts must be addressed.
- There is a small change that breeder reactors could provide needed energy.
- Oil sand and oil shale have low energy returns and low flow rates.
- Hydrogen is a net energy loser, bulky to store and transport, has a three percent evaporation loss per day, and does not use the existing infrastructure.
- Biofuels tie food prices to fuel price and provide a low energy return.
- Wind and solar have good potential for point but not mobile users.
- Major infrastructure investments are required in the future. Transportation options include electric trolley and light rail. As rail systems are redone, they should be electrified for inter- and intra-systems.

- Population growth curves and fossil fuel energy use track very closely. The use of fossil fuel resources, first coal and then oil and natural gas, has enabled the productivity that has encouraged population growth.
- We are starting to see responses to high fuel costs in the airline industry today. There will likely be fewer carriers, major consolidations, and maybe a national airline carrier in the future. New airplane engines are more efficient but planes will travel at a lower speed so air travel will be slower.

Management Information Services, Inc. (MISI) is a Washington, DC firm that can help develop forecasts. Other resources on this topic include [www.energybulletin.net](http://www.energybulletin.net), [www.theoil drum.com](http://www.theoil drum.com), [www.postcarbon.org](http://www.postcarbon.org), [www.aspo-usa.com](http://www.aspo-usa.com)

### **NEXT MEETING/AGENDA**

The next quarterly OMSC meeting will be on Wednesday, October 15, 2008, from 1:00-4:00 p.m. in Salem. Agenda items include:

- Subcommittee Reports
  - Applications - Reiff
  - Modeling Program Coordination – Walker
  - Professional Development - Jackson
- Program Updates
  - Oregon Household Activity Survey – Upton
  - Statewide Integrated Model – Upton

Topics of interest for future OMSC meetings:

- Metro’s project The Greatest Place. Results will not be available for some time but a presentation on the concept and work program would be useful.
- A summary and discussion of industry tools available for GhG emissions inventory and forecasting – ICLI (used by Metro-area cities), The Climate Registry, EPA’s GREET, others.

The meeting adjourned at 4:00 p.m.

**OREGON MODELING STEERING COMMITTEE  
CLIMATE CHANGE AD HOC SUBCOMMITTEE  
Purpose, Responsibilities and Membership**

*Purpose:*

- Coordinate and provide technical oversight for model development and applications, and communicate results of analysis of greenhouse gas emissions (GhG) and climate change.
- In the short-term, provide independent review of modeling tools, review results and presentations, and generally advise the Global Warming Commission and its Transportation & Land Use Committee on the development and use of these tools and analyses to achieve immediate objectives.
- In the long-term, coordinate technical efforts for model development, consistency of application among different models and areas of the state, input assumptions, and other actions necessary to integrate GhG into the Oregon modeling program.

*Responsibilities:*

- Provide technical support to develop performance measures, monitoring processes and forecasting procedures for climate change and GHG emissions
- Coordinate and provide oversight for technical and policy analysis as requested.
- Coordinate and integrate transportation, economic, land use and environmental models to address GHG and climate change issues.
- Prepare and give presentations to policy makers and others on analysis results.

*FY2008-09 Focus:*

- Establish and coordinate Subcommittee membership.
- Coordinate and provide oversight of technical work requested of the OMSC.

*Recommended Membership:*

- Bill Upton/ODOT, OMSC Chair
- Dave Nordberg/ODEQ, OMSC Vice-chair
- Oregon Modeling Steering Committee (OMSC)
- Oregon Department of Energy (ODOE)
- Transportation & Land Use Committee (T&LU) of the Oregon Global Warming Commission (OGWC)
- U.S. Environmental Protection Agency (EPA)
- U.S. Federal Highway Administration (FHWA)
- Washington Department of Ecology (WA Ecology)
- Sacramento Area Council of Governments (SACOG)
- Parsons Brinckerhoff

7/2/08