Travel Behavior Inventory Program

2016 Transit On Board Survey

2017-11-02

CTS Transportation Research Conference
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 partners: Transportation Advisory Board, Metropolitan Council

• 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

![Bar Chart showing age distribution with percentages for different age groups: Under 12 (0.1%), 13-15 (1.4%), 16-17 (3.7%), 18-24 (24.8%), 25-34 (25.5%), 35-44 (16.1%), 45-54 (14.1%), 55-64 (10.4%), 65-74 (3.4%), 75-84 (0.5%), 85 and Over (0%).]
Demographic Profile: Race

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

Gender

48.1% 51.9%

Female Male

Percent of Trips
Demographic Profile - Income

<table>
<thead>
<tr>
<th>Income</th>
<th>Percent of Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $15,000</td>
<td>18.1%</td>
</tr>
<tr>
<td>$15,000 - $24,999</td>
<td>14.4%</td>
</tr>
<tr>
<td>$25,000 - $34,999</td>
<td>13.9%</td>
</tr>
<tr>
<td>$35,000 - $59,999</td>
<td>20.1%</td>
</tr>
<tr>
<td>$60,000 - $99,999</td>
<td>17.4%</td>
</tr>
<tr>
<td>$100,000 - $149,999</td>
<td>10.8%</td>
</tr>
<tr>
<td>$150,000 - $199,999</td>
<td>3.3%</td>
</tr>
<tr>
<td>$200,000 or more</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

07/10/2017
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></td>
<td></td>
</tr>
<tr>
<td>$150,000 - $199,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$100,000 - $149,999</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>$25,000 - $34,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$15,000 - $24,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $15,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Trips

![Graph showing route comparisons](image-url)
Sample Route Comparisons

![Bar Chart Comparing Routes](chart.png)

- **64 Payne - Maryland - White Bear Av - Maplewood**
- **80 Maplewood - White Bear Av - Sunray**

Income Ranges:
- $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

Trips:
- 0
- 500
- 1000
- 1500
- 2000
- 2500

Chart shows the number of trips for each income range for the two routes.
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

- **1- Work**
- **2- School (student)**
- **3- Airport (passenger)**
- **4- Other**

**INCOME**
- $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

**Trips**

- 0 to 5000
- 5000 to 10000
- 10000 to 15000
- 15000 to 20000

- 0 to 200
- 200 to 400
- 400 to 600
- 600 to 800

- 0 to 5000
- 5000 to 10000
- 10000 to 15000
- 15000 to 20000
Trip Purpose- Green Line

[Bar charts showing trips for different income levels for purposes of work, school, and other.]

INCOME
$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
Access Modes - System Wide

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

Trips

Access Mode

Metropolitan Council
Access Mode - Selected Routes

- Access Mode: Walk (or wheelchair, walker), Drove, Dropped off, Bike, Taxi/Car Share/TNC, Other
- Trips: A Line, Blue Line, Green Line, Northstar, Red Line

[Diagram showing access mode for different routes]
Impact of Green Line
Impact of Green Line

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

- Different Route: 15,000
- Driver/Passenger: 5,000
- New Origin/Destination: 6,000
- New Resident: 5,000
- Walk/Bike: 3,000

Trips

Different Route | Driver/Passenger | New Origin/Destination | New Resident | Walk/Bike
# 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>
</tr>
</tbody>
</table>
Sample Travel Market Visualizations
Will this link work?

• Metro Transit On Board Survey App
Blue Line Home Locations
Green Line Home Locations
Green Line Destinations
Route 4 Home Locations and Destinations
Project Status

• Consultant team finishing final report
• Data available by request
• Project report November 2017

• Next survey 2021