Quantifying the Full Costs of School Transportation

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Overview

- School Transportation Costs
- Cost Saving Examples
- Simulation Analysis
- Policy Implications
School Transportation Costs

**School Districts**
- 4.2% of all education spending in the United States is for transportation
- $22.3 Billion or $452 per student

**Families**
- 50% of students use autos to get to school
- 30 billion miles driven
- 6.6 billion auto trips
- 1 billion hours in the car
Hazard Busing

Busing children to school due to hazardous walking conditions

- Florida: 1% of all students are bused due to hazardous conditions
- US: 5.6% of K-8 students lived within 1 mile of school and rode the school bus

Best Cost Estimate:
Hazard Busing costs school districts $200-400 million per year
What could you do with $200-400 million?
Build 3,000 miles of bike lanes

Bike Lane: $90,000 per mile

Source: Bushell, et al. 2013
Hire 46,000 crossing guards

Crossing Guard: $6,500 per intersection per year
Install 600,000 school crossings

School Crossing: $520

Source: Bushell, et al. 2013
Have schools used SRTS to save transportation costs?

Yes.
Example: Auburn, Washington

- Reduced need for hazard busing through infrastructure investments
  - Traffic calming near schools
  - Sidewalks/paths
  - Signage
- Now: 20% of students walk or bike
- School district saved $240,000 annually in hazard busing costs
  - One elementary school went from 6 buses to 1

Source: SRTS National Partnership, 2010; Pullen-Seufert et al. 2009
Example: Highland Park, NJ

• Small district: 1.9 square miles
• Eliminated school bus service in fall 2008 and saved $100,000 per year
• Implemented measures to make walking and biking safer
  – New crossing guards
  – Designated walk-to-school routes
  – Walking school buses
  – New sidewalks/crosswalks
Where can this work best?
Simulation Analysis

• Compare busing costs with and without hazard busing
  – No hazard busing
  – 50% of kids within 1 mile hazard bused
  – 100% of kids within 1 mile hazard bused

• 4 schools that vary in land use context and proportion living within one mile
## Study Schools

<table>
<thead>
<tr>
<th></th>
<th>Students Within 1 Mile</th>
<th>Average Distance to School</th>
<th>Development Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>School A</td>
<td>80%</td>
<td>1.0</td>
<td>Gridded Streets</td>
</tr>
<tr>
<td>School B</td>
<td>60%</td>
<td>0.9</td>
<td>Gridded Streets</td>
</tr>
<tr>
<td>School C</td>
<td>40%</td>
<td>1.9</td>
<td>Gridded Streets</td>
</tr>
<tr>
<td>School D</td>
<td>20%</td>
<td>2.7</td>
<td>Loop and Lollipop</td>
</tr>
</tbody>
</table>
Number of Buses

<table>
<thead>
<tr>
<th>School</th>
<th>No</th>
<th>50%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>School A</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>School B</td>
<td>1</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>School C</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>School D</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>
Cost per Enrolled Student

- School A
- School B
- School C
- School D
Cost per Enrolled Student

School A | School B | School C | School D
---|---|---|---
No | 50% | 50% | 50%

Legend:
- No
- 50%
Cost per Enrolled Student

- School A
- School B
- School C
- School D

Legend:
- No
- 50%
- 100%
Potential Cost Savings

• Eliminating hazardous conditions around schools can save districts money
  – School A:
    • Save $63,000 per year if 100% of students hazard bused
    • Save $33,000 per year if 50% of students hazard bused
  – School D:
    • Save $36,000 per year if 100% of students hazard bused
    • Save $21,000 per year if 50% of students hazard bused

• Amount of savings varies with local context and school enrollment
Implications

• Investments in SRTS to eliminate hazardous walking conditions can pay for themselves

• Challenge to overcome institutional barriers
  – How to ‘capture’ the cost savings in order to pay for infrastructure improvements
  – Districts do not generally make improvements off the school site
  – Some districts do not pay for busing so no savings from making walking and biking safer
  – Potential to transfer costs to families
Questions