

FINAL ASSIGNMENT

In the Millennium Database assignment, each of you grappled with the problems of identifying the characteristics that lead to more suitable land use/transportation systems, by comparing characteristics across different metropolitan areas. However, none of you looked at the “longitudinal” or time series opportunity to try to understand how Zurich, London, Hong Kong, or Chicago metropolitan areas have evolved over the past several decades, as population, economic activity, and personal income have grown. We are providing each of you with copies of all of the papers, so you have access to each others’ ideas from the last assignment.

The first step of the final assignment is to look at some key indicators to understand how the four cities have changed over the past 20 or 25 years. Second, we want you to provide advice to three different important leaders on how they can contribute to moving the Boston region into a more sustainable growth pattern from both economic and environmental standpoints. The three leaders are:

- (1) Susan Hockfield, President of MIT
- (2) Daniel Grabauskas, MBTA General Manager, and
- (3) Deval Patrick, Governor-elect of Massachusetts.

(1) **MIT President Susan Hockfield** can strongly affect the direction of MIT’s physical development and accessibility for students, faculty, and staff over the next decade. She has publicly committed herself to lead by example in the area of energy, but she has been told that energy consumption by commuting represents only 7% of the energy consumption generated by MIT’s total campus activity. That low estimate does not consider that because of MIT’s urban location in a transit-accessible area, and existing MIT transit incentives, non-auto mode shares are much higher, and auto mode shares much lower than they might otherwise be. In addition, that low estimate does not consider the possibility that the mode choice to access MIT strongly influences the mode choice for other trip purposes by MIT-affiliated personnel. If an MIT employee uses an auto to access MIT, he or she will generate substantial vehicle miles of

travel for other trip purposes, so the mode choice to MIT impacts much more than the 7% identified as access to MIT.

For these two reasons, MIT's physical development and the student/faculty/staff access, policies may have much more importance than the 7% measure suggests.

Of course, there are other considerations directly related to MIT's mission that President Hockfield must consider. Building underground parking spaces under new buildings is likely to cost over \$100,000 per space, and use space that might otherwise be used for laboratories or other activity. Easy access to MIT from suburban communities with high amenities and good school systems is important to attract and retain good faculty, etc.

In addition to MIT's direct control of its own activity, if it provides converging ideas in its leadership by example, MIT can influence other universities, other major employers, and the policies of the state and MBTA, so a compelling example and advocacy of MIT could have major impact.

(2) **MBTA General Manager Grabauskas** is an appointee of Governor Romney, but he has a contract, and the majority of the MBTA board of directors will continue to be Romney appointees for some time, so he may continue to be General Manager for at least the next two years. His decisions on service policy, fares, and capital investment will strongly affect the quality and reliability of transit service for the entire MBTA district. He is known for tough yet competent public administration.

(3) **Governor-elect Deval Patrick** is organizing his transition. He has asked his transportation transition team to prepare 4 to 6 measurable goals to be tested with the public over the next six weeks, and then be used to guide and monitor transportation priorities. He needs to decide to work with Grabauskas, or use his political capital to change the law and put in his own people. As Astrid Glynn pointed out, he needs to recognize that he has a window of about 1.5 years for new initiatives. The rest of the time he will be immersed in implementation or

reacting to new events. Assume that he wants to make a serious shift towards sustainable smart growth and transportation strategies. What 6 initiatives do you suggest?

Use the 12-step process to organize your thinking on this. Use the insights from your prior papers; in particular, the Millennium Database and a time-series review. You are being provided with several sets of data pertaining to Boston and its comparison to other US Cities. The data is both in absolute and percentage terms. In return, we are asking you to use that data to support in quantitative terms both your views on the current system and your recommendations.

Your paper should blend public policy with data analysis. While it is important to ground your policy recommendations in data and statistics, it is equally important to step back from the numbers, and give decision-makers whatever lessons you can draw in a clear, succinct memo.

Here is a suggestion for the paper's format and length, for an absolute *maximum* length of 15 pages (single-spaced), excluding any appendices:

1. International longitudinal analysis (3 pages maximum)
2. Observations and general thinking on Boston in particular (4-6 pages maximum)
3. Recommendations to the three decision-makers, (1-2 pages each = 3-6 pages maximum)

Note these are maximum page limits only.

This paper is due Friday, December 8, by 2pm. Please note this is an extension of several days from the date originally posted on the course calendar. We will have no session on Tuesday, December 5.

Several new sources of information you might review:

1. Time-series data on Boston from Kenworthy+Laube (from An International Sourcebook of Automobile Dependence In Cities 1960-1990)
2. Mass.Commuting – report on state trends from MassInc, a non-profit
<<http://www.massinc.org/index.php?id=453>>
3. The Texas Transportation Institute report on congestion, which provides annual data on congestion in both U.S. metropolitan areas, going back over about two decades
<http://mobility.tamu.edu/ums/congestion_data/tables/boston.pdf>
4. National Transit Database profiles on the MBTA's financial and operating statistics every year since 1999
<http://www.ntdprogram.com/ntdprogram/pubs/top_profiles/2005/agency_profiles/1003.pdf>
5. MIT Transportation Survey – high-level summary statistics on the two most recent MIT travel surveys, 2002 and 2004
<http://web.mit.edu/ir/surveys/oth_2002_transportation_survey.pdf>
<http://web.mit.edu/ir/surveys/oth_2004_transportation_survey.pdf>
6. Energy Use and Greenhouse Gases from MIT – thesis from Tiffany Groode and John Heywood, source of the “7%” figure. Transportation section begins p.37.
7. Journey to Work Trends in the U.S. and its Major Metropolitan Areas 1960-2000 – FHWA national statistics that allow you to see how Boston compares to other U.S. cities.
 - a. <http://www.fhwa.dot.gov/ctpp/jtw/contents.htm> Specific tables to focus on: 2.6, 2.8, 2.14, 3.5, 3.6, 4.10, 4.11, 4.12, 4.13, 5.4, 5.4, 5.5
 - b. <http://www.fhwa.dot.gov/ctpp/jtw/jtw8.htm#bos> Note how this report defines the boundaries of “Boston.”

8. Commuting in America III – Alan Pisarsky report on national commuting trends. Specific pages to note: Part 1 Page 3; Part 3 Pages 94, 95, 100, and 106. < <http://onlinepubs.trb.org/onlinepubs/nchrp/CIAlII.pdf>>
9. Boston Transportation Fact Book – report on the City of Boston only, pages 1-15.
<<http://www.cityofboston.gov/transportation/accessboston/pdfs/front.pdf>>

We will discuss clarifications and questions in our next class (Friday, December 1). Be sure to begin working so you can ask good questions and contribute to the class discussion on December 1.

Have a good Thanksgiving!