Assessing the Impacts of Student Transportation Using City Buses and Trains

Project Update: Tue, August 11, 2015
Key Research Questions About the Program

What are its educational impacts?
- Impacts at school
- Impacts away from school

What are its societal impacts?
- Perceptions towards transit
- Benefits for the family
- Impacts on traffic congestion
- Impacts on the environment

What are its economic impacts?
- Financial impact on Metro Transit
- Financial impact on Minneapolis Public Schools
Focus of this Presentation

Does the program:
- Provide students with scheduling flexibility and independence?
- Provide greater access to the wide variety of learning opportunities?
- Encourage student attendance?
- Improve academic achievement?
Understanding Transit Use, Perspectives and Impacts

Step 1
• Student Focus Groups

Step 2
• Student and Parent Survey

Step 3
• Incorporating data
  • Linking Student and Parent Surveys
  • MPS: Student Data
  • Metro Transit: Ridership

Step 4
• Analyzing data
48 participants, 5 meetings audio-recorded

**Benefits**
- Scheduling flexibility and independence
- Ability to visit more places
- Saves money for the family
- Better attendance and after-school participation

**Issues**
- Safety a big concern, for girls in particular
- 2 mile walk zone pass qualification
- Pass hours 5am-10pm
Step 2: In-Class Student Survey

Survey Design & Implementation

- Questions: Pass use behavior, Perceptions and changes in perceptions, Benefits and concerns, demographic background
- Online survey conducted in class at 8 MPS high schools between May 12 and June 5
- 30% (2,453 of 8,171) participation rate
- Final sample (73% pass users, of which 88% use the pass to get to/from school)
Step 2: Student Survey

Representativeness of Sample

**Enrolled students vs. Survey Participants**

<table>
<thead>
<tr>
<th>School</th>
<th>Survey Participants</th>
<th>Total Enrolled Fall 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOUTH HIGH</td>
<td>9%</td>
<td>21%</td>
</tr>
<tr>
<td>SOUTHWEST HIGH</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>WASHBURN HIGH</td>
<td>13%</td>
<td>16%</td>
</tr>
<tr>
<td>HENRY HIGH</td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td>EDISON HIGH</td>
<td>4%</td>
<td>8%</td>
</tr>
<tr>
<td>ROOSEVELT HIGH</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>NORTH</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>WELLSTONE</td>
<td>4%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Race/Ethnicity**

<table>
<thead>
<tr>
<th>Category</th>
<th>Survey Participants</th>
<th>MPS all students (Oct 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>32%</td>
<td>37%</td>
</tr>
<tr>
<td>White</td>
<td>34%</td>
<td>33%</td>
</tr>
<tr>
<td>Hispanic American</td>
<td>19%</td>
<td>18%</td>
</tr>
<tr>
<td>Asian American</td>
<td>14%</td>
<td>10%</td>
</tr>
<tr>
<td>Native American</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Step 2: Take Home Parent Survey

Parent survey designed to capture:
- Parents’ transit use and perceptions
- Benefits of the program for the family
- Demographics

Survey Implementation:
- Initially paper survey in English and then online in 4 languages
- Dismal participation
  - Stage 1: With student survey (May 12 to June 5) – 216 participants
  - Stage 2: Media outreach (June 30 to July 15) – 264 participants
Step 3: Incorporating existing data

Additional Analysis Data

**MPS student data (included):**
- Student demographics including GPA, attendance, free/reduced lunch eligibility, gender, grade and race/ethnicity

**Parent survey data (to be included):**
- Parents’ use and perceptions of transit, family benefits, etc.

**Metro transit ridership data (to be included):**
- Frequency of travel, time and day of travel, etc.
Demographic profile of Pass users vs Non-users

Demographics

- **Free and reduced lunch eligible**: 72% Pass User, 27% Non-user
- **White**: 61% Pass User, 23% Non-user
- **African American**: 38% Pass User, 16% Non-user
- **Hispanic American**: 21% Pass User, 13% Non-user
- **Native American**: 2% Pass User, 2% Non-user
- **Asian American**: 16% Pass User, 9% Non-user
- **Male**: 48% Pass User, 52% Non-user
Patterns of Pass Use (pass users only)

**Frequency of pass use** (N=1780)

- Less than once a week: 12%
- 1-2 days a week: 11%
- 3-5 days a week: 26%
- Almost everyday: 51%

**Period of pass use** (N=1780)

- Less than one year: 51%
- 1 to 2 years: 34%
- 2 years or more: 16%
Activities and Pass Use (pass users only)

Do you use the Go-To pass for the following (N=1780):

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social and entertainment</td>
<td>61%</td>
<td>39%</td>
</tr>
<tr>
<td>After-school programs</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Shopping, errands or medical appointments</td>
<td>57%</td>
<td>43%</td>
</tr>
<tr>
<td>Visit family/friends</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>Extra-curricular activities away from school</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>Job, job search or job training</td>
<td>42%</td>
<td>58%</td>
</tr>
<tr>
<td>Play sports</td>
<td>41%</td>
<td>59%</td>
</tr>
<tr>
<td>Take siblings to school or appointments</td>
<td>18%</td>
<td>82%</td>
</tr>
</tbody>
</table>
### User Perceptions (pass users only)

**Pass users perceptions** (N=1780)

<table>
<thead>
<tr>
<th>Perception</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Somewhat agree</th>
<th>Do not agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking time to/from bus/train stops is reasonable</td>
<td>20%</td>
<td>56%</td>
<td>21%</td>
<td>4%</td>
</tr>
<tr>
<td>Traveling on bus/train is safe</td>
<td>17%</td>
<td>51%</td>
<td>28%</td>
<td>4%</td>
</tr>
<tr>
<td>Walking to/from bus/train stops is safe</td>
<td>17%</td>
<td>48%</td>
<td>29%</td>
<td>6%</td>
</tr>
<tr>
<td>Total time spent traveling to/from school is reasonable</td>
<td>15%</td>
<td>50%</td>
<td>27%</td>
<td>9%</td>
</tr>
<tr>
<td>Waiting at bus/train stops is safe</td>
<td>15%</td>
<td>48%</td>
<td>31%</td>
<td>6%</td>
</tr>
<tr>
<td>Departure times while traveling to/from school are flexible</td>
<td>12%</td>
<td>48%</td>
<td>32%</td>
<td>9%</td>
</tr>
<tr>
<td>Waiting time at bus/train stops is reasonable</td>
<td>13%</td>
<td>47%</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td>Seats are always available</td>
<td>7%</td>
<td>26%</td>
<td>45%</td>
<td>23%</td>
</tr>
</tbody>
</table>
Safety Perceptions, Male vs. Female (pass users only)

Pass users safety perceptions male vs. female participants (N=1780)

- Waiting at bus/train stops is safe
  - Male: Strongly agree 19%, Agree 45%, Somewhat agree 21%, Do not agree 13%
  - Female: Strongly agree 7%, Agree 37%, Somewhat agree 5%, Do not agree 4%

- Walking to/from bus/train stops is safe
  - Male: Strongly agree 5%, Agree 21%, Somewhat agree 5%, Do not agree 7%
  - Female: Strongly agree 7%, Agree 44%, Somewhat agree 13%, Do not agree 22%

- Traveling on bus/train is safe
  - Male: Strongly agree 5%, Agree 22%, Somewhat agree 34%, Do not agree 3%
  - Female: Strongly agree 37%, Agree 49%, Somewhat agree 13%, Do not agree 13%

(Notes: Percentages may not sum to 100% due to rounding)

Data source: Humphrey School of Public Affairs, University of Minnesota
Change in Perceptions (pass users only)

65% of pass users reported a change in their perception towards transit after using the Go-To Student Pass

Changes in perceptions (N=1157)

<table>
<thead>
<tr>
<th>Perception</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>I now feel that transit is easier to use than I did before</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>I feel using transit makes me more independent and responsible</td>
<td>76%</td>
<td>24%</td>
</tr>
<tr>
<td>I feel more comfortable around other transit users (non-students) than before</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>My family is more comfortable with me using transit alone than they were before</td>
<td>54%</td>
<td>46%</td>
</tr>
<tr>
<td>I now feel that transit is safer than I did before</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>Transit is now the preferred mode of transportation for me</td>
<td>42%</td>
<td>58%</td>
</tr>
</tbody>
</table>
Benefits of Pass Use (pass users only)

92% of pass users reported that the Go-To Student Pass benefitted them

Benefits of the pass (N=1637)

- Have more flexibility in travel times: 65% Yes, 35% No
- Save/potentially save money on gas and other car-related expenses: 63% Yes, 37% No
- Attend school more regularly (miss fewer days): 62% Yes, 38% No
- Participate in more after-school activities: 54% Yes, 46% No
- Socialize more with family and friends: 54% Yes, 46% No
- Reduce my environmental footprint (e.g., reduce pollution): 50% Yes, 50% No
- Access more work opportunities: 48% Yes, 52% No
- Participate in more extra-curricular activities away from school: 45% Yes, 55% No
Opinions About the Pass (pass users only)

Satisfaction with the Go-To pass (N=1657)

- Not satisfied at all: 2%
- Somewhat satisfied: 17%
- Satisfied: 50%
- Very satisfied: 31%

How is transit in comparison to yellow buses (N=1084)

- Much worse: 3%
- Worse: 9%
- About the same: 29%
- Better: 30%
- Much better: 29%
### General Transit Perceptions (all respondents, Users vs. Non Users)

|/Users have more **POSITIVE** perceptions than non-users/ | Waiting areas at stops are attractive and pleasant  
I can get everywhere I need to using transit  
I can get around quickly by transit  
Service is frequency at times I travel  
It’s easy to find out where routes go and at what times  
Transit is good value for the fare paid  
Other passengers are courteous  
Transit costs less than driving/ |
| Insignificant | Bus drivers are courteous  
Buses and/or trains area comfortable, clean, and well maintained  
Transit is safe to use/ |
| Users have more **NEGATIVE** perceptions than/ | Stops are close to my home and destinations  
Buses and/or trains are almost always on time/ |
Regression Analysis

- Absence 18% lower for pass users after control for other variables
- No significant association with GPA after control for other variables

<table>
<thead>
<tr>
<th></th>
<th>Student GPA</th>
<th># of days absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go-To Student Pass user</td>
<td>0.82**</td>
<td></td>
</tr>
<tr>
<td>Free/reduced lunch status</td>
<td>-0.07**</td>
<td></td>
</tr>
<tr>
<td>Use pass to go or come back from school</td>
<td>1.21**</td>
<td></td>
</tr>
<tr>
<td>Total days absent Spring (2014)</td>
<td>1.11***</td>
<td></td>
</tr>
<tr>
<td>GPA Spring (2014)</td>
<td>0.80***</td>
<td></td>
</tr>
<tr>
<td>Male respondent</td>
<td>-0.05**</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.06*</td>
<td></td>
</tr>
<tr>
<td>American Indian</td>
<td>-0.35***</td>
<td>1.37*</td>
</tr>
<tr>
<td>African American</td>
<td>-0.07**</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td></td>
<td>0.78***</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.12***</td>
<td>1.21**</td>
</tr>
<tr>
<td>Foreign born- student</td>
<td>0.10***</td>
<td></td>
</tr>
<tr>
<td>Foreign born- mother</td>
<td></td>
<td>1.23**</td>
</tr>
<tr>
<td>Foreign born- father</td>
<td>0.08**</td>
<td>0.85**</td>
</tr>
<tr>
<td>Constant</td>
<td>0.95***</td>
<td></td>
</tr>
</tbody>
</table>
## Conclusion

<table>
<thead>
<tr>
<th>Does the program</th>
<th>Findings</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide students with scheduling flexibility?</td>
<td>+</td>
<td>Student survey + focus groups</td>
</tr>
<tr>
<td>Provide greater access to the wide variety of learning opportunities?</td>
<td>+</td>
<td>Student survey + focus groups</td>
</tr>
<tr>
<td>Help encourage student attendance?</td>
<td>+</td>
<td>Student survey</td>
</tr>
<tr>
<td>Help improve academic achievement?</td>
<td>?</td>
<td>GPA outcome empirically tested but no significant association</td>
</tr>
</tbody>
</table>
Next steps

- Revision of survey data analysis (August 26)
  - Incorporate Metro Transit ridership data into analysis
  - Incorporate parent survey data into analysis
  - Additional regression modeling on transit perceptions

- Financial and remaining Societal impact analysis (August 31)

- Work with Metro Transit Staff to develop policy impacts of the study (September 7)

- Draft Final Report (September 7)

- Final Report (September 30)
Thank You!

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Special thanks to:

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MPS
Jonathan Ledeboer
Melody Jacobs-Cassuto
Jane Fields
Jason Matlock
General Transit Perceptions (all respondents, 1/3)

**General Perceptions of Transit Service User vs. Non-user (part 1)**

- **Strongly agree**
- **Agree**
- **Somewhat agree**
- **Do not agree**

### Transit is safe to use
- Non-user: 10%
- User: 12%
- Non-user: 30%
- User: 24%
- Non-user: 7%
- User: 8%
- Non-user: 10%
- User: 11%
- Non-user: 13%
- User: 19%

### Stops are close to my home and destinations
- Non-user: 27%
- User: 29%
- Non-user: 47%
- User: 49%
- Non-user: 44%
- User: 39%
- Non-user: 38%
- User: 42%
- Non-user: 35%
- User: 38%

### Waiting areas at stops are attractive and pleasant
- Non-user: 59%
- User: 55%
- Non-user: 31%
- User: 38%
- Non-user: 42%
- User: 43%
- Non-user: 38%
- User: 50%

### Buses and/or trains are comfortable, clean and well maintained
- Non-user: 18%
- User: 14%
- Non-user: 14%
- User: 9%
- Non-user: 11%
- User: 14%
- Non-user: 6%
- User: 26%

### I can get everywhere I need to using transit
- Non-user: 11%
- User: 15%

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Step 4: Data analysis
### General Transit Perceptions (all respondents, 2/3)

#### General Perceptions of Transit Service User vs. Non-user (part 2)

| Perception                                                                 | Percent | Non-user | User | Non-user | User | Non-user | User | Non-user | User | Non-user | User | Non-user | User | Non-user | User |
|----------------------------------------------------------------------------|---------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|----------|------|
| I can get around quickly by transit                                       |         | 42       | 36   | 43       | 41   | 46       | 46   | 41       | 46   | 30       | 41   | 13       | 43   | 9        | 46   |
| Service is frequent at the times I travel                                |         | 14       | 35   | 35       | 36   | 36       | 39   | 39       | 40   | 10       | 34   | 8        | 30   | 8        | 14   |
| Buses and/or trains are almost always on time                             |         | 21       | 8    | 12       | 15   | 14       | 14   | 12       | 14   | 11       | 12   | 11       | 14   | 11       | 14   |
| It is easy to find out where routes go and at what times                  |         | 10       | 10   | 8        | 10   | 9        | 8    | 9        | 8    | 8        | 10   | 10       | 10   | 10       | 10   |

**Note:** The percentages are not cumulative and are based on the specific metrics provided.
Step 4: Data analysis

General Transit Perceptions (all respondents, 3/3)

General Perceptions of Transit Service User vs. Non-user (part 3)

- Transit is a good value for the fare paid
- Transit costs less than driving
- Bus drivers are courteous
- Other passengers are courteous

<table>
<thead>
<tr>
<th></th>
<th>User</th>
<th>Non-user</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit is a good value for the fare paid</td>
<td>29%</td>
<td>50%</td>
</tr>
<tr>
<td>Transit costs less than driving</td>
<td>28%</td>
<td>53%</td>
</tr>
<tr>
<td>Bus drivers are courteous</td>
<td>22%</td>
<td>43%</td>
</tr>
<tr>
<td>Other passengers are courteous</td>
<td>31%</td>
<td>55%</td>
</tr>
<tr>
<td>Do not agree</td>
<td>7%</td>
<td>11%</td>
</tr>
<tr>
<td>Somewhat agree</td>
<td>14%</td>
<td>19%</td>
</tr>
<tr>
<td>Agree</td>
<td>16%</td>
<td>18%</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>9%</td>
<td>13%</td>
</tr>
</tbody>
</table>