Measuring what matters

Opportunities and challenges with performance measures
Agenda

• Brief background on performance management
• Transparency and accountability
• What works for transportation?
• Context and stakeholder engagement
• Data demand: the ideal vs. reality
• Data for benchmarking vs. evaluation
A Policy Context

• The FAST Act continued the performance based approach first established by MAP-21
  • Outcomes (e.g., physical activity) not outputs (miles of bike lanes)

• Efficient use of resources to achieve goals: what transportation are we getting for our dollars?
  • Cost effectiveness
  • Accountability

• Establish measures, set targets, create scenarios, evaluate plans (cost-benefit), evaluate and monitor
A Policy Context

- Transportation for America: 75% of MPOs using performance measures of some sort, but only 30% using it for project selection in plans

- Data is the biggest barrier, followed by staff and/or resources

- Health and equity are biggest areas of interest for better integration
What about program evaluation?
What is a “successful” program?

- Outputs (“what we did”) are not outcomes
- How much of a project budget should support evaluation?
- Not all program goals & worthwhile outcomes are easy to measure
- Mix of quantitative & qualitative
- If you don’t measure/ask, you can’t tell the story
Is this success?
What about this?

Table 5: Estimated Vehicle Miles and Carbon Dioxide Emissions Reduced

<table>
<thead>
<tr>
<th></th>
<th>ESTIMATED VEHICLE MILES TRAVELED (Per Person)</th>
<th>ESTIMATED VEHICLE MILES TRAVELED (Among All 4,446 Households)</th>
<th>ESTIMATED VEHICLE MILES REDUCED IN TARGET AREA</th>
<th>ESTIMATED CARBON DIOXIDE EMISSIONS REDUCED (In Pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Program</td>
<td>Post-Program</td>
<td>Pre-Program</td>
<td>Post-Program</td>
</tr>
<tr>
<td>Daily VMT</td>
<td>12.03</td>
<td>11.21</td>
<td>53,403</td>
<td>49,753</td>
</tr>
<tr>
<td>Annual VMT</td>
<td>4,390</td>
<td>4,090</td>
<td>19,491,933</td>
<td>18,159,785</td>
</tr>
</tbody>
</table>

*Carbon dioxide emission reductions are estimated based on VMT reduction calculations, as well as emission rates from the 2008 EPA Report 420-F-08-024, “Emission Facts: Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks.”*
The “missing story”
Logic Models

1. Resources/Inputs
2. Activities
3. Outputs
4. Outcomes
5. Impact(s)

Your Planned Work

Your Intended Results
Logic Models – SmartTrips Program

Resources
- FTE(s)
- Consultant (if desired)
- Grant funding
- Program materials
- Community partners

Activities
- Do community outreach
- Create customized packets
- Ongoing communication
- Organize events
- Engage community partners

Outputs
- Communications actions: newsletters, social media posts, emails, posters, partner communications
- Customized packets distributed to participants
- Program participants
- Events and event attendance

Short-term Outcome(s)
- Increase knowledge & awareness of travel options

Intermediate Outcome(s)
- Fewer drive-alone trips
- More walking, biking, transit, and shared trips

Long-term Outcome(s)
- Permanently decrease drive-alone mode share
- Permanently increase active and shared mode share

Impact(s)
- Improve health and safety
- Support local economy
- Reduce noxious and carbon emissions
Stages of Change

- Pre-Contemplation
- Contemplation
- Preparation
- Action
- Maintenance
Stages of Change

- **Pre-Contemplation**: No intention to reduce driving or try new options
- **Contemplation**: Considering reducing car use/trying options
- **Preparation**: Intention to make a change
- **Action**: Trying new options; not yet a habit
- **Maintenance**: Habitual & confident use of a new mode
Stages of Change

1. **Pre-Contemplation**
   - No intention to reduce driving or try new options
   - Increase awareness of need to change

2. **Contemplation**
   - Considering reducing car use/trying options
   - Build self-efficacy, build motivation for mode shift

3. **Preparation**
   - Intention to make a change
   - Plan for and follow through on a new action

4. **Action**
   - Trying new options; not yet a habit
   - Build habit and confidence

5. **Maintenance**
   - Habitual & confident use of a new mode
   - Prevent relapse
Passive Tracking

Edit profile

- Edit my email and notification preferences

Connect with Strava

Connected - Disconnect from Moves

Connect with MapMyRide

Connect with Endomondo
New Metrics

**Travel Behavior**
- Shared-use mobility & TNC
- Shedding vehicles
- Bicycle access

**Community Metrics**
- Increased local tripmaking
- Visiting local destinations

**Community Connectedness**
- Connecting with neighbors
- Increased sense of community
- Increased sense of safety

**Health Outcomes**
- Increased rates of physical activity
Health Impact Analysis – Milwaukie, Oregon Individualized Marketing Program

63% increase in number of walking miles per person/week

$191,800 saved in avoided medical treatment

<table>
<thead>
<tr>
<th>Condition</th>
<th>VALUE/SAVINGS ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Disease*</td>
<td>$68,126</td>
</tr>
<tr>
<td>Diabetes</td>
<td>$68,365</td>
</tr>
<tr>
<td>Stroke</td>
<td>$14,955</td>
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<tr>
<td>Dementia</td>
<td>$26,120</td>
</tr>
<tr>
<td>Depression</td>
<td>$9,851</td>
</tr>
<tr>
<td>Colon cancer</td>
<td>$2,261</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>$2,161</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$191,800</td>
</tr>
</tbody>
</table>
# New Metrics – VMR Calculations

## Ownership Costs

<table>
<thead>
<tr>
<th>Auto type</th>
<th>Cost per VMT/savings per VMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedan</td>
<td>$0.57</td>
</tr>
<tr>
<td>SUV</td>
<td>$0.68</td>
</tr>
</tbody>
</table>

Source: “Your Driving Costs.” (2016). AAA

## Costs of Crashes and Congestion

<table>
<thead>
<tr>
<th>Study area size</th>
<th>Cost of crashes and congestion per VMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Large city (over 3 million)</td>
<td>$0.25</td>
</tr>
<tr>
<td>Large City (1-3 million)</td>
<td>$0.28</td>
</tr>
<tr>
<td>Medium City (500,000-1 million)</td>
<td>$0.32</td>
</tr>
<tr>
<td>Small City (500,000)</td>
<td>$0.41</td>
</tr>
<tr>
<td>All cities</td>
<td>$0.28</td>
</tr>
</tbody>
</table>

A/B Testing

Randomization → Treatment → Results
Thank you!

Jessica Roberts
jessicaroberts@altaplanning.com

TransitCenter report at:
http://transitcenter.org/transit-tools/

MEASURES FOR SUCCESS:
New Tools for Shaping Transportation Behavior
July, 2017