MEASURING STREET PERFORMANCE IN LA

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Overview

- The purpose of streets
- Evaluating of the proposed Mobility Index
- Evaluating transportation systems
  - Traditional evaluations and supply-side solutions
- An alternative: Complete Streets
- Recommendations
  - Implement Complete Streets framework to prioritize all modes and expand the role of the road network
The Proposed Mobility Index

- The new proposal includes three metrics to evaluate the performance of streets
- It is intended to indicate which streets are performing well, and which streets are performing poorly
- It will then guide proposed changes to the street network
Purpose of Streets

- Depends on the perspective (Taylor, 2012)
  - Engineer vs economist vs planners
- Different types of streets serve different purposes (Jones as Cited in Taylor, 2012)
  - Highways: increase the distance you can travel and keep cars off of local streets
  - Arterials: access, circulation for multiple modes, parking
  - Neighborhood streets: access to households, parking, social interaction
- Streets serve many different functions, our performance indicators should reflect this multi-purpose usage
Traditional Supply-Side Solutions

- The traditional engineering paradigm of managing increased demand is to increase the supply of the roadway
- Expensive
  - Requires capital intensive roadway expansions
- Unsustainable
  - Does not solve increased demand over time because of latent demand for travel
- Prioritizes the automobile
  - Limits the purpose of the roadway to facilitating travel
  - Omits the possibility of streets being used for other modes and social interaction

Source: LePlante & McCann, 2012
TSM and TDM

- Transportation Systems Management—supply side
  - When building more roads are not feasible
  - Signal synchronization, HOV lanes, capacity expansion

- Transportation Demand Management
  - Eventually, we must look at ways to redirect demand for travel—shift from single-occupancy vehicles
  - TDM solutions include pricing, carpooling programs
  - New TDM strategy—Complete Streets

Source: Ferguson, 200; Judycki, 1992
There are a variety of metrics to measure street performance. Metrics chosen for evaluation depends on the intended goal of the transportation project (Handy, 2008).

Proposed Mobility Index has three components:
1. Peak-hour traffic volume per lane
2. Average peak-hour vehicle speed
3. Total throughput of people across all modes

Each metric reveals an unstated perspective on the purpose of the street system.
Proposed Mobility Metric 1

- Peak-hour traffic volume per lane
  - How many cars travel along the road during the morning and afternoon commute period
  - Indicates a preference to facilitate the automobile
  - Concerns: safety, auto-oriented, solutions would be supply-side (capital intensive road expansion projects)
Proposed Mobility Metric 2

- Average peak hour speeds
  - How fast vehicles are traveling during the morning and afternoon commute period
  - Indicates a preference for the automobile
  - Concerns: safety—increased speeds do not serve other modes well (bicycles, pedestrians), supply-side expansion projects (lane-widening)
Proposed Mobility Metric 3

- Total throughput of people across all modes
  - How many people across all modes use the roadway
  - Prioritizes all modes, not only autos
  - Shifts focus from Single-Occupancy Vehicles to projects that move greater quantity of people (Public transit, High-Occupancy Vehicle Lanes)
  - No need for capital-intensive roadway expansions

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Space required to transport 60 people

- Car
- Bus
- Bicycle

(Poster in city of Muenster Planning Office, August 2001) Credit: PressOffice City of Muenster, Germany
What this Mobility Index Indicates

- The proposed mobility index:
  - Peak-hour volume and speed indicators:
    - Measure the efficiency of the automobile
    - A traditional supply-side approach—requires capacity expansions
  - Total throughput of people across mode indicator:
    - Measures the effectiveness and equity of the system
    - A multi-purpose approach
Expand the Mobility Index

- The proposed Mobility Index should be expanded to incorporate the following components of evaluation:
  - Efficiency
    - How well it meets its intended goals
  - Effectiveness
    - Costs in relation to benefits
  - Equity
    - How the benefits and costs are dispersed

Source: Wachs, 2004
Incorporate a Complete Streets Framework

- Complete Streets are designed to make safer streets for all people (Smart Growth America, 2012)

- Complete Streets means (LePlante & McCann, 2012)
  - Expanding the notion of the role of the roadway network beyond moving cars—moving people, facilitating interactions
  - Slows the speed of vehicles
  - Facilitates the movement of other modes (walking, biking, transit)
Recommendations

- Los Angeles should incorporate the Complete Streets framework into the Mobility Index and create a multimodal and multipurpose index
  - The included measures would reflect an expanded role of streets—moving people, incorporate other modes, facilitate interaction
  - Added benefit: safer streets

- Suggested elements to include in a MMLOS:
  - Traffic calming, presence of street trees, implement a sidewalk inventory, measures of access for all modes
Recommendations

- Identify the purpose of streets by creating a typology of road purposes (Brozen, 2012; LePlante & McCann, 2012)
  - Solutions should be context sensitive—not all streets can adopt the same measures
- Increase coordination between agencies
References


- Taylor, B. (2012). Some thoughts on defining and measuring transportation system and projects [UP 255 lecture].