Travel Behavior Inventory Program
Regional Model Background

• The Metropolitan Council, like all large MPOs, maintains a regional transportation forecasting model.
• The model is used to forecast travel for all modes and usage of highway and transit facilities.
• The model is regularly updated to reflect changes in
  – Regional transportation networks (roadways, transit routes)
  – Observed demographics
  – Observed travel patterns and behaviors
  – Best-practice methods
  – Important policy issues
Users of the Regional Model

<table>
<thead>
<tr>
<th>Metropolitan Council / Metro Transit</th>
<th>MnDOT</th>
<th>Counties and Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit ridership</td>
<td>System studies</td>
<td>Highway project forecasts</td>
</tr>
<tr>
<td>Air quality conformity</td>
<td>Corridor studies</td>
<td>Development impact forecasts</td>
</tr>
<tr>
<td>TPP / System Studies</td>
<td>Highway project forecasts</td>
<td>Transit ridership forecasts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Base to develop local models</td>
</tr>
</tbody>
</table>
The model is kept current and valid through the **Travel Behavior Inventory**

- How much do people travel?
- How far?
- By what modes?
- For what purpose?
- Where are people travelling to/from?
- How does this very by geographic and demographic characteristics?
New TBI Program

• Conducted every 10 years: ~1950-2010
• 2015 TBI Program Evaluation
• 2017 began transition to new data collection and update structure:
  – Household survey every 2 years (with larger starter survey)
  – Transit on-board survey every 5 years
  – Model updates, other data collection performed regularly
  – New data available more often
• Use of New technology
  – Household survey based on smartphone GPS
  – Use of 3rd party commercial data where possible
New Program Structure Benefits

- Adaptability to technological, social, economic change
- New data available regularly
- Growing ability to track changes
- Continuous improvement in forecasting
- Increasing confidence in forecasts
- More competitive projects
- Increased ability to make data-driven decisions
- More consistent expenditures
## Overview of TBI Data Collection

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Frequency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household Interview Survey</td>
<td>Every 2 years</td>
<td>Record travel of each member of a sample of households</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Smartphone GPS</td>
</tr>
<tr>
<td>Transit On-Board Survey</td>
<td>Every 5 years</td>
<td>Passengers on all fixed-route transit lines</td>
</tr>
<tr>
<td>Special Generator Surveys</td>
<td>One every 2-3 years</td>
<td>Examples include University of MN, MSP airport, major shopping centers, visitors</td>
</tr>
<tr>
<td>Third Party Data Purchase</td>
<td>Every 5 years</td>
<td>Examples include external traveler origin-destination</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data shared with other stakeholders</td>
</tr>
</tbody>
</table>
Funding

• $2.5M average cost every two years
• Funding split evenly (~$850,000) between major users
  – State: MnDOT (federal and local sources)
  – Region: Metropolitan Council (federal and local)
  – Local: Counties/Cities (TAB-allocated federal represents local contribution)
# Project Status Cost Estimate

<table>
<thead>
<tr>
<th>Project</th>
<th>Status</th>
<th>Cost Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018/19 Household travel survey</td>
<td>Under contract</td>
<td>$2,021,000</td>
</tr>
<tr>
<td>2020/21 Household travel survey</td>
<td>Under contract</td>
<td>$852,000</td>
</tr>
<tr>
<td>2022/23 Household travel survey</td>
<td>Under contract</td>
<td>$852,000</td>
</tr>
<tr>
<td>2020 Model update</td>
<td>Planning</td>
<td>$275,000</td>
</tr>
<tr>
<td>2019/20 3rd party data purchase</td>
<td>Planning</td>
<td>$215,000</td>
</tr>
<tr>
<td>2021 Transit on-board survey</td>
<td>Planning</td>
<td>$1,612,000</td>
</tr>
<tr>
<td>2022 Model overhaul</td>
<td>Planning</td>
<td>$1,150,000</td>
</tr>
<tr>
<td>2020, 2022 special generator studies</td>
<td>Planning</td>
<td>$280,000</td>
</tr>
<tr>
<td>2024-2025 Household travel survey</td>
<td>Planning</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>2024 Third party data purchase</td>
<td>Planning</td>
<td>$250,000</td>
</tr>
<tr>
<td>2025 Special generator surveys</td>
<td>Planning</td>
<td>$200,000</td>
</tr>
<tr>
<td>2025 Model update</td>
<td>Planning</td>
<td>$300,000</td>
</tr>
</tbody>
</table>
Household Survey Schedule

- Under contract: January 2018
- Pilot test: May 2018
- Data Collection: October 1, 2018 – September 30, 2019
- Data Collection: October 1, 2020 – September 30, 2021
- …
Household Travel Survey- Data Collected

**Household**
- People
- Workers
- Students
- Vehicles
- Income
- Residence Information

**Vehicle**
- Characteristics
- Fuel
- Parking/Toll

**Person**
- Demographic Characteristics
- Work data
- School data
- Typical travel behavior
- Interest in autonomous vehicles

**Employment**

**Trip**
- Mode
- Purpose
- Time / Date
- Travel party
- Payment
## Household Travel Survey - Status

<table>
<thead>
<tr>
<th></th>
<th>Estimated 2018/2019 Data Collection</th>
<th>As of 6/20/2019</th>
<th>Pct of Estimate to Date</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households</td>
<td>7,500</td>
<td>5,692</td>
<td>76%</td>
<td></td>
</tr>
<tr>
<td>Persons</td>
<td>15,400</td>
<td>11,871</td>
<td>77%</td>
<td>Persons per HH: 2.1</td>
</tr>
<tr>
<td>Person Travel Days</td>
<td>107,800</td>
<td>47,652</td>
<td>44%</td>
<td>Days per Person: 4.0</td>
</tr>
<tr>
<td>Trips</td>
<td>485,100</td>
<td>255,847</td>
<td>53%</td>
<td>Trips per Day: 5.4</td>
</tr>
<tr>
<td>Locations</td>
<td>4,851,000</td>
<td>3,038,516</td>
<td>63%</td>
<td>Locations per Trip: 11.9</td>
</tr>
</tbody>
</table>

As of 6/20/2019
TBI Data Collection

Mailed Invitation Materials

- Address-based sample
- Invitation Letter
- Two reminder postcards

ONLINE OR PHONE (rSURVEY)

- 1 Day of trip data collected
- Approximately 25% of HHs will participate using this method

SMARTPHONE (rMOVE)

- 7 Days of trip data collected
- Approximately 75% of HHs will participate using this method
Keys to Ensure Representation

- **Oversampling** is critical to obtaining sufficient participation from hard-to-reach groups
- **Outreach** to communicate the importance of the survey to communities to encourage participation
- **Engagement/Reminders** once a hard-to-reach household engages with the study to ensure they can easily complete the survey
Complete a survey about how you travel and receive a gift card as thanks for your time.

Visit MSPtravelstudy.org for more information about the study.

Your participation helps transportation planning in your community!
Outreach

General Population Outreach
- Social media
- Council website
- Press release / earned media
- Newsletters / emails

Targeted Outreach
- Targeted social media
- Targeted paid media
- Partner with community organizations
- Community ambassadors
- Door to door outreach

Translated materials
- Spanish
- Hmong
- Somali
- Oromo
- Karen