

Seminar: A Sustainable Transportation Plan for MIT

Spring 2007

**1.963 Special Graduate Studies
in Civil & Environmental Engineering**

**6 credits (1.5 - 0 - 4.5)
Wednesdays, 2:30-4:00 PM**

Instructors:

J. Attanucci (Center for Transportation & Logistics)

L. Brutti (Operations Manager, MIT Parking & Transportation Office)

Course Schedule

February 7:

Introduction to transportation at MIT/Course Expectations from both the faculty and student perspectives

February 14:

Perspective on MBTA service to MIT: From the #1 Bus to the Urban Ring (Fred Salvucci)

February 21 - March 14 (4 classes): Topics to be determined

March 21: Interim Research Reports

April 4 - May 9 (6 classes): Topics to be determined

May 16: **Final Project Presentations**

Course Requirements

Assignment #1 (due February 21):

Outline of research interest, including questions to be addressed and proposed methodology (2-3 pages)

Assignment #2 (due March 21):

Interim research reports: Powerpoint presentations (10-15 minutes)

Assignment #3 (due April 25):

Outline of results and recommended strategies

Final Report (due May 9):

Written report and draft powerpoint presentation

Final Presentation (May 16): Presentation to MIT Community

Transportation at MIT

- **Commuting to Work/School**
 - Lots of alternatives/no dominant mode
 - MIT highly encourages alternative modes
- **Visitors/Vendors**
 - Not many options to park
 - Red Line helps, but not central to campus
- **Mid-day travel**
 - Most to Cambridge or Back Bay destinations
 - Easy in/easy out allows parkers to use cars if available

2006 Transportation Survey

- **Raw results available; not yet adjusted for response bias**
- **Rough Commuter Mode Shares (not including freshmen)**
 - **30-35%** **Walked or biked**
 - **25-30%** **Drove**
 - **25-30%** **Took public transit**
 - **0-5%** **Other mode (taxi, shuttle, etc.)**
 - **5%** **Worked at home/took time off**
- **Out of almost 20,000 total campus population:**
 - **4,300-5,100** **MBTA passes distributed monthly**
 - **3,200** **Regular employee parkers**
 - **1,400** **Occasional employee parkers**
 - **550** **Student parkers**

Policy Options to Consider

- **Parking policies and pricing**
- **MBTA pass program options**
- **MIT shuttle services vs. MBTA services**
- **MIT "Commuting Alternatives" services**
- **The Urban Ring project impact**
- **Campus Master Plan/physical design elements**
- **Housing policies**
- **City of Cambridge policies vis a vis street space and parking**

MIT Parking and Transportation FY07 Budget

Employee Parking

3,711 spaces
\$10.5M Expense
(\$2.7M) Revenue
(\$7.8M) EB Pool

Shuttles

Saferide, Tech, NW and Boston Daytime
\$1M Expense
(\$145K) Revenue
(\$855K) GIB/EB pool

Student Parking

1,103 spaces
\$560K Expenses
(\$390K) Revenue
(\$170K) GIB

Employee Tpass

3,016 per month
\$2.7M Expense
(\$1.45M) Revenue
(\$1.25M) EB Pool

Commuting Alternatives

\$165K Expense

- Bike racks \$10K
- EzRide Shuttle \$98K
- Emergency Ride Home \$24K
- Carpools \$30K
- Vanpools \$3K
- ZipCar \$16K

Student Tpass

2,250 per month
\$1.3M Expenses
(\$700K) Revenue
(\$575K) GIB

Parking

- **4,814 spaces**
- **\$11M expense**
 - **Materials and Services** **\$700K**
 - **Leased Parking** **\$1.3M**
 - **Interest** **\$2.7M**
 - **Depreciation** **\$2.1M**
 - **Institute space charges** **\$2.5M**
 - **Contract Services** **\$800K**
 - **Other** **\$900K**

Parking

- **Parking Revenue \$3M**

- **Employee Revenue \$2.4M**
- **Student Revenue \$360K**
- **Violation Revenue \$50K**
- **Other Revenue \$223K**

Expense per parking space \$2,285

Revenue per parking space \$623

Average subsidy 73%

Shuttles

\$1M Expense

- Maintenance and Repairs** **\$164K**
- Drivers (contract services)** **\$680K**
- Fuel** **\$110K**
- Vehicle Leases** **\$70K**

(\$145K) Revenue

- DSL and Donor** **\$75K**
- Charters** **\$70K**

MBTA Pass Program

- **Payments to MBTA \$4M**
 - **Employee Payroll Deductions \$1.47M**
 - **Student Bursar Deductions \$700K**
 - **Employee Subsidy \$1.25M**
 - **Student Subsidy \$575K**

Average subsidy 46%

Questions

- **How can we more efficiently utilize the limited P&T budget dollars?**
- **How can we increase services without increasing expenses?**
- **Can we utilize the MBTA and private shuttle routes in conjunction with the MIT shuttles to offer more service at a lower cost?**

Discussion of Student Interests

- **Are particular options "dominant"?**
- **What criteria should be used to rank alternatives?**
- **Should we separate options by budget impacts?
(re-allocate existing budget vs. new budget)**
- **How should we interact with the administration
"along the way" versus delivering a final report?**