Promoting Alternative Transportation for the WPI Community

By Dusty Cyr, Anthony Hannoush, Emmit Joyal, Michael Josephs, and Anthony Mikelonis
Sustainability and Transportation
Why is sustainability important to WPI?

- **Sustainability** – “creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations.” (EPA)

- “WPI's campus-wide efforts in energy and resource conservation and reduction in the harmful environmental impacts of our operations, are all directed toward enhancing the long-term sustainability of WPI's activities and the environment of which we are a part.” (WPI Sustainability Task Force)

- WPI has a desire to be sustainable
How is transportation related to sustainability?

- **Sustainable transportation** - any form of transportation that has a low impact on the environment
  - fuel-efficient public transit such as city buses and commuter rails
  - carpooling
  - non-motorized methods of transportation such as walking and cycling

("Sustainable Engineering and Ecological Design," 2013)
The WPI Community relies heavily on personal vehicle use. 

Harmful Effects of Personal Vehicles:

Parking Designations

Gateway Park

- Visitors
- Employees/Commuters
- Residential Students
- Dean Street Garage Pass Only
- No Parking Anytime

Handicap Access:
- Entrance
- Ramp
- Curb Cut
Our Research Goals

This project aims to encourage and promote alternative transportation for the WPI community.

• Which forms of alternative transportation can reduce the amount of personal vehicle use?

• What forms of alternative transportation already exist for WPI community members?

• Which modes of alternative transportation do commuter students, faculty and staff who drive personal vehicles say would change how they travel?

• How safe is the area around campus for bicycling and walking? Is it reasonable to suggest promoting walking and bicycling?)
Methodology
Research the current alternative transportation options already existing for WPI community members

More sustainable:
Less sustainable:
Research what other colleges and cities have done to encourage and promote alternative transportation.
Understand from where and how WPI community members travel to and around campus.

- [http://wpimaps.weebly.com/](http://wpimaps.weebly.com/)
- Survey of WPI Community

<table>
<thead>
<tr>
<th>Population</th>
<th>Count</th>
<th>% of Survey Takers</th>
<th>% of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>120</td>
<td>12%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Sophomore</td>
<td>119</td>
<td>12%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Junior</td>
<td>145</td>
<td>15%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Senior</td>
<td>125</td>
<td>13%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Total Undergrads</td>
<td>509</td>
<td>52%</td>
<td>12.9%</td>
</tr>
<tr>
<td>Graduate Students</td>
<td>138</td>
<td>14%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Total Students</td>
<td>647</td>
<td>66%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Staff Member</td>
<td>215</td>
<td>22%</td>
<td>50.6%</td>
</tr>
<tr>
<td>Faculty Member</td>
<td>105</td>
<td>11%</td>
<td>21.6%</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>967</td>
<td>99%</td>
<td>14.1%</td>
</tr>
</tbody>
</table>
Produce a list of recommendations to the WPI Department of Facilities and other relevant groups to promote and encourage alternative transportation.

WPI

Promoting Alternative Transportation for the WPI Community

By Dusty Cyr, Anthony Hannoush, Emmit Joyal, Michael Josephs, and Anthony Mikelonis
Findings and Recommendations
There is a lot of work to be done for WPI’s current transportation situation...

![Bar chart showing How Respondents Commute to Campus Sorted by Location.](chart.png)

- **Live within a 10 minute walking distance:** 95.8%
- **Live within Worcester, but greater than a 10 min. walking distance:** 67.5%
- **Live surrounding communities near Worcester:** 97.7%
- **Live Farther away from campus:** 89.7%
We recommend that WPI’s Carpool World website be **improved**, and that the WPI Office of Student Life, WPI Human Resources, and the WPI Department of Facilities **promote and advertise it heavily**.

### Large Number of Personal Vehicles:

<table>
<thead>
<tr>
<th>Mode of Alternative Transportation</th>
<th>“Never used it”</th>
<th>“Never heard of it”</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRTA Bus System</td>
<td>74%</td>
<td>4%</td>
</tr>
<tr>
<td>MBTA Commuter Rail</td>
<td>34%</td>
<td>5%</td>
</tr>
<tr>
<td>Zipcar</td>
<td>83%</td>
<td>3%</td>
</tr>
<tr>
<td>Carpool World Website</td>
<td>47%</td>
<td>52%</td>
</tr>
<tr>
<td>SNAP and Gateway Shuttles</td>
<td>38%</td>
<td>2%</td>
</tr>
</tbody>
</table>

*Carpool World is only option that most do not know about*
We recommend that WPI’s Carpool World website be improved, and that the WPI Office of Student Life, WPI Human Resources, and the WPI Department of Facilities promote and advertise it heavily.

Respondents (who commute by car) who said that easier carpooling would change how they travel...

Live within Worcester

- Undergraduates: Possibly 25%, Definitely 42%
- Graduate Students: Possibly 31%, Definitely 23%
- Faculty: Possibly 8%, Definitely 23%
- Staff: Possibly 11%, Definitely 11%

Live in Surrounding Communities

- Undergraduates: Possibly 17%, Definitely 50%
- Graduate Students: Possibly 29%, Definitely 29%
- Faculty: Possibly 8%, Definitely 50%
- Staff: Possibly 10%, Definitely 27%

Live Farther Away

- Undergraduates: Possibly 22%, Definitely 22%
- Graduate Students: Possibly 9%, Definitely 27%
- Faculty: Possibly 6%, Definitely 38%
- Staff: Possibly 10%, Definitely 50%
We recommend that the WPI Department of Facilities create a free or inexpensive bike rental program, and provide more infrastructure such as air pumping stations and bike rooms around campus.
We recommend that the WPI Department of Facilities create a free or inexpensive bike rental program, and provide more infrastructure such as air pumping stations and bike rooms around campus.

Key Area: Respondents who drive ≥ once a week to Gateway who said that a free/inexpensive bike rental program would change how they travel

<table>
<thead>
<tr>
<th></th>
<th>Possibly</th>
<th>Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>29%</td>
<td>14%</td>
</tr>
</tbody>
</table>

Out of 42 respondents
We recommend that the WPI Department of Facilities install a WRTA Information Ticker and/or WRTA kiosk in the Rubin Campus Center.

Respondents (who commute by car) who said that more frequent or convenient WRTA routes would change how they travel...

Live within Worcester

- Undergraduates: 50% Possibly, 15% Definitely
- Graduate Students: 15% Possibly, 15% Definitely
- Faculty: 31% Possibly, 23% Definitely
- Staff: 17% Possibly, 28% Definitely

Live in Surrounding Communities

- Undergraduates: 8% Possibly, 25% Definitely
- Graduate Students: 8% Possibly, 14% Definitely
- Faculty: 8% Possibly, 38% Definitely
- Staff: 4% Possibly, 10% Definitely
We recommend that the WRTA and WPI Department of Facilities work together to get a WRTA stop on campus.

“A WRTA bus stop right on or at the main campus would be helpful”

“Add a WRTA bus stop on campus”

Visualization
We recommend that WPI Human Resources work with the MBTA to offer a reduced-price rate for the Commuter Rail.

The commuter rail cuts through the areas of many employees (43 faculty, 24 staff)...
We recommend that WPI Human Resources work with the MBTA to offer a reduced-price rate for the Commuter Rail.
We recommend that WPI Human Resources work with the MBTA to offer a reduced-price rate for the Commuter Rail.

<table>
<thead>
<tr>
<th>Location</th>
<th>Cost/Day</th>
<th>Monthly Pass</th>
<th>Cost/Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Station (Boston)</td>
<td>$20.00-$26.00</td>
<td>$314.00</td>
<td>$1256.00</td>
</tr>
<tr>
<td>Newtonville</td>
<td>$11.00</td>
<td>$184.00</td>
<td>$736.00</td>
</tr>
<tr>
<td>West Newtonville, Auburndale</td>
<td>$10.00</td>
<td>$167.00</td>
<td>$668.00</td>
</tr>
<tr>
<td>Wellesley (Hills, Farms, Square)</td>
<td>$9.00</td>
<td>$151.00</td>
<td>$604.00</td>
</tr>
<tr>
<td>Natick, West Natick</td>
<td>$8.00</td>
<td>$134.00</td>
<td>$536.00</td>
</tr>
<tr>
<td>Framingham</td>
<td>$7.00</td>
<td>$118.00</td>
<td>$472.00</td>
</tr>
<tr>
<td>Ashland, Southborough</td>
<td>$6.50</td>
<td>$109.00</td>
<td>$436.00</td>
</tr>
<tr>
<td>Westborough</td>
<td>$6.00</td>
<td>$100.00</td>
<td>$400.00</td>
</tr>
<tr>
<td>Grafton</td>
<td>$5.00</td>
<td>$82.00</td>
<td>$328.00</td>
</tr>
</tbody>
</table>

Better Options:

- MBTA Semester Pass
- MBTA Online Corporate Pass
- Tax Deductions
We recommend that the WPI Web Development Office create a clear, updated, and central website with information about all alternative transportation options for WPI community members.

Refer back to this table:

<table>
<thead>
<tr>
<th>Mode of Alternative Transportation</th>
<th>“Never used it”</th>
<th>“Never heard of it”</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRTA Bus System</td>
<td>74%</td>
<td>4%</td>
</tr>
<tr>
<td>MBTA Commuter Rail</td>
<td>34%</td>
<td>5%</td>
</tr>
<tr>
<td>Zipcar</td>
<td>83%</td>
<td>3%</td>
</tr>
<tr>
<td>Carpool World Website</td>
<td>47%</td>
<td>52%</td>
</tr>
<tr>
<td>SNAP and Gateway Shuttles</td>
<td>38%</td>
<td>2%</td>
</tr>
</tbody>
</table>

• “A few problems I have noticed with WPI transportation are that the information about routes/schedules is not well organized or widely publicized. “

• “If the options were made clearer (such as saying which bus lines go where of interest when), that might be really helpful.”

• “More publicizing of the WRTA bus schedule and WPI transport options would improve alternative transportation near WPI.”

Could avoid comments like:

• “Buses from MBTA in Worcester to WPI are ?? don't even know how that could be done.”
• "The link from the train station to WPI seems weak or not available."
• “Perhaps transport over to Price Chopper would be useful."
Summary of Recommendations

We recommend...

1. WPI’s **Carpool World** website be improved, and that the WPI Office of Student Life, WPI Human Resources, and the WPI Department of Facilities promote and advertise it heavily.

2. The WPI Department of Facilities create a **free or inexpensive bike rental program**, and provide more infrastructure such as air pumping stations and bike rooms around campus.

3. The WPI Department of Facilities install a **WRTA Information Ticker** and/or **WRTA kiosk** in the Rubin Campus Center.

4. The **WRTA** and WPI Department of Facilities work together to get a **WRTA stop on campus**.

5. **WPI Human Resources** work with the MBTA to offer a **reduced-price rate** for the **Commuter Rail**.

6. The **WPI Web Development Office** create a **clear, updated, and central website** with information about all alternative transportation options for WPI community members.
Special Thanks to:

- Professor Kristin Boudreau & Professor Richard Vaz, our advisors
- Mrs. Elizabeth Tomaszewski, our sponsor from the WPI Department of Facilities
- Mr. Stephen O’Neil, Administrator of the WRTA
- Mr. Gregory Snoddy, Associate Dean of Students
- Ms. Deborah Graves, Executive Assistant to the Provost
- Ms. Cynthia J. Pellegrino, Director of Human Resources
Questions or Comments?
Extra Slides
Survey Breakdown

Survey Respondents Breakdown: Percentage of Total Survey Takers

- Undergraduates: 53%
- Freshman: 13%
- Sophomore: 12%
- Junior: 15%
- Senior: 13%
- Graduates: 14%
- Staff Member: 22%
- Faculty Member: 11%

Total WPI Population

- Undergraduates: 58%
- Graduates: 29%
- Staff Member: 6%
- Faculty Member: 7%
- Students:
  - Freshman: 13%
  - Sophomore: 12%
  - Junior: 15%
  - Senior: 13%
On-Campus Respondents: WRTA

On/Near-Campus Respondents Who Would Change Their Habits with More Frequent/Convenient WRTA Bus Routes

<table>
<thead>
<tr>
<th>Category</th>
<th>Undergraduate Students</th>
<th>Graduate Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possibly (Sometimes Use Car)</td>
<td>31%</td>
<td>0%</td>
</tr>
<tr>
<td>Definitely (Sometimes Use Car)</td>
<td>8%</td>
<td>0%</td>
</tr>
<tr>
<td>Possibly (Always Use Car)</td>
<td>29%</td>
<td>0%</td>
</tr>
<tr>
<td>Definitely (Always Use Car)</td>
<td>6%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Legend:
- Possibly (Sometimes Use Car)
- Definitely (Sometimes Use Car)
- Possibly (Always Use Car)
- Definitely (Always Use Car)
On-Campus: MBTA

On/Near-Campus Respondents Who Would Change Their Habits with a More Frequent/Convenient MBTA Commuter Rail

Undergraduate Students

Possibly (Sometimes Use Car): 30%
Definitely (Sometimes Use Car): 20%
Possibly (Always Use Car): 10%
Definitely (Always Use Car): 10%

Graduate Students

Possibly (Sometimes Use Car): 54%
Definitely (Sometimes Use Car): 31%
Possibly (Always Use Car): 39%
Definitely (Always Use Car): 10%
On-Campus: Zipcar

On/Near-Campus Respondents Who Would Change Their Habits with a Better Zipcar

- Undergraduate Students:
  - Possibly (Sometimes Use Car): 29%
  - Definitely (Sometimes Use Car): 12%
  - Possibly (Always Use Car): 11%
  - Definitely (Always Use Car): 0%

- Graduate Students:
  - Possibly (Sometimes Use Car): 31%
  - Definitely (Sometimes Use Car): 23%
  - Possibly (Always Use Car): 11%
  - Definitely (Always Use Car): 14%

Legend:
- Light blue: Possibly (Sometimes Use Car)
- Blue: Definitely (Sometimes Use Car)
- Light pink: Possibly (Always Use Car)
- Red: Definitely (Always Use Car)
Off-Campus Bikes

Commuters who would change their habits with Free/Inexpensive Bike Rentals

- Undergraduates: Possibly 18%, Definitely 24%
- Graduate Students: Possibly 29%, Definitely 23%
- Faculty: Possibly 14%, Definitely 7%
- Staff: Possibly 14%, Definitely 7%
Faculty Members
Staff Members
Increasing Safety and Security in areas near WPI

- Definitely change how I would travel
- Possibly change how I would travel

Undergraduate Students (out of 475 respondents):
- 35%
- 37%

Graduate Students (out of 129 respondents):
- 45%
- 31%