

Tufts University  
Department of Urban and Environmental Policy and Planning

## **Transportation Planning UEP 0173 (Fall 2013)**

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Location: UEP Brownhouse Classroom

Day/ Time: Tuesday 6:00 to 8:30 PM

Office hours: By appointment only

### **Course Description**

Transportation systems are a web made up of vehicles, networks and terminals. In addition, land use and urban design play important roles in determining the cost and scope of transportation systems. This course takes a holistic approach to transportation planning weaving together the day-to-day mobility needs of people at the neighborhood level with transportation infrastructure.

As much as possible in a survey course, there is a focus on skills and tools needed to effectively plan transportation projects- both directly through planning skills and indirectly through managing consultants. These skills will be highlighted in each class through presentations by guest speakers and application of readings to specific scenarios in "speed planning" exercises.

**Course Objectives**-- At the end of the course students will understand the profession of transportation planning including the institutions, professionals and citizen groups that impact transportation policy. The course will look at:

- Transportation from the perspective of economic and environmental efficiency.
- Professional disciplines and sub-disciplines of transportation planning including walking, street design, bicycling, transit and car-management policy tools.
- Transportation problems and solutions presented within the context of social change, technological advancement and environmental constraints.
- Physical and institutional contexts of transportation planning including the nexus between funding, policy and the built environment.
- Social contexts of transportation including: disadvantaged communities, affordable housing and livable streets.

This is a survey course. We will be examining transportation broadly. Students will be expected to research their own specialty and interest areas as part of two major projects in the course. For efficiencies sake you should try to ascertain what areas you are interested in and focus on as early as possible in the course. This will facilitate your independent research to gain depth in at least one particular area (more on that below).

### **Structure of Course/ Assessment**

Each class will cover a major theme of urban transportation planning. With some variation, the general format of each class will have two parts: The first

half will be a lecture/ slide show-overview of a major transportation topic. The second half of the class will involve wither a presentation by transportation professional or will focus on technical skills related to the subject area at hand.

## **Grades**

Student grades will be based on class participation (15%), a neighborhood transportation survey (15%), a mid term exam (30%), and a final presentation and paper(40%). Please submit all work electronically (**no paper please!**). These are described in more detail below:

**Class participation (15%):** Arrange your schedule so you can make it to **ALL** the classes. Be sure to do the readings and come prepared to participate in class discussions. As you do the readings think about questions or provocative ideas that are brought up in the readings. Be prepared to **talk** about these in class. If you are a sit-back-and-watch student, you need to push yourself to participate in class discussion. Each class will begin with a small presentation by one or two students in the class on items-in-the-news that are related to the class topic for that day. Please read over the syllabus and pick a few classes that you are interested in leading this discussion on.

## **Neighborhood Transportation Survey 15%**

This exercise helps you to apply class concepts to a neighborhood or business district that you care about. Pick a geographic area to analyze that includes at least one intersection and a section of street (100 to 300 yards). Keep a journal on Google Documents that includes an analysis of the street (share this with me). For each class through class 7 (Streetscape Design) apply class concepts to this area. Consider the following concepts:

- Networks/ Nodes and Vehicles for each mode of transportation that we cover. What are the assets and deficiencies that you observe?
- Social impacts--> young old and infirm? Opportunities for social interaction?
- Environmental impacts: noise, air pollution
- Aesthetics: is this area beautiful when considered from each modes viewpoint?
- What modes are missing? Is it a problem that they are missing or is the mode inappropriate for the segment that you are analyzing?

Suggest Improvements and/or Solutions to deficits. Address the following:

- Costs?
- Political barriers to excellence?
- Institutional barriers to excellence?
- Financial Barriers?
- Prospects for change... political/ transportation strategies
- Other issues and opportunities that you noticed

Note: You do not need to cover each of the above for every journal entry, but relevant areas should be touched on when appropriate.

**Midterm exam (30%):** This is a take home exam that is comprised of the following question: Tell me succinctly in (1000 to 1200 words) what elements of transportation planning most directly impact a policy or planning issue that you are concerned about. Your challenge is to **communicate clearly** the nature of the problem, the most cost effective and important solutions and policies that can help remedy the situation, and political, economic or social barriers to implementation. A key element here is writing an extremely tight paper. If you have concerns about your writing skills, be sure to get help editing from your good-writing-editing friends and/ or the Tufts Writing Lab (<http://uss.tufts.edu/arc/writingtutoring/>).

**Final Project (30%):** Students will work in teams or alone towards a final presentation and paper that will highlight either a specific transportation mode, technology or problem, or focus on the intersection of transportation and their particular focus or interest area at UEPP. You must have a project outline to me by **October 1st**. Please contact me before **September 24th** if you are having trouble coming up with a project.

Both the midterm and final project grades are based on the following criteria. The paper must:

- Address an important transportation policy issue (25%)
- Include citations or original data that back up your findings (25%)
- Have a clear introduction, problem definition &/ or research statement (15%)
- Close with a summary of the research and findings (15%)
- Have crisp sentence/ paragraph structure with few grammatical errors (20%)

**Final Project Presentation (10%):** This takes place during the last class. You will present your final project to the class using whatever tools or media you choose.

Please submit all work electronically (**no paper please!**).

### **Textbooks**

There are two text books for the class: [Human Transit](#) and [City Cycling](#). Both are quite inexpensive by textbook standards. Please order these books on-line as soon as you are sure you are taking the class. At the end of the semester I will buy your well taken care of used books for half price to distribute to students in next year's class. *If you intend to sell me your books at the end of the semester, do not write in them!*

### **Class Schedule**

#### **Class 1 (9/3) INTRODUCTORY CLASS**

The wonderful world of transportation-- student interests and what this class will cover.

Review of format of class, grading and getting the most from the class

Mind map of classmates interests in transportation

For next class: Bring street dimensions and photos of your Neighborhood Transportation Survey area on thumb drive or laptop.

Order [Human Transit](#) and [City Cycling](#) if you are sure you are taking the class.

## **Class 2 (9/10) PEDESTRIAN PLANNING BASICS**

Walking: the oldest and most important mode of transportation.

Order [Human Transit](#) and [City Cycling](#) if you are sure you are taking the class.

### Readings (on Trunk)

Hamilton-Baillie, Benjamin. Home Zones - Reconciling People, Places and Transport

Nelson\Nygaard Consulting Associates Safe Routes to Transit (Pedestrian section) for Institute for Transportation and Development Policy

ITE Context Sensitive Solutions. Read chapter 8

Jacobsen, P.L. 2003. Safety in Numbers: more walkers and bicyclists, safer walking and bicycling. Injury Prevention Vol. 9. pp 205-209

### Neighborhood Surveys

St. Louis School of Public Health/ Audit Tool (Use this as a guide in looking at your neighborhood survey area). You don't need to do a complete audit. Just use it to identify resources and missing pieces in your survey.

Visit the website Walkscore.com and apply it to your Neighborhood Transportation Survey Area? Read about the general [shortcomings of WalkScore here](#). Does Walkscore reflect well your Neighborhood? What elements of WalkScore aren't accounted for?

## **Class 3 (9/17) STREETSCAPE DESIGN I**

Designing streets for all modes (not just cars)

If you haven't done so, order City Cycling and Human Transit

Speaker: Jeff Rosenblum, City of Cambridge (Invited)

### Readings

Jan Gehl, Cities for people, 2010, Island Press. Read [chapter 1](#):

ITE Context Sensitive Solutions. This is a big document:

Skim Chapters 1-4 paying particular attention to the following sections:

"Introduction to CSS" from bottom of page 4 through page 6 (using the numbering in the document/ not the pdf page number). Although we're focusing on the design components of CSS be sure to understand Tables 1.1

and 1.2.

Read Chapters 5-7 and understand all Terms in Glossary on page 216.

New York City Street Design Manual

Read carefully through page 39. Skim the rest of the manual.

Understand all Glossary terms on page 200

Compare the content and format of this manual with the ITE Street Design Manual

## **Class 4 (9/24) STREETScape DESIGN II**

Contact me if you are having issues with your midterm/ final paper topic!

If you haven't ordered the textbooks by now, please do so!

Please bring dimensions of your neighborhood survey area and exactly 6 photos that show well the challenges and opportunities facing your street.

### Readings

Governing Magazine, October 2005, Rethinking the Urban Speedway.  
[http://livablestreets.info/files/governing\\_oct2005\\_engineeringspeed.pdf](http://livablestreets.info/files/governing_oct2005_engineeringspeed.pdf)

Dumbaugh, Eric. 2005. Safe Streets Livable Streets. Journal of the American Planning Association. Vol 71(3) pp 283-300

Highway Safety Information System (HSIS), Evaluation of Lane Reduction "Road Diet" Measures and their Effects on Crashes and Injuries.

Massachusetts Highway Department; Street Design Manual, Chapter 16 Traffic Calming. Read through 16-7 and skim the rest.

ITE: Context Sensitive Solutions: pp 131-132 (Stop at heading "Access Management") & 137-138 From "Recommended Practice" up to "Medians" and 145-147 On Street Parking.

Disappearing Traffic? The Story So Far: Skim this article for data on traffic reductions:

<http://contextsensitivesolutions.org/content/reading/disappearing-traffic/resources/disappearing-traffic/>

Federal Highway Administration; Flexibility in Highway Design; Skim chapters 2-6 paying particular attention to chapters 3-4.

<http://www.fhwa.dot.gov/environment/flex/index.htm>

Levels of Service and Travel Projections: The Wrong Tools for Planning Our Streets? By Gary Toth for PPS:

<http://www.pps.org/blog/levels-of-service-and-travel-projections-the-wrong->

tools-for-planning-our-streets/

Other Resources (Optional Reading): Congress of New Urbanism Sustainable Street Network Principles:

[http://issuu.com/newurbanism/docs/sustainable\\_street\\_network\\_principles\\_o\\_p](http://issuu.com/newurbanism/docs/sustainable_street_network_principles_o_p)

Abu Dhabi Street Design Manual:

<http://www.upc.gov.ae/guidelines/urban-street-design-manual.aspx?lang=en-US>

## **Class 5 (10/1) BICYCLE PLANNING**

Your final project outline/ proposal is due today!

Your midterm is due in two weeks.

An overview of the politics of bicycle advocacy

Guest Speaker: Phil Goff, Alta Planning & Design

Technical Skills-- Analyzing a section of street and intersection to design bicycle accommodations

### Readings

Watch this video:

<http://www.streetfilms.org/from-the-netherlands-to-america-translating-the-worlds-best-bikeway-designs/>

City Cycling, John Pucher & Ralph Buehler. Read through chapter 11, skipping chapters 5, 8 and 9. Pay particular attention to chapters 2, 4 and 6. Do not write in this book if you intend to sell it back to me at the end of class.

Bicycling and Walking in the US 2012 Benchmarking Report, Alliance for Biking and Walking. Skim executive summary and tables.

NACTO Bikeway Design Guide:

<http://nacto.org/cities-for-cycling/design-guide/>

Read carefully the guidances on bikelanes and intersections including all of the sub-tabs

Skim: Fundamentals of Bicycle Boulevard Planning and Design/ Alta Planning:

<http://www.ibpi.usp.pdx.edu/media/BicycleBoulevardGuidebook.pdf>

Other resources for future reference:

FHWA "University Course on Bicycle and Pedestrian Transportation",

<http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/>

In the guide read only section 3.6 (bike section)

MUTCD Shared Lane Markings Guidance:

<http://members.cox.net/ncutcdbtc/sls/slmtncjan07.pdf>

MUTCD: What is permitted currently for bike facilities by FHWA:

[http://www.fhwa.dot.gov/environment/bikeped/mutcd\\_bike.htm](http://www.fhwa.dot.gov/environment/bikeped/mutcd_bike.htm)

Cambridge Massachusetts Bicycle Parking Guidelines:

[http://www.cambridgema.gov/CityOfCambridge\\_Content/documents/tpat\\_Bike\\_ParkingBrochure.pdf](http://www.cambridgema.gov/CityOfCambridge_Content/documents/tpat_Bike_ParkingBrochure.pdf)

How Pavement Markings Influence Bicycle and Motor Vehicle Positioning: A Case Study in Cambridge Ma. Excellent paper on how bike lanes make bicycling safer:

[http://www2.cambridgema.gov/cdd/et/bike/bike\\_hamp\\_study.pdf](http://www2.cambridgema.gov/cdd/et/bike/bike_hamp_study.pdf)

Evaluation of Shared Lane Markings FHWA, December 2010

November 2011 Boston Bicycle Plan Presentation: On Blackboard

Alliance for biking & walking: <http://www.peoplepoweredmovement.org/site/>

## **Class 6 (10/8) TRANSIT PLANNING I**

Good news: No class next week! BUT, your midterm is due 10/15!

Basic Principals of Transit Planning

Reading

Human Transit/ How Clearer Thinking About Public Transit Can Enrich Our Communities and Our Lives. Finish the book!

Resource: While Jarrett Walker's book is accessible, transit has a lot of specific terminology. When doing your reading reference this glossary as needed: <http://www4.uwm.edu/cuts/utp/glossary.pdf>

## **Classes 7 (10/22) Transit Planning II**

Bus Rapid Transit

Speaker: Erik Scheier, Project Director, MBTA Key Routes Study

Readings

Peruse the Embarq website with special attention to the Bus Rapid Transit sections: <http://www.embarq.org/en/node/28>

ITDP Recapturing Global Leadership in Bus Rapid Transit, May 2011: Read through the end of Chapter 2. Skim the rest, but read carefully the critique of Boston on Page 46.

Quantifying the Importance of Image and Perception to Bus Rapid Transit,

National Bus Rapid Transit Institute. Read executive summary and conclusions carefully and skim the rest of the document. Pay careful attention to all tables & exhibits.

<http://www.humantransit.org/2011/07/los-angeles-gensler-architects-attack-citys-transit-future.html> Check out the video and carefully read the critique.

Notes on Pushkarev and Zupan, Public Transportation and Land Use Policy, David Pritchard Bibliography,  
<http://davidpritchard.org/sustrans/PusZup77/index.html>

### Supplemental BRT Resources

BRT in Developing Countries:  
[http://www.itdp.org/index.php/program\\_areas/detail/developing\\_high\\_quality\\_low\\_cost\\_mass\\_transit/](http://www.itdp.org/index.php/program_areas/detail/developing_high_quality_low_cost_mass_transit/)

Bus Rapid Transit Policy Center: <http://www.gobrt.org/>

FHWA BRT Guide:  
[http://www.fta.dot.gov/documents/2009\\_CBRT\\_book\\_low.pdf](http://www.fta.dot.gov/documents/2009_CBRT_book_low.pdf)

Institute for Transportation & Development Policy: <http://www.itdp.org/>

## **Class 8 (10/29) Jitneys and Gypsy Cabs**

The informal transportation sector in the US and Developing Countries

### Readings

Nicole Stelle Garnett, The Road from Welfare to Work: Skim up to page 198. Read pp's 198 -229

Read Chapters 1,8 & 9: Robert Cervero, Informal Transport in the Developing World:  
[http://books.google.com/books?id=\\_4z7AI6XuH8C&printsec=frontcover](http://books.google.com/books?id=_4z7AI6XuH8C&printsec=frontcover)

## **Classes 9 (11/5) TECHNIQUES FOR REDUCING AUTO-DEPENDENCE**

Parking & Transportation Demand Management

Speaker: TBA

### Readings

Seattle Best Practices in TDM, read through the end of section 7-E.

Donald Shoup: High Cost of Free Parking (PDF on Trunk)

Donald Shoup: Cruising article (PDF on Trunk)

Todd Litman, Parking Management Strategies, Evaluation and Planning: Read pages 7 & 8 (Paradigm Shift), Skim carefully pages 12-24.

Planning Advisory Service; Carsharing: A Guide for Local Planners

Look over zipcar.com and getaround.com

## **Class 10 (11/12)**

### **Managing Car Proliferation/ Congestion Pricing**

#### READINGS

Congestion Pricing Primer/ FHWA-- Read pages 1 - 12 and skim the rest.

Equity Impacts of Congestion Pricing-- Read pages 6 - 9 and skim the rest:  
<http://www.ops.fhwa.dot.gov/publications/fhwahop08040/fhwahop08040.pdf>

Shobhakar Dhakal, April 2004, Appendix A: , Urban Transportation and Environmental Management in Singapore

Key abbreviations in Singapore Article as they are not immediately apparent--  
ARF: Additional Registration Fee (essentially a tax you pay when you license your car)

ALS: Area Licensing System (pay to enter an area of the city)

ERP: Electronic Road Pricing

MRT: Subway system

"Green" Taxes and Fees: A Survey of Californians-- Read Executive Summary and Conclusions/ skim the rest.

Todd Litman, London Congestion Pricing: Implications for Other Cities

San Francisco Congestion Pricing Planning Efforts-- Be sure to watch the video:

<http://www.sfcta.org/content/view/302/148/>

The Political Calculus of Congestion Pricing, 9/17/2007, UCLA/ Forthcoming in Access: David King, Michael Manville, and Donald Shoup

Optional Reading:

Technologies to enable Congestion Pricing (Skim this article: has some good nuggets):

<http://www.ops.fhwa.dot.gov/publications/fhwahop08042/fhwahop08042.pdf>

Environmental Defense Fund: Congestion pricing and other car-taming measures--<http://www.edf.org/transportation/policy/solutions>

## **Class 11 (11/19) SOCIAL JUSTICE & TRANSPORTATION**

Environmental Justice and Transportation:

- Public participation by EJ communities
- Negative impacts of transportation on EJ communities

- Poor service to EJ communities

Guest Speaker: TBA

### Readings/ Class preparation

To prepare for class: You need to come up with three examples of environmental justice issues that you know about or have seen. In thinking about this (or in your research) consider this basic definition of EJ in transportation:

### Readings

FHA Website read through this:

<http://www.fhwa.dot.gov/environment/ej2000.htm>

Baltimore MPO Website:

<http://www.baltometro.org/transportation-planning/environmental-justice>

Racial Segregation and Transportation Justice in an Urban Community: The Case of the Boston T Riders Union, Russ Lopez, 2005. (on Trunk)

Watch the video dying on Bartlett Avenue: <http://vimeo.com/8356035>

Delhi BRT/ Article in NYT:

<http://india.blogs.nytimes.com/2012/10/26/a-developed-country-is-one-in-which-rich-people-use-public-transport/>

Look over Los Angeles Bus Rider's Union website:

<http://www.thestrategycenter.org/project/bus-riders-union>

## **CLASS 12 (11/26) TRANSPORTATION FUNDING & MPO Process**

Understanding the Federal/ State/ MPO funding process and funding categories-- getting the green for your projects

### Readings

Boston Globe: MBTA Board Okays Fare Hikes:

[http://articles.boston.com/2012-04-04/metro/31292889\\_1\\_fare-hikes-board-member-transportation-funding-crisis](http://articles.boston.com/2012-04-04/metro/31292889_1_fare-hikes-board-member-transportation-funding-crisis)

T4MA Maxed Out Report (Trunk)

Born Broke; Brian Kane; Read whole thing except for section III (National Context) which you should skim (Trunk)

Aloisi piece in Commonwealth Magazine:

<http://www.commonwealthmagazine.org/Voices/Perspective/Online-Exclusives-2012/Winter/021-There-are-answers-to-T-funding-crisis.aspx>

Boston Globe: Tax Hike on Table for Roads and Transit:

<http://www.bostonglobe.com/metro/2012/11/17/patrick-poised-call-for-transp-ortation-tax-hike/8bcNIFw0dP3lTI4bOIB9IM/story.html>

MBTA Route subsidies by Unlinked Trip (TRUNK)

Boston MPO Brochure: Be Informed Be Involved:  
[http://www.bostonmpo.org/bostonmpo/4\\_resources/1\\_reports/1\\_studies/4\\_bicycle/be\\_informed.pdf](http://www.bostonmpo.org/bostonmpo/4_resources/1_reports/1_studies/4_bicycle/be_informed.pdf)

Boston MPO TIP Program Web Page: Review the links in the main body of this page [http://www.bostonmpo.org/bostonmpo/3\\_programs/2\\_tip/tip.html](http://www.bostonmpo.org/bostonmpo/3_programs/2_tip/tip.html)

Transportation Improvement Program 2010- 2013:  
[http://www.ctps.org/bostonmpo/3\\_programs/2\\_tip/FFYs\\_2012\\_2015\\_Final\\_TIP.pdf](http://www.ctps.org/bostonmpo/3_programs/2_tip/FFYs_2012_2015_Final_TIP.pdf)

Read the executive summary and skim the rest of this document: UPWP  
[http://www.ctps.org/bostonmpo/3\\_programs/3\\_upwp/FFY\\_2012\\_UPWP.pdf](http://www.ctps.org/bostonmpo/3_programs/3_upwp/FFY_2012_UPWP.pdf)

## **CLASS 13 (12/3) PRESENTATIONS**

Student Presentations

Final paper due Friday after this class

### Readings

Read Presentation tips on Trunk!

**CLASS PARTY: TBA**