Defining and Measuring Success: Integrating Livability into Transportation Decision Making

Jeffrey Tumlin @jeffreytumlin
Old Speed Paradigm → Roadway LOS

<table>
<thead>
<tr>
<th>LOS</th>
<th>Average delay in seconds per vehicle</th>
<th>Description of motorist perception</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&lt; 10</td>
<td>Free-flow traffic: “Good” LOS</td>
</tr>
<tr>
<td>B</td>
<td>10.1 – 20</td>
<td>Reasonable free-flow</td>
</tr>
<tr>
<td>C</td>
<td>20.1 – 35</td>
<td>Stable but unreasonable delay begins to occur</td>
</tr>
<tr>
<td>D</td>
<td>35.1 – 55</td>
<td>Borderline “bad” LOS</td>
</tr>
<tr>
<td>E</td>
<td>55.1 – 80</td>
<td>“Bad” LOS: long queues</td>
</tr>
<tr>
<td>F</td>
<td>&gt; 80</td>
<td>Unacceptable: very high delay, congestion</td>
</tr>
</tbody>
</table>

Source: Reid Ewing
ALICIA’S ROOM – EVENING

ALICIA, a Mexican American teen, out of room. She slams the door and throws which is covered with worn purple, gold.
Traffic Economics

Waste

LOS F!
Level of Service A
Level of Service F

Source: Neighborhoods.org
What’s important depends upon perspective

Traffic engineer:

Economist:
Problem 1: Last One In

A → D
D → E
Problem 2: Vehicle Delay, Not Person Delay

Not Moving
5
20
20
150-400 sq ft
150-400 sq ft
5,000 sq ft

Not Moving

Moving
20
50
75 sq ft
1,500 sq ft

Moving
Walk at 3 mph
Bike at 10 mph
Bus at 30 mph with 40-60 pax
Single Occupant Car at 30 mph
Single Occupant Car at 60 mph

Adapted from infographic by Matthew Blackett/Spacing.ca with data from Victoria Transport Policy Institute
Problem 3: Other Modes are the Problem
Problem 4: Mitigations - Shrink the Project?
Problem 5: Mitigations – Move the Project?
Problem 6: Mitigations - Widen the Road
Induced and Latent Demand

- Congestion
- More People Drive
- Widen Roadway
- Faster Driving
Overreliance on LOS is Creating the Problems
It was intended to solve
How do we use Performance Measures?

- Improving efficiency of system operations
- Managing a given road or corridor
- Prioritizing funding
- Measuring impact of new development
- Imposing development fees
- Reporting to Congestion Management Agency
- Reporting on achievement of various goals
What is transportation for?

- Transportation is not an end in itself
- It is merely a means by which we support individual and collective goals and objectives
Process

• Identify local values
• Identify long list of performance measures
• Refine into short list:
  – Rely on existing or readily available data
  – Shortest list that speaks to all values
• Different metrics for different tasks:
  – Development review
  – Corridor study
  – Intersection management
• Create tools and gather baseline data
• Establish targets and thresholds
Start with Transportation Principles

• Public Health
• Accessible Services
• Social Equity
• Safety
• Prosperity
• Greenhouse Gases
• Water Quality
• Air Quality
• Livability
• etc....
Vary targets by Context
Use targets and thresholds

- Main Street

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>CONTEXT ZONE</th>
<th>Minimum</th>
<th>Desirable</th>
<th>Preferred</th>
<th>Measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit</td>
<td>N’hood Commercial</td>
<td>≥-1</td>
<td>≥-0.5</td>
<td>≥+1</td>
<td>-0.8</td>
</tr>
<tr>
<td>Auto</td>
<td>N’hood Commercial</td>
<td>&lt;1.2</td>
<td>&lt;0.8</td>
<td>&gt;0.6</td>
<td>0.75</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>N’hood Commercial</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>B</td>
</tr>
</tbody>
</table>

- Result: OK to slightly degrade auto QOS to improve transit and pedestrian QOS. Signal prioritization OK, but not dedicated transit lane.
- Goal: Bring all measures into balance
For More Information

Jeffrey Tumlin

NELSON NYGAARD

Mobility Accessibility Sustainability

116 New Montgomery St, Ste 500
San Francisco, CA 94103
USA

Tel: +1 415-284-1544

jtumlin@nelsonnygaard.com
www.nelsonnygaard.com