Long Range Plans: review

Visioning: where are we, where are we going, where do we want to be, how do we get there
  *Creation of several alternative possible futures for region
  *Travel demand models primary tool for evaluating alternatives

Travel Demand Models: review

- Four steps
  - Trip generation
  - Trip distribution
  - Mode choice
  - Route assignment

- Inputs
- Outputs
- Calibration
- Validation

Applications

- How bad things will get: e.g. Puget Sound
- Evaluation of overall plan: e.g. Sacramento, Dallas, Puget Sound
- Comparison of alternatives: plans or projects, “build vs. no-build,” e.g. SH130
- Estimate of capacity needs: e.g. Grand Prairie

Philosophical Variations

- Future is inevitable so plan now – “Where we’re going” dominates:
  - Land use trend taken as given
  - Plan designed to accommodate
  - Model evaluates how well
- We can control our destiny – “Where we want to be” dominates process:
  - Land use trend NOT given
  - Alternative land use scenarios
  - Alternative transportation policies
  - Model evaluates performance of alternatives

Newer applications

- Emissions modeling: next week
- Environmental justice analysis: e.g. MTC
Issues

Demands on models have changed:
- Pre-ISTEA: \( C = f(\text{volume, LOS}) \)
- Post-ISTEA:
  - Alternative kinds of projects, plus transportation control measures
  - Alternative kinds of criteria, e.g. environmental justice
  - Requirements for public involvement…

Limitations of Model – what information does model produce, of what quality?
- Sensitivity: variables in model to represent alternative policies, e.g. LUTRAQ
- Structure: links between steps, between inputs, between inputs and outputs
  * Lawsuits: Sierra Club vs. MTC 1989; Sierra Club vs. ILDOT 1997
  * Integrated Transportation-Land Use Modeling

Perspectives on Use – how does information get used in the planning process?
- Rational: model gives answer, e.g. textbooks
- Political: model used to justify, e.g. “Deception in Dallas”
- Interactive: model used to foster public dialogues,
  - Open process at MPO, e.g. ???
  - Models used by citizen groups, e.g. LUTRAQ
  - “Sketch models” used at workshops, e.g. SACOG’s PLACES model

\[ \text{Transparency/simplicity} \leftrightarrow \text{Complexity/accuracy} \]
\[ \text{Value judgment/} \leftrightarrow \text{Professional judgment/} \]
\[ \text{democratic input} \leftrightarrow \text{expertise} \]

MPO Assessment: “technical objectivity”, uncertainty, “black box”

Improvements?

TRB conference on “Innovations in Travel Demand Modeling”

<table>
<thead>
<tr>
<th>May 2006</th>
<th>June 2008</th>
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<tbody>
<tr>
<td>Tour-based modeling (vs. trip-based)</td>
<td>Road pricing response</td>
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<tr>
<td>Activity-based modeling (i.e. travel as derived demand)</td>
<td>Climate change modeling</td>
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<tr>
<td>Microsimulation, e.g. Transims</td>
<td>Communicating forecasts</td>
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“Good models are a necessary but not sufficient condition for good decision making.”

On Monday: Emissions modeling and air quality conformity requirements – see website
*Memo on choice of MPOs and assessment topic