

# URBP 178 / 226

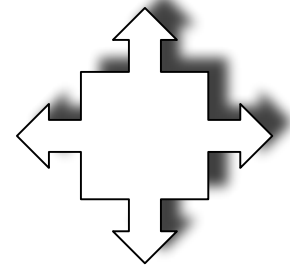
## TRANSPORTATION & URBAN PLANNING: AN INTRODUCTION & OVERVIEW

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 Class Meetings: Tuesdays, 7:15 - 10 pm, Boccardo Business Complex 323

**TEXTBOOK:** Susan Hanson and Genevieve Giuliano, Eds. *The Geography of Urban Transportation* (New York: Guilford Publications, 3<sup>rd</sup> Ed., 2004).

**Other Readings:** will be provided in class, most on the first day

### COURSE AIMS AND OBJECTIVES



This course examines planning for transportation systems and policy, with particular regard to urban and regional transportation. We will consider both theory and practice, as well as the wide gap between them. The historical evolution and development of key transportation institutions, policies, and methods are analyzed, using examples from California and beyond. The many roles of transportation planning – technical, mediating, advocacy, and political – are examined. Passenger and urban transportation planning and policy are emphasized, but there will be some attention given to intercity and freight modes. Many sessions and readings are devoted to understanding current transportation planning issues and policy debates.

This course is intended to help prepare students for work as a transportation planner or a transportation policy analyst. There are a growing number of such positions with local, regional, and central governments, private consulting firms as well as with firms providing transportation services. This course alone will not, however, prepare students for more

specialist transportation positions such as computer modeler or traffic engineer. For students interested in working in such specialist positions, additional course work would be required.



## COURSE SUBJECT MATTER

The main subject areas of this course include:

- Elements of transportation systems: vehicles, networks, controls – and users
- The nature of demand for travel and transportation
- History of transportation planning and institutions
- History of street and highway systems
- Dimensions of travel and the transportation sector
- Current travel and freight transportation trends
- The problem of congestion
- Patterns of travel behavior: the peaking problem
- Overview of transportation modeling and forecasting
- Critical analysis of transportation modeling and forecasting
- Transportation and environmental impact analyses
- Travel demand, land use and urban design
- Transportation Plans: National, Regional and Local
- Planning and financing street and highway systems
- Planning and financing public transportation
- Planning and financing other modes
- Transportation planning and emerging technologies
- Current issues in transportation policy

## REQUIREMENTS AND GRADING



There are no formal prerequisites for the course, other than upper-division or graduate standing. Prior course work in urban geography and/or urban economics would be helpful, as would knowledge of urban or transportation history. Knowledge of basic mathematics (statistics, algebra, and geometry) is assumed.

There are five major graded components of the course

- 1) Assignment 1 – Tracking Travel Behavior (15%)
- 2) Lecture attendance and especially class discussion & participation (10%).
- 3) Mid-term Exam (25%)
- 4) A group project and presentation with an individual topic outline (15%)
- 5) A final research paper (15-20 pages) (35%)

The lectures will **not** cover all of the material in the reading, so it is essential that you keep up with the required reading. Most of the required readings have been assembled into a reader available from the instructor. For the group project and the research paper you will need to seek out additional readings, and provide copies of key readings to your colleagues. We will provide assistance with these tasks.

Late work will be marked down.

### DISABILITIES

If you have a disability and need special accommodations, please see me at the beginning of the semester so that we can work out a plan that allows you to complete the class successfully.

# DISCUSSION TOPICS — TENTATIVE SCHEDULE



## A BRIEF OVERVIEW - AUGUST 28

**Introductions:** Instructors and Students  
 Orientation, Review of University & Department Policy  
 Overview of Structure and Major Themes of the Course  
**Hand out:** Syllabus and Assignment 1, Readings CD (“R-CD”)

## A DEEPER OVERVIEW – SEPTEMBER 4

(Readings: 1. TEXT, Preface; 2. R-CD: “Introduction & Overview” section).

- TOPIC 1.** Key Concepts of Transportation Planning
- Theories, processes and structures underlying passenger and freight transportation demand and supply.
- TOPIC 2.** Principles and Processes of *Planning* Applied to Transport
- A) Planning Public Policy and the Public Interest
  - B) Planning, Development and Transport
- TOPIC 3.** Transport-Related Areas of Regulation and Policy
- Transportation Economics
  - Land Use and Urban Development; Travel and Tourism; Trade and Commerce; Communications; Energy; and the Environment
  - Public vs. Private Transportation
    - Costs and Benefits – and whose are they?
- TOPIC 4.** Unifying Concepts in Urban Transportation Planning:  
*Accessibility* versus *Mobility*

## **HISTORY AND CURRENT POLICY – SEPTEMBER 11**

- (Readings: 1. TEXT, Chapter 3: Muller, Peter O. 2004. "Transportation and Urban Form: Stages in the Spatial Evolution of the American Metropolis.  
2. CD-R: "Urban Transport History" section.

**TOPIC 5.** The History of Urban Transportation & Transportation Planning Institutions

## **CURRENT TRENDS AND THE POLICY DILEMMAS THEY POSE – SEPTEMBER 18**

- (Readings: 1) "TEXT, Chapter 1, Hanson, Susan. 2004. "The Context of Urban Travel: Concepts and Recent Trends."  
2) *Skim*: Bureau of Transportation Statistics. "Pocket Guide to Transportation" www.bts.gov.

**TOPIC 6.** Trends in Urban Travel

**TOPIC 7.** Demographic and Lifestyle Factors and Urban Travel Behavior

## **SAN JOSE / BAY AREA TRANSPORTATION PLANNING ISSUES --SEPTEMBER 25**

(Readings: to be announced)

**Guest Lecturers:** To be announced

**TOPIC 8.** Transportation Projects and Changing Travel Behavior in Silicon Valley

## **TRAVEL DEMAND MODELING AND FORECASTING I -- OCTOBER 2**

- (**Readings:** TEXT, Johnston, R. 2004. "The Urban Transportation Planning Process," The Geography of Urban Transportation 2) CD-R: *Travel Demand Modeling and Forecasting* section of Reader

**TOPIC 9.** Transportation System Supply: Facility and System Capacity

**TOPIC 10.** Introduction to Travel Demand Modeling and Forecasting

**TRAVEL DEMAND MODELING AND FORECASTING II – OCTOBER 9**

(NOTE: Readings to be announced for Topics 11 – 18; will mainly be from the TEXT)

**TOPIC 11.** Aggregate versus Disaggregate Travel Demand Modeling and Analysis

**TOPIC 12.** Critiques of Travel Demand Modeling: The State of the Art

**COPING WITH URBAN TRANSPORTATION CONGESTION AND IMPACTS:  
ALTERNATIVE VIEWS, ALTERNATIVE SOLUTIONS – OCTOBER 16**

**TOPIC 13.** Transportation-related Environmental Impacts

**TRANSPORTATION FINANCE – OCTOBER 23**

**TOPIC 14.** Transportation Finance – who pays? Who should pay?

**TRANSPORTATION PLANS – OCTOBER 30**

**TOPIC 15.** Transportation Plans: National, Regional and Local: Overview

**MID-TERM BY E-MAIL: OUT 6 PM NOVEMBER 6 DUE 9 PM NOVEMBER 7**

***\*\*\*STUDENT PRESENTATIONS – NOVEMBER 13, & NOVEMBER 20\*\*\****

**TRANSPORTATION & THE FUTURE! – NOVEMBER 27**

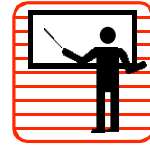
**TOPIC 16.** The Transportation Disadvantaged: Shrinking Fringe or Growing Majority?

**TOPIC 17.** Transportation and Communications Technology – The 3-Edged Sword

**TOPIC 18.** Transportation and Sustainability: From Global to Local and Back

**DECEMBER 4 – CLASS WRAP-UP & FINAL PAPER TURN IN -- NO READING**

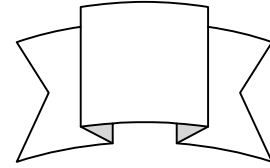
## SEMINAR STRUCTURE AND REQUIREMENTS



The final month of the course will be largely devoted to student-led seminars on major transportation planning issues and policy debates facing transportation planners today. Each session will cover a specific topic with a presentation followed by a group discussion. Transportation planners and policy-analysts commonly present their work in public meetings and hearings; these sessions are intended to give you experience in presenting complex policy issues in a small, informal forum. The schedule and requirements for this aspect of the course are as follows:

- 1 By Week 2 we will divide into “interest groups” of two to four students each.
- 2 By Week 3 groups should meet with us to discuss your topic and readings.
- 3 Not later than the Sunday before you present, each group should distribute a 3-5-page summary of your topic to all students in the class, plus one or two key readings (e.g., articles/chapters
- 4 On the appointed day, you will informally present your topic with your group to the other students in the class and help lead the discussion that follows. Sessions will run 15 minutes each (per person), with approximately 15 minutes devoted to discussion after each group concludes. Each student should also turn a one to two page summary of a specific aspect of the group topic, which they will develop into an individual research report
- 5 By December 4 (last day of class), a 15 to 20-page report (entailing a critical review of relevant literature and a policy analysis with recommendations for specific transportation planners or policy makers) must be delivered to the instructors. This report will allow you to synthesize and extend knowledge gained in the group project, focusing on an area of particular interest to you. The report should not require a great deal of additional research beyond your presentation preparation, but should respond to individual comments on your presentation.

## **POSSIBLE SUBJECT AREAS FOR PRESENTATIONS & PAPERS**



The broad subject areas you will be able to choose from include the following:

1. Sustainability and Transportation
2. Improving Access at San José State and its Environs.
3. Policy Analysis of Gender, Aging and Other Demographic Transportation Issues
4. Analysis of the Prospects for Public Transportation in California and Its Cities
5. Policy Analysis of Road and Parking Pricing Options
6. Getting More From Less: Management of Transportation Systems & Travel Demand
7. Land Use and Urban Form Policy in Relation to Travel Demand
8. The Future of the Automobile
9. The Future of Public Transit
10. Transportation and the Environment: Internalizing the Externalities
11. Transportation and the Environment: The Greenway Concept
12. Telecommunications and Transportation
13. Other Subject Areas by Mutual Agreement.
14. The Regional Transportation Plan in the Bay Area

## GUIDE TO THE READINGS



The sections of the Basic Readings cover, respectively: key analytic concepts; a bit of urban transportation history; and some key transportation concepts. With the third section we move into readings on travel demand modeling and forecasting, the (somewhat mechanical) heart of traditional urban transportation planning. This will serve as basis for discussions how analysts (typically engineers) use traffic forecasts to estimate traffic impacts, in terms of effects on roadway capacity and operations (congestion impacts) and on the larger environment (environmental externalities). Upon completion of these readings we will be “fluent” in transportation, and ready to begin our in-depth discussions of current transportation policy and planning initiatives at the national, regional and local levels.

Our main focus throughout the course is on urban transportation policy and planning for several reasons. One-half of humanity now lives in cities, a remarkable development given that the urban population was never more than a tenth of the world’s population before the 19th century. Suddenly urban transportation is a personal concern of most of humanity.

Moreover, the overriding economic rationale of cities is that they save transportation costs – in urban areas, complementary economic actors and resources are within close proximity to one another. Not surprisingly then, cities are the predominant location of congestion on transportation networks, as too many people, goods and vehicles attempt to be in one place at one time for economic purposes. The most expensive and contentious transportation investments are those that serve urban areas.

Before some commentary on individual readings, a few basic definitions:

**Transportation** is a mediating process. It brings people and goods together for beneficial results. Demand for transportation is thus a *derived* demand; transportation is not generally desired for its own sake, but because it brings us (or brings us to) something desirable. The journey to work is not a good in itself, but it enables us to make a living, and that is the primary good. Bananas, not banana boats, are what people crave. Springtime in Paris is what is valuable and memorable; the Boeing 747 is merely a convenient means to that end.

- **Travel demand** is the desire for travel or transport; it is not necessarily fulfilled or expressed. When it is expressed via use of a transportation system, it is called **traffic**.
- The basic elements of any transportation system include: (first and foremost) **users/customers** demanding transportation for themselves or their goods; and, on the supply side, **vehicles, routes** and **controls**.
- **Planning** is the reasoned application of available knowledge and tools to shape the future. Urban planning is concerned with planning for relatively dense settled areas (cities and dependent suburban and ex-urban areas), which are the locus of the majority of population and economic activities in both developed and developing societies.
- **Policy** consists of laws, rules and guidelines designed to ensure that the defined goals of an organization (public or private) or society as a whole are realized. **Policy Analysis** is bringing knowledge – which can take many forms – to bear in the process of policy making.

\* \* \*

We have just defined transportation as a derived demand, rather than something desired for its own sake. We must immediately qualify this definition. Most transportation models and analyses assume transportation to be a bundle of costs (time, money, discomfort, etc.) to be avoided or minimized in pursuit of goods and activities at the destination. And for most routine types of transport, this is valid.

Yet travel is not always onerous. The concept of a holiday, a positive experience we willingly pay for – handsomely – has become partly synonymous with travel (“getting away”). Certainly, those marketing a travel mode or service regularly stress the intrinsic value of the trip itself (along with the allure of the destination, of course). There is something inherently appealing about travel and transportation technology, and this should be borne in mind throughout your reading and the course as a whole. There is pleasure in and romance about transport. Such emotional aspects can complicate, even undermine transportation analysis, but for these very reasons they should not be forgotten or denied. Indeed, making transportation pleasurable is one of the key goals of transportation planning.

## NOTES ON INDIVIDUAL BACKGROUND READINGS

### *Introduction and Overview Section*

**Thomson, J.M. 1974. *Modern Transportation Economics*. Chapter One: Desire for Movement. Penguin Books. pp. 15-36.**

Basic reasons for why people travel and transportation goods; key concepts of transportation economics, including both freight and passenger transport.

**Hanson, S. 1995. *The Geography of Urban Transportation* (Susan Hanson, ed.), 2<sup>nd</sup> Edition. Chapter One: Getting There – Urban Transportation in Context. The Guildford Press. pp. 3-25.**

Key Concepts: Accessibility vs. Mobility  
 Aggregate versus Disaggregate Measures of Accessibility  
 Changing Urban Geography → Changing Urban Travel Demands

**Heilbrun, J. 1987. *Urban Economics and Public Policy – Third Edition*. Chapter 8: The Economics of Urban Transportation. St. Martins. pp. 173-206.**

Basic microeconomic principles applied to urban transport. Pay particular attention to Heilbrun's distinction between private and social costs of transportation (and transportation congestion). You should also gain an understanding of some major economic rationales for congestion pricing and public transportation subsidy, as well as the elements of intermodal cost comparisons and of cost-benefit analysis.

**Heilbrun, J. 1987. *Urban Economics and Public Policy – Third Edition*. Chapter 9: Urban Transportation Policy. St. Martins. pp. 107-138.**

A range of urban transportation policy proposals, derived from the preceding chapter's economic analysis, are presented and critiqued, using mainly US case studies. Pay particular attention to the arguments for, and difficulties with, two particular policy proposals: congestion tolls and subsidies for public transportation (or "transit" as public transportation is called in North America).

**Dunn, W.N. 1994. *Public Policy Analysis: An Introduction*. Chapter One: Introduction: Policy Analysis in the Policy-Making Process. Prentice Hall. pp. 1-29.**

The principles and elements of policy analysis: Dunn’s concept of “critical multiplism” – looking at policy problems from multiple angles – should be understood.

**Altshuler, A.A. 1979. *The Urban Transportation System*. Chapter Three: Politics and Innovation. The MIT Press, Inc. pp. 85-100.**

In an introductory chapter to a very influential book, Alan Altshuler outlines four categories of transportation innovation (which can be applied to either policy or technological innovations) in terms of acceptability and prospects for success, given a market economy and a representative democratic form of government. They are worth thinking about.

**Altshuler, A.A. 1979. *The Urban Transportation System*. Chapter Four: Criteria for System and Policy Innovation, The MIT Press, Inc. pp. 103-123.**

Here Altshuler outlines nineteen criteria for evaluating urban transportation system performance, as well as for evaluating strategies for improving urban transport.

### **Urban Transportation History Section**

Two readings to supplement your now semi-substantial understanding of transportation history, focusing in particular on the rise of the car as the dominant form of urban transport, and planners’ ongoing attempts resolve seemingly inherent conflicts between urbanity and the car culture.

**Brindle, R. 1995. *Transportation Technology and Urban Development, in Technological Change and the City*. The Federation Press, pp. 32-53.**

Not a historical piece *per se* but a concise overview of the complexities of understanding the interrelationships between urban transportation and land use. When

the means of mobility (other than walking) were few, we could expect deployment of new relatively high-speed, high-capacity transportation to significantly remold urban areas. Now with automobile ownership and use so ubiquitous, additional transportation infrastructure is not likely to have such a major influence – at least not by itself.

**Hall, P. 1990. *Cities of Tomorrow. Chapter Nine: The City on the Highway. Basil Blackwell. pp. 274-318.***

A particular (and particularly well written) historical overview of the effect of the automobile on the shape of cities throughout the world, including various urban designers' and real estate developers' attempts to come to terms with the car. The chapter underscores the role of the USA as a leader in accommodating the car – thus becoming first nation to experience the negative consequences of full motorization. This in turn led to freeway revolts and ongoing efforts to provide alternatives to the car.

**Travel Demand Modeling and Forecasting Section**

**Pas, E.I. 1995. *The Urban Transportation Planning Process, in Hanson, S. The Geography of Urban Transportation. The Guildford Press. pp. 53-77.***

An overview of the Urban Transportation Planning System centered a four-step mathematical modeling system as it emerged and developed in the USA. Pas describes how the modeling and planning process has – and has not – responded to changing imperatives and issues regarding transportation investments.

**Banister, D. 1994. *Transportation Planning in the UK, USA and Europe. Chapter Six: The Limitations of Transportation Planning. E & FN Spon. pp. 125-158.***

A cogent summary of the shortcomings of four-step modeling and planning processes built around such models, with a look towards promising developments for the future, such as stated preference and contingent valuation surveys and models.

**\*\*\*Papacostas, C.S. and Prevedouros, P.D. 1993. *Transportation Engineering and Planning*. Chapter Eight: Sequential Demand-Forecasting Models. Prentice Hall, NJ. pp. 309-411.**

A detailed account of classical four-step travel demand modeling, which is still central to most metropolitan transportation planning processes. The authors' many detailed examples should make these common transportation modeling procedures a bit less opaque for you (though perhaps not completely transparent). To enhance your understanding, work through some of the examples in the text and some of the problems at the end of the chapter.

**\*\*\*to be distributed upon request to interested students**

## **Other Readings Distributed during the Semester**

### **Transportation Modeling**

**Beimborn, E.A., R. Kennedy, R., and William Schaefer, n.d., *A Transportation Modeling Primer* Center for Urban Transportation Studies, University of Wisconsin-Milwaukee/Citizens for a Better Environment.**

This document has been incorporated into a book "Inside the Blackbox, Making Transportation Models Work for Livable Communities." It is available from the Citizens for a Better Environment at 414-271-7280 or by download (7.9 MB) from the Environmental Defense Fund; or call them at 202-387-3500 (public information office). The authors' stated intent for this primer is to explain how the urban transportation modeling process works, the assumptions made and the steps used to forecast travel demand for urban transportation planning in metropolitan areas. This is done both to explain the process and its implications and to help people to interpret and comment on its results. The primer is written in plain language so it can be used by local or regional planning commissioners, elected officials and interested citizens who have to react to transportation plans.

### **Readings on Transit and Highway Investments and Transportation Finance**

**Litman T. 2006. "Smart Congestion Reductions: Reevaluating the Role of Highway Expansion for Improving Urban Transportation"**

**[http://www.vtpi.org/cong\\_relief.pdf](http://www.vtpi.org/cong_relief.pdf)**

This paper evaluates claims that highway capacity expansion is a cost effective and desirable solution to urban traffic congestion problems. Litman identifies what he perceives as errors in proponents' analysis that overestimate the congestion reduction impacts and economic benefits of roadway capacity expansion, overlook negative impacts of induced travel, and ignore cost effective alternatives. (Summary based on author's abstract)

**Todd Litman T. 2006. "Smart Congestion Reductions II: Reevaluating the Role of Public Transit for Improving Urban Transportation"**  
**[http://www.vtpi.org/cong\\_reliefII.pdf](http://www.vtpi.org/cong_reliefII.pdf)**

Litman reviews several recent articles critical of urban transit investments on the grounds that they are ineffective at reducing traffic congestion and wasteful. This paper evaluates this criticism and investigates the role that public transit can play in reducing traffic congestion and achieving other transportation improvement objectives. (Summary based on author's abstract).

**Transportation Plans: National, Regional and Local: Overview**

**Lee, R.W., and Rivasplata, C.R. 2001. *Metropolitan Transportation Planning in the 1990s: Comparisons and Contrasts in New Zealand, Chile, and California.* Transport Policy 8, 47-61.**

This article reviews major events and trends in metropolitan transportation planning and policy in three quite different jurisdictions: New Zealand, Chile and California. Major metropolitan areas saw rising car ownership, congestion, and privatization of transportation services. There has also been devolution of planning authority and funding responsibility to metropolitan government. (Summary based on author's abstract)

## ACADEMIC INTEGRITY POLICY<sup>1</sup>

SJSU's Policy on Academic Integrity states: “Your own commitment to learning, as evidenced by your enrollment at San José State University, and the University’s Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Judicial Affairs. The policy on academic integrity can be found at [http://sa.sjsu.edu/student\\_conduct](http://sa.sjsu.edu/student_conduct).”

Plagiarism is the use of someone else’s language, images, data, or ideas without proper attribution. It is a very serious offense both in the university and in your professional work. In essence, plagiarism is both theft and lying: it is stealing someone else’s ideas, and then implying that they are one’s own.

**Plagiarism will lead to grade penalties and a record filed with the department chair. It may also result in your failing the course and/or having the incident permanently noted in your SJSU student records.**

**If you are unsure what constitutes plagiarism, it is your responsibility to make sure you clarify the issues *before* you hand in written work.**

Learning when to cite a source and when not to is an art, not a science. However, here are some examples of plagiarism that you should be careful to avoid:

- If you use a sentence (or even a part of a sentence) that someone else wrote and don’t reference the source, you have committed plagiarism.
- If you paraphrase somebody else’s theory or idea and don’t reference the source, you have committed plagiarism.
- If you use a picture or table from a web page or book and don’t reference the source, you have committed plagiarism.
- If your paper incorporates data someone else has collected and you don’t reference the source, you have committed plagiarism.

The University of Indiana has developed a very helpful website with concrete examples about proper paraphrasing and quotation. See in particular:

<http://www.indiana.edu/~istd/overview.html>

<http://www.indiana.edu/~istd/examples.html>

<http://education.indiana.edu/~frick/plagiarism/item1.html>

At the last page listed you will find a quiz to test how well you understand proper paraphrasing.

If you still have questions after reading these pages, feel free to talk to Dr. Lee or another faculty member personally. There is nothing wrong with asking for help, whereas even unintentional plagiarism is a serious offense.

If you have questions about the official SJSU policy on plagiarism, please read the “Policy on Academic Dishonesty” at <http://www2.sjsu.edu/senate/S04-12.htm>. In addition, the “Academic Dishonesty Procedures” are available in any SJSU Schedule of Classes.

## **RECOMMENDED CITATION STYLE**

When you do cite another author’s work in any of the written assignments, use footnotes and a bibliography following the “Turabian” style:

For print sources, follow the directions in Kate Turabian’s *A Manual for Writers of Term Papers, Theses, and Dissertations* (University of Chicago Press, 1996). Copies are available in the SJSU King library and in the main office of the Department of Urban and Regional Planning (WSH 216). Additionally, the book is relatively inexpensive, and you may wish to purchase a copy (there are often cheap, used copies available through on-line book sellers).

For electronic sources, follow the directions at Maurice Crouse’s page “Citing Electronic Information in History Papers” available at <http://history.memphis.edu/mcrouse/elcite.html>.

The page begins with a discussion of the theory behind good citation style, and then provides detailed examples of how to cite all sorts of sources. Be sure to follow the guidelines for Turabian-style citations.

Please note that Turabian’s book describes two systems for referencing materials: (1) footnotes or endnotes, plus a corresponding bibliography, and (2) in-text parenthetical references, plus a corresponding reference list. Be sure to use the footnote and bibliography system for all work you turn in during the semester.

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<sup>1</sup> These guidelines on avoiding plagiarism and the Department’s preferred citation style were developed by Professor Asha W. Agrawal; used with permission.