

WWS 527a
Transportation Policy Analysis and Systems Planning

Fall 2009/2010

Course Description

Part 1. Perspective on the Transportation Sector of the Economy: Its Function, Its Players, Its Technologies, Its Policies, Its Information Sources

Week 1

Tue Sep 22 7:00-8:25

Introduction and Survey of Course

Elements of the transportation sector of the economy, the player, the technologies, the information sources

Reading: Basic background on Transportation in the US:

http://www.bts.gov/publications/pocket_guide_to_transportation/2009/pdf/entire.pdf

Trends in Personal Income and Travel miles:

http://www.bts.gov/publications/bts_special_report/2007_10_03/pdf/entire.pdf

Energy Flow Diagram: http://www.eia.doe.gov/emeu/aer/pdf/pages/sec1_3.pdf

National Transportation Statistics:

http://www.bts.gov/publications/national_transportation_statistics/2008/pdf/entire.pdf

[Recent Traffic Volume Trends](#)

[Highway Statistics Publication Archive](#)

Tue Sep 22 8:35-10:00

Historical evolution of National Transportation Policy

Readings: Coyle Ch. 1-4, pp. 2-129 (passed out); [Brief History of US DOT](#)

Homework 1: [The Last Drop](#)

Class Notes: [Week 1](#)

Week 2

Tue Sep 29 7:00-8:25

Current National Transportation Policy and the FY09Budget Proposal for Transportation; [Highway taxes](#); [Tax Data](#); NYT piece by Tom Friedman: [“Real Men Tax Gas”](#) [Central Jersey Rapid Transit Project](#)

Homework 2: [The Value of a Life](#), Due Sun. Oct 4.

Reading: [FY2009 Federal Budget](#) ; [FY2009 Federal Transportation Budget](#); The Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), governs fiscal years 2004 through 2009. [The legislation](#) For 2005 to 2009, highway spending limits total \$189.48 billion, and public transportation funding totals \$45.31 billion. Public transportation spending equals 18.5 percent of the bill's overall funding. [Summary of Highway provisions](#)

Tue Sep 29 8:35-10:00

Big Picture view of Transportation in the next 20-25 years ([be prepared to discuss!](#))

The Private Sector side of Transportation. Carriers, shippers 3rd party logistics, and other service providers

Background reference: links to trucking industry: Trucking/Carriers: <http://www.truckline.com/>,

<http://etrucker.com>, <http://www.truckinginfo.com/>, <http://truklink.com/>, <http://www.truckload.org/>

Logistics/Shipper: <http://www.logisticsmgmt.com>, <http://www.totalsupplychain.com>,

<http://www.trafficworld.com/>, <http://inboundlogistics.com/index.shtml>,

<http://www.pcmiler.com/news/industry/default.html>

Part 2. Planning and Analysis Tools of Transportation Demand and Investment

Week 3

Tue Oct 6 7:00-8:25

Development of a Formal Urban Transportation Planning (UTP) Process & Decision Making: The Central Jersey Transit Study ; Alternatives Analysis: Goals, Objectives, Metropolitan Planning Processes

Ref.: [Class Notes](#) [Planning Charts](#)

Background reference: Ed Weiner, [Urban Transportation Planning In the United States: An Historical Overview: Fifth Edition](#) especially Ch 3 [3-C Urban Travel Forecasting Process](#), Ch 5 [Continuing Transportation Planning](#) ; Ch 10 [ITE trip Generation Report](#) Ch 13, especially: [Met and Statewide Planning Regs](#) , [Transportation Management Systems](#).

Tue Oct 6 8:35-10:00

Urban Travel & Transportation System Characteristics: Planning Studies and Methods: Travel Demand Surveys, Data Sources, Intro to Sequential Demand Forecasting Modeling Approaches

Background & Data Reference: [TCRP B-15 Characteristics of Urban Travel](#) see especially: [Overall Trip Rates](#)

Homework #3 [My City](#). Examples: [MyCityEx1](#), [MyCityEx2](#) [CityOfEden](#), [CofEReport](#) Due: Before class on: Tues Oct 13 & Tue Oct 20.

Week 4

Tue Oct 13 7:00-8:25

Relating the demand for transportation with Land Use: Trip generation

Ref.: Puget Sound Study, Broad, New York Met Area Study, North Carolina Study , (see Notes for links) Travel Modeling [Urban Goods Movement Model UGMM](#) ;

Class Notes [Notes](#)

Tue Oct 13 8:35-10:00

Relating the demand for transportation with Land Use: Trip distribution.:

Assignment: Land Use of My City Due

Ref.: [The Gravity Model](#), [Example of Trip Distribution Model](#) ;

Class Notes [Notes](#)

Week 5

Tue Oct 20 7:00-8:25

Modeling Trip Distribution and Mode Split for State-wide transit system

Assignment:

Ref.: Class Notes [Class Notes](#),

Tue Oct 20 8:35-10:00

More on Trip Distribution, Mode Split and My City

Assignment: Trip generation and trip distribution of My City Due Wed Oct 22.

Readings:

Week 6

Tue Oct 27 7:00-8:25

Paths through networks; Network Analysis: Shortest Paths: Label Setting and Label Correcting, Shortest paths in Real Networks and Essentially Shortest Paths

Readings: Magnanti: Ch.2 & 4. (To be distributed) **Homework #4** [Final Report for My City](#) (Due Monday Nov 2)

Ref.: [Class Notes](#)

Tue Oct 27 8:35-10:00

More on Networks: Label Setting Dijkstra's Algorithm

Readings: [DykstraApplet](#)

Term Break Oct 31- Nov 8

Part 3 The Role of High Technology in Transportation

Week 7

Tue Nov 7 7:00-8:25

Summary discussions on My City urban design and transportation demand implications. Begin discussions of the Supply Side of transportation and the role of technology starting with information technology (having individuals make better decisions) then evolving to systems technology.

Readings:

Tue Nov 7 8:35-10:00

Intelligent Transportation Systems (ITS): Advanced Traveler Information Systems (ATIS):

In-vehicle Satellite Navigation: From TravTek to Navigation Based Services; Global Positioning Systems (GPS)

Readings: 511 Traffic <http://www.trafficland.com/>; Bay Area South Florida ; Virginia Tampa Bay ;

Minnesota Georgia Traffic.com ; Real-time ATIS <http://www.photoenforced.com/us.html>;

<http://www.cameralert.com/>

Assignment: [Next Steps in “Advanced Traveler Information Systems”](#)

Week 8

Tue Nov 14 7:00-10:00

Toward Real-Time Dynamic Minimum Estimated Time of Arrival turn-by-turn route guidance

Readings: [Demers, A.](#), et al “Competing With the Ghost of ADVANCE: Experimenting with Real-Time ATIS”,

Fontaine, M.D., et al, “Wireless Location Technology-Based Traffic Monitoring” Transportation Research Record No. 1993, 2007, pp. 51-58, **Class [Notes](#)**

Part 4 Current High Profile Transportation Policy & Planning Issues

Week 9

Tue Nov 24 7:00-10:00

Personal Rapid Transit, “Transport System of the Future???” History of PRT. A Look at “Radical” Transit Alternatives: Supply Role of Automation in Public Transportation Systems; Recent Developments in Automated People Movers and Personal Rapid Transit Systems. Study of the Newark Airport and Anderson’s Taxi 2000

Readings: [NJ PRT Legislative Study](#); [NJ PRT Legislative Exec Presentation](#), NJ PRT [Academic Look](#), [Jerry Schneider’s Source Page](#), [Skyweb Express \(aka Taxi2000\)](#), [Jerry Schneider U of Washington PRT](#)

More Links on PRT: Uppsala [Conference](#); Daventry [Conference](#), Vectus [PRTign](#): [PRT concept for Msft campus](#); [HeathrowVideo](#); [Korean PRT Animation](#); [Morgantown PRT](#); [Ride Morgantown](#); [Morgantown Summary](#) video

Ref.: [Class Notes](#) [PODCAR papers](#) [Evolution of Transportation Technology Slides](#)

Part 4 Current High Profile Transportation Policy & Planning Issues

Week 10

Tue Dec 1 7:00-10:00 Regional Plan Association's transit plans for the MYC region..

Readings: [Tomorrow's Transit, New Mobility for the Region's Urban Core](#)

Ref.: [Notes](#)

“Value Pricing”, other pricing policies in transportation.

Readings: [Fehlig, M, Kornhauser, A. “Marketable Permits for Peak Hour Congestion on Rt 1”](#)

RPA [Congestion Charging & Technology, 2007](#)

Zupan, J and A. Perrotta “[An Exploration of Motor Vehicle Congestion Pricing in NY](#)” [Regional plan Assoc., 2003](#)

Ref.: [Class Notes](#)

The London Congestion Zone and “Paying for Access” and prospects for the Manhattan Congestion Zone

Readings: [London Congestion Zone](#)

Week 12

Tue Dec15 7:00-8:25

“Privatizing the Cash Cow (aka New Jersey Turnpike)” & Financing Transit In NY Metropolitan area.

Readings: Derrick Leung'08 Senior Thesis: “[Unyoking the Cash Cow, Who Should Own the New Jersey Turnpike?](#)”

New Toll Proposal for East River Bridges: [Ravitch](#) and [NYT](#)

Tue Dec 15 8:35-10:00

Individual presentations of Progress with Final Project.

“Washington Walk” Burying [Washington Rd](#). Msft Virtual Earth: [Harvard Sq Tunnel](#): Park Ave NYC @ [34th St](#)

Reading Period 11:00 am - 1:00pm Thursday Jan 14, Final Workshop on Term Project; Lunch will be served. Schedule

Tertiary