Midterm review

Broad categories of goals

• Mobility
• Accessibility
• Economic development
• Quality of life
• Environmental and resource conservation
• Safety
• Operational efficiency
• System preservation

Definitions

• Goal: a general statement of a desired state or ideal function of a transportation system
• Objective: a concrete step toward achieving a goal, stated in measurable terms.
• Performance measure: a measurable term used to achieve the objective.
• Performance criteria: a specific definition attached to a performance measure (e.g., reduce travel time)

Examples


Goals

A general statement of a desired state or ideal function of a transportation system

• For example:
  – Mobility
  – Accessibility
  – Safety
  – Clean air

Objectives and Performance Measures

Objective: A concrete step toward achieving a goal, stated in measurable terms

Performance measure: A measurable term used to achieve the objective

• For example:
  Mobility
  – Reduce recurring congestion/improve travel time
    • Total delay, trip travel time, travel time index
  – Reduce traffic volume
    • VMT, share of transit use, share of non-motorized modes
Objectives and Performance Measures

Accessibility
- Provide residents access to regional centers
- Number of jobs within reasonable travel time for a region's population
- Travel times to regional centers
- Provide businesses access to the region’s resources
- Number of residents within reasonable travel times for major employment centers
- Average travel times to market centers

Objectives and Performance Measures

Safety
- Improve intersection safety
  - Number of crashes, number of fatalities, number of injuries, number of traffic violations
- Improve the safety of non-motorized users
  - Number of crashes involving non-motorized users
- Reduce motor-vehicle crashes
  - Number of motorist crashes,

Objectives and Performance Measures

Clean Air
- Reduce PM emissions
  - Amount of PM emitted
- Reduce greenhouse gas emissions
  - Amount of CO2 emitted

Homework example

For a proposed rail transit system to connect suburbs to downtown, list the possible goals, objectives, performance measures and performance criteria.

<table>
<thead>
<tr>
<th>Goals</th>
<th>Objectives</th>
<th>Performance measures</th>
<th>Performance criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>Imp. on-time performance</td>
<td>Trip travel time</td>
<td>Reduce trip TT</td>
</tr>
<tr>
<td>Mobility</td>
<td>Reduce congestion</td>
<td>Travel sp.</td>
<td>Imp. Travel sp.</td>
</tr>
<tr>
<td>Con. Justice</td>
<td>Imp. air quality</td>
<td>PM</td>
<td>Red. pm CO2</td>
</tr>
</tbody>
</table>
Transportation planning process

- 3C
- Public participation
- Role of legislation
- Shift from long-term planning to short-term planning
- Five core functions of MPO
- Three products of MPO
- Transportation system measures (TSMs)
- Transportation control measures (TCMs)
- Perspectives
- Induced demand
- NIMBY

Multi-criteria project evaluation

- Weighting
- Scaling
- Combination

Traffic calming

Calm the traffic by

- Reducing vehicle speeds
- Reducing vehicle volume

Potential effects:

- Improve the safety of all users
- Encourage the use of alternative modes including transit and non-motorized modes
- Improve the vitality of an area

The built environment

- Density
- Diversity
- Design

The built environment and travel behavior

- Issue of residential self-selection
- Why shall we be concerned about residential self-selection?

Example

An increase in air travel has made it necessary to expand the regional airport in a city. You are asked to evaluate the proposed expansion project. What types of performance measures would you select? In recommending the performance measures, please think about the perspectives of three groups. For each group, think about two performance measures.
Example

Over the last several decades, the transportation planning process has evolved a lot. Many of the changes (good changes) took place because of the events of the time. List three examples of such events and associated changes in the planning process.

Example

What is TSM?
What is TCM?
What is the difference between TSM and TCM?
The shift from TSM to TCM represents...

Can you provide an example of NIMBY? As a transport planner, identify 2 strategies to deal with NIMBY in the planning process?

CRA of 1990 is considered the most significant in the transport planning history. Identify 3 elements of the legislation that make it significant.