Travel Behavior Inventory Program

2016 Transit On Board Survey

2017-07-10

Metropolitan Council Transportation Committee
Purpose

• Understand transit travel markets
• Improve regional forecast model
• Investigate effect of major new transit service
  – “After” survey for Green Line
  – “Before” survey for Green Line Extension, Blue Line Extension
• Respond to FTA guidance
Project Background

• Conducted approximately every 5 years on entire fixed-route bus/rail system

• Funding: $800,000 from TAB/Regional Solicitation
  $550,000 from Council local sources

• Agency Partners: Metropolitan Council, MnDOT, University of Minnesota, MVTA, SouthWest Transit, City of Plymouth, City of Maple Grove, FTA
Phase 1: On to Off Count

• Stop to stop count
• Boarding-to-alighting flows
• 25 High ridership bus, rail routes
• Allows more refined sampling and expansion of Phase 2
• Spring-summer 2016
• Collected 58,337 records
Phase 2: Origin-Destination Survey

- Detailed questionnaire administered by trained interviewer
- 5+ minutes to complete
- Summer-fall 2016
- Collected 31,521 surveys
- Very high quality data

- Data:
  - Home
  - Boarding/alighting
  - Origin/destination
  - Access/egress
  - Trip
  - Fare
  - Vehicles
  - Demographics
## O/D Records Collected

<table>
<thead>
<tr>
<th>Provider</th>
<th>Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maple Grove</td>
<td>382</td>
</tr>
<tr>
<td>Metropolitan Council</td>
<td>1,025</td>
</tr>
<tr>
<td>Metro Transit</td>
<td>27,393</td>
</tr>
<tr>
<td>MVTA</td>
<td>1,110</td>
</tr>
<tr>
<td>Plymouth</td>
<td>232</td>
</tr>
<tr>
<td>SouthWest</td>
<td>445</td>
</tr>
<tr>
<td>U of M</td>
<td>934</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Route Type</th>
<th>Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRT</td>
<td>321</td>
</tr>
<tr>
<td>Commuter Rail</td>
<td>350</td>
</tr>
<tr>
<td>Express</td>
<td>4,811</td>
</tr>
<tr>
<td>LRT</td>
<td>10,396</td>
</tr>
<tr>
<td>Suburban Local</td>
<td>1,636</td>
</tr>
<tr>
<td>Urban Local</td>
<td>14,007</td>
</tr>
</tbody>
</table>
Selected Demographics
Demographic Profile - Age

Percent of Trips

- 85 and Over: 0%
- 75-84: 0.5%
- 65-74: 3.4%
- 55-64: 10.4%
- 45-54: 14.1%
- 35-44: 16.1%
- 25-34: 25.5%
- 18-24: 24.8%
- 16-17: 3.7%
- 13-15: 1.4%
- Under 12: 0.1%
Demographic Profile: Race

Note: Multiple responses possible for race, will sum to more than 100%
Demographic Profile - Gender

Gender

48.1%  
Female

51.9%  
Male

Percent of Trips
Demographic Profile - Income

- $200,000 or more: 1.9%
- $150,000 - $199,999: 3.3%
- $100,000 - $149,999: 10.8%
- $60,000 - $99,999: 17.4%
- $35,000 - $59,999: 20.1%
- $25,000 - $34,999: 13.9%
- $15,000 - $24,999: 14.4%
- Less than $15,000: 18.1%
Sample Route Comparisons

<table>
<thead>
<tr>
<th>INCOME</th>
<th>61 E Hennepin Av - Larpenteur Av - Arcade St</th>
<th>GREEN METRO Green Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>$200,000 or more</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>$150,000 - $199,999</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>$100,000 - $149,999</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>$60,000 - $99,999</td>
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<td>0</td>
</tr>
<tr>
<td>$15,000 - $24,999</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Less than $15,000</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Trips
Sample Route Comparisons
Sample Travel Data
Trip Purpose

- Work: 53.7%
- Sport/Special Event: 0.6%
- Social/Recreational/Community: 15.6%
- Shopping: 7.6%
- School (student): 17.9%
- Other: 0.1%
- Medical: 3.4%
- Airport Passenger: 1%
Trip Purpose - System Wide

<table>
<thead>
<tr>
<th>Income Level</th>
<th>1- Work</th>
<th>2- School (student)</th>
<th>3- Airport (passenger)</th>
<th>4- Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>$200,000 or more</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$150,000 - $199,999</td>
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<tr>
<td>$15,000 - $24,999</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $15,000</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Trip Purpose- Green Line

- **1- Work**
  - $200,000 or more
  - $150,000 - $199,999
  - $100,000 - $149,999
  - $60,000 - $99,999
  - $35,000 - $59,999
  - $25,000 - $34,999
  - $15,000 - $24,999
  - Less than $15,000

- **2- School (student)**

- **4- Other**

**Trips**
Access Modes- System Wide

- Walk (or wheelchair, walker)
- Drove
- Dropped off
- Bike
- Taxi/Car Share/TNC
- Other

Trips

[Bar chart showing the distribution of access modes with 'Walk (or wheelchair, walker)' having the highest trips.]
# Access Mode - Selected Routes

<table>
<thead>
<tr>
<th>Access Mode</th>
<th>A Line</th>
<th>Blue Line</th>
<th>Green Line</th>
<th>Northstar</th>
<th>Red Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk (or wheelchair, walker)</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Drove</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Dropped off</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Bike</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Taxi/Car Share/TNC</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Other</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>
Impact of Green Line
Impact of Green Line

How did you usually make this trip prior to the Green Line opening?

- Different Route: More than 15,000 trips
- Driver/Passenger: Around 5,000 trips
- New Origin/Destination: Around 7,000 trips
- New Resident: Around 5,000 trips
- Walk/Bike: Around 3,000 trips
Impact of Green Line

<table>
<thead>
<tr>
<th>Did the Green Line impact your decision to take this trip?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>43%</td>
</tr>
<tr>
<td>No</td>
<td>57%</td>
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</tbody>
</table>
Sample Travel Market Visualizations
Green Line Home Locations
Green Line Destinations
Route 4 Home Locations and Destinations
Project Status

• Consultant team finishing final data cleaning/expansion
• Metro Transit Strategic Initiatives working on interactive data analysis/visualization app
• Project report August/September 2017
• Next survey 2021
Questions?
Data/Analysis Requests?