

**UNIVERSITY OF NEVADA, RENO
DEPARTMENT OF GEOGRAPY**

GEOG 4/657 Transportation and Land Use

P. ANTHONY BRINKMAN

SPRING TERM 2009

Class meets on Wednesday evenings from 5:30 until 8:15 in 321 Mackay Science Hall. Please make every effort to be punctual. While class absences do not directly affect your course grade, you are responsible for all the material covered in this course. Questions by individual students related to lectures and discussions missed in whole or part will receive the instructor's lowest priority. A detailed schedule of readings and assignments appears below.

INSTRUCTOR

P. Anthony Brinkman

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Please feel free to contact me for any reason. Electronic mail is the best way to reach me. I will try to respond within 24 hours. Do not, however, expect lengthy written replies from me. Office hours and telephone appointments are appropriate for more extended communication.

OFFICE HOURS

Office hours are on Monday evenings from 5:30 until 7:00 and Friday afternoons from 4:00 until 6:00. Subject to change. Other times are available by appointment.

TEXTS

Students in this course must have the following texts readily available throughout the semester.

Downs, Anthony. *Still Stuck in Traffic: Coping with Peak-Hour Traffic Congestion*.
Washington, D.C.: The Brookings Institution, 2004.

Hanson, Susan, and Genevieve Giuliano, eds. *The Geography of Urban Transportation*,
3d ed. New York: The Guilford Press, 2004.

Katz, Bruce and Robert Puentes, eds. *Taking the High Road: A Metropolitan Agenda for
Transportation Reform*. Washington, D.C.: Brookings Institution Press, 2005.

The following text is recommended. It is an abridged version of the *Chicago Manual of Style*. All written assignments must follow the Chicago reference style.

Turabian, Kate L. *A Manual for Writers of Term Papers, Theses, and Dissertations*, 7th ed. Revised by Wayne C. Booth, Gregory G. Colomb and Joseph M. Williams. Chicago: The University of Chicago Press, 2003.

These monographs are available from online booksellers. The instructor will make the other readings available in a timely fashion throughout the semester.

OVERVIEW

This course *introduces* students to many of the important issues facing transportation planning professionals today. It begins by briefly examining the planning process and transportation problems facing urban centers. It then explores the reasons why we plan transportation systems. In other words, what are the goals of the plans we prepare? The course will then review the planning context—most importantly the roles government plays in transportation decisionmaking. Finally, it looks at the many significant policy debates in the field. In tandem, throughout the semester, the course will also review the most common transportation project evaluation methods.

- A. Introduction and the Transportation Planning Process
- B. Travel Patterns and Trends
- C. Goals of Transportation Planning
 - 1. Economic efficiency
 - 2. Equity
 - 3. Sustainability
 - 4. Safety
 - 5. Aesthetics
- D. Federal, State and Local Roles in American Transportation Policy
 - 1. Programming
 - 2. Finance
- E. Transportation Planning Methods
 - 1. Overview
 - 2. Travel Demand Forecasting
 - 3. Air Quality Assessment and Conformity
 - 4. Politics of Technical Analysis
 - 5. Ethics of Data Use
- F. Transportation Policy Strategies and Debates
 - 1. Land Use
 - 2. Pricing
 - 3. Transit
 - 4. Technology
- G. Air Transportation

OBJECTIVES

The objectives of this course are twofold. The principal aim is to familiarize students with the issues and practice of transportation planning. The secondary goal of this course is to challenge conventional wisdom and develop students' ability to think critically about transportation policies. This is what Richmond calls "bubble bursting" (1995).

REQUIREMENTS

Complete all readings prior to the class session for which they are assigned. The instructor will expect you to be sufficiently familiar with the readings so that you can respond to questions and participate fully in class discussions. In addition, be prepared each week to discuss a current article related to a transportation planning or policy issue.

WRITTEN ASSIGNMENTS

	Due	Proportion of Final Grade (%)
Reading Responses	varies	20
Problem Sets (4)	See session schedule	20
Mid-term Examination	4 March	20
Policy Proposal	29 April	20
Proposal Review	6 May	5
Final Examination	13 May	15

Reading Responses

Weekly, the instructor will assign a question based on readings for the following class session. (The exceptions are weeks prior to sessions when a problem set is due or an examination is held.) Each student is required to provide his/her answer prior to the next class session. These brief responses (approximately 300-350 words) will help organize your thoughts for class discussions. They will also help the instructor ensure that you are recognizing, noting and understanding the most important points presented by the various authors. Late reading responses will not be accepted. No exceptions.

Methods Problem Sets

Complete and submit four relatively short problem sets distributed during the term. These are intended to reinforce the basic concepts of the four-step travel demand forecasting model. Although you are welcome to work with your classmates on these exercises, you must submit your work individually.

Midterm Examination

The midterm examination is closed-book. It will comprise a series of true/false, matching, fill-in-the-blank and short answer questions. Unless otherwise noted, the

examination will cover all course material through 10 October (i.e., lectures, class discussions and readings). The exam should take you about 90 minutes to complete.

Policy Proposal

Design and present to the class a proposal for a specific policy intervention—one intended to ameliorate a particular transportation problem. You may select a policy and context that matches your interests and experience. Your grade will depend on your ability to persuade your audience and defend your position. Imagine, for example, that you are the transportation advisor to the mayor of a major city—or some other elected official—and have been asked to not only identify a solution, but to sell it to the public. Your paper should be about 12 pages in length (12 pt font, double-spaced, 1” margins) and strictly follow the Chicago reference style (either the note or parenthetical citation form is acceptable). If you have questions on the proper form of a particular citation, consult the instructor or a reference librarian. Your proposal must comprise at least three peer-reviewed references. Submit two copies of your proposal—one without any identifying information.

Final Examination

The final examination is comprehensive and comprises a series of questions to which you will be required to respond at length. Two weeks prior to the examination, the instructor will distribute a set of eight essay or discussion questions, which deal with topics discussed in this course. You are encouraged to discuss these questions with your classmates and develop a set of principles—or key points—that you would make if asked to answer them in a formal examination. From these questions, the instructor will select a subset of six of which you will be asked to write essays that answer two of them. This will be a closed-book examination and you will not be allowed to refer to notes during the examination. The exam should take you about 45 minutes to complete.

UNDERGRADUATES

Recognizing that undergraduates receive undergraduate credits for this course, the grading standard for undergraduates is slightly lower for undergraduate work. Furthermore, the minimum page requirement for undergraduate policy proposal is 8.

DEADLINES

Students are required to meet the assignment deadlines set for this course. Except in very rare cases, the instructor will not grant deadline extensions. Students who miss the policy proposal deadline will not be allowed to submit a policy review.

ORIGINAL WORK

As professionals—or future professionals—and graduate students, you should adhere to the highest standards of ethical conduct. The instructor assumes that a paper, report or other material that bears your name is your original work. The line between scholarship and plagiarism is very thin.

You may use the ideas and words of others in your work, but only with proper attribution. Exact passages from other sources also require quotations. In your professional work, failure to adhere to this rule will have severe consequences—this course is no different. Plagiarism of any kind will result in a failing grade for the course and may subject the plagiarist to disciplinary action by the University.

CLASS SESSION SCHEDULE and RELATED Readings
(Subject to change)

The topics selected for this course are in no way exhaustive nor can they be said to even comprehensively summarize the entirety of issues that could conceivably be included under the rubric of transportation planning. Rather, they represent a fair sampling of the main concerns, debates and ideas that characterize the discourse of transportation planning professionals today.

21 JANUARY

Introduction and The Urban Transportation Planning Process

Johnston, Robert A. "The Urban Transportation Planning Process." In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 115-40. New York: The Guilford Press, 2004.

28 JANUARY

Travel Patterns and Trends

Downs, Anthony. "How Bad is Traffic Congestion?" In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 14-36. Washington, D.C.: The Brookings Institution, 2004.

Hanson, Susan. "The Context of Urban Travel: Concepts and Recent Trends." In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 3-29. New York: The Guilford Press, 2004.

Muller, Peter O. "Transportation and Urban Form: Stages in the Spatial Evolution of the American Metropolis." In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 59-85. New York: The Guilford Press, 2004.

Methods: Travel Demand Forecasting—Overview and Trip Generation

Hutchinson, B.G. "Travel-Demand Forecasting: Trip-Generation Analysis." In *Principles of Urban Transport Systems Planning*, 31-53. Washington, D.C.: Scripta Book Company, 1974.

4 FEBRUARY

Problem Set No. 1 Due

Goals: Economic Efficiency

Boarnet, Marlon G. "Highways and Economic Productivity: Interpreting Recent Evidence." *Journal of Planning Literature* 11, no. 4 (May 1997): 476-86.

Downs, Anthony. "Introduction." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 1-4. Washington, D.C.: The Brookings Institution, 2004.

Downs, Anthony. "The Benefit of Peak-Hour Traffic Congestion." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 5-13. Washington, D.C.: The Brookings Institution, 2004.

Downs, Anthony. "Causes and Recent Increases in Peak-Hour Traffic Congestion." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 37-60. Washington, D.C.: The Brookings Institution, 2004.

Downs, Anthony. "Incidents and Accidents as Causes of Congestion." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 61-75. Washington, D.C.: The Brookings Institution, 2004.

Downs, Anthony. "Strategies for Reducing Congestion and Four Basic Principles of Traffic." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 76-90. Washington, D.C.: The Brookings Institution, 2004.

Methods: Travel Demand Forecasting–Trip Distribution

Hutchinson, B.G. "Travel-Demand Forecasting: Trip-Distribution Analysis." In *Principles of Urban Transport Systems Planning*, 82-99. Washington, D.C.: Scripta Book Company, 1974.

11 FEBRUARY

Problem Set No. 2 Due

Goals: Equity in the Provision of Transportation Resources

Blumenberg, Evelyn and Margy Waller. "The Long Journey to Work: A Federal Transportation Policy for Working Families." In *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, edited by Bruce Katz and Robert Puentes, 197-225. Washington, D.C.: Brookings Institution Press, 2005.

Deka, Devajyoti "Social and Environmental Justice Issues in Urban Transportation." In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 332-55. New York: The Guilford Press, 2004.

Hildebrand, John. "The Appraisal: A Company Town Gives Its Farmers the Business." *Harper's Magazine* November 2001, 56-63.

Rosenbloom, Sandra. "The Mobility Needs of Older Americans: Implications for Transportation Reauthorization." In *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, edited by Bruce Katz and Robert Puentes, 227-54. Washington, D.C.: Brookings Institution Press, 2005.

Methods: Travel Demand Forecasting–Modal Split

Hutchinson, B.G. "Travel-Demand Forecasting: Modal-Split Analysis." In *Principles of Urban Transport Systems Planning*, 54-64. Washington, D.C.: Scripta Book Company, 1974.

18 FEBRUARY

Problem Set No. 3 Due

Goals: Safety, Sustainability and Aesthetics Goals of Transportation Policy

Bae, Chang-Hee Christine. "Transportation and the Environment." In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 356-81. New York: The Guilford Press, 2004.

Downs, Anthony. "Reducing Incident-Caused Congestion." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 91-100. Washington, D.C.: The Brookings Institution, 2004.

Greene, David L. "Transportation and Energy." In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 274-93. New York: The Guilford Press, 2004.

Howitt, Arnold and Jonathan Makler. "Protecting America's Highways and Transit Systems against Terrorism." In *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, edited by Bruce Katz and Robert Puentes, 287-314. Washington, D.C.: Brookings Institution Press, 2005.

Methods: Travel Demand Forecasting–Route Assignment

[Handout]

25 FEBRUARY

Problem Set No. 4 Due

Federal, State and Local Roles in American Transportation Policy

Downs, Anthony. “Regional Anti-congestion Policies.” In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 298-320. Washington, D.C.: The Brookings Institution, 2004.

Katz, Bruce, Robert Puentes and Scott Bernstein. “Getting Transportation Right for Metropolitan America.” In *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, edited by Bruce Katz and Robert Puentes, 15-42. Washington, D.C.: Brookings Institution Press, 2005.

Wachs, Martin. “Reflections on the Planning Process.” In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 141-62. New York: The Guilford Press, 2004.

Methods: Air Quality Assessment and Conformity

Howitt, Arnold M. and Alan Altshuler. “The Politics of Controlling Auto Air Pollution.” In *Essays in Transportation Economics and Policy: A Hand book in Honor of John R. Meyer*, eds. José A. Gómez-Ibáñez, William B. Tye and Clifford Winston, 223-55. Washington, D.C.: The Brookings Institution, 1999.

4 MARCH

Mid-Term Examination

11 MARCH

Transportation Finance

Hill, Edward, Billie Geyer, Robert Puentes, Devin O’Brien, Claudette Robey and John Brennan. “Slanted Pavement: How Ohio’s Highway Spending Shortchanges Cities and Suburbs.” In *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, edited by Bruce Katz and Robert Puentes, 101-135. Washington, D.C.: Brookings Institution Press, 2005.

Puentes, Robert and Ryan Prince. “Fueling Transportation Finance: A Primer on the Gas Tax.” In *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, edited by Bruce Katz and Robert Puentes, 45-76. Washington, D.C.: Brookings Institution Press, 2005.

Taylor, Brian D. “The Geography of Urban Transportation Finance.” In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 294-331. New York: The Guilford Press, 2004.

25 MARCH

Methods: Politics of Technical Analysis

Barrett, Paul and Mark H. Rose. “Street Smarts: The Politics of Transportation Statistics in the American City, 1900-1990”. *Journal of Urban History* 25 no. 3 (March 1999): 405-433.

Johnston, Robert A., Daniel Sperling, Mark A. DeLuchi, and Steve Tracy. "Politics and Technical Uncertainty in Transportation Investment Analysis." *Transportation Research Part A: General* 21A, no. 6 (November 1988): 459-75.

Pickrell, Don H. "A Desire Named Streetcar: Fantasy and Fact in Rail Transit Planning." *Journal of the American Planning Association* 58, no. 2 (spring 1990): 158-76.

1 APRIL

Methods: Ethics of Data Use

Brinkman, P. Anthony. Untitled manuscript. 2004.

Flyvbjerg, Bent, Mette K. Skamris Holm and Soren L. Buhl. "How (In)accurate Are Demand Forecasts in Public Works Projects?" *Journal of the American Planning Association* 71, no. 2 (spring 2005): 131-46.

Kain, John F. "Deception in Dallas: Strategic Misrepresentation in Rail Transit Promotion." *Journal of the American Planning Association* 56, no. 2 (spring 1990): 184-96.

Wachs, Martin. "Ethics and Advocacy in Forecasting for Public Policy." *Business and Professional Ethics Journal* 9, no. 1 & 2 (1990): 141-57.

8 APRIL

Strategies and Debates: Land Use

Brinkman, P. Anthony. "Transportation by Which to Grow." 2004.

Cervero, Robert. "Congestion Relief: The Land Use Alternative." *Journal of Planning Education and Research* 10, no. 2 (winter 1991): 119-29.

Cervero, Robert and John Landis. "The Transportation-Land Use Connection Still Matters." *Access*, no. 7 (fall 1995): 2-10.

Downs, Anthony. "Remedies that Increase Density." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 200-227. Washington, D.C.: The Brookings Institution, 2004.

Downs, Anthony. "Changing the Jobs-Housing Balance." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 228-44. Washington, D.C.: The Brookings Institution, 2004.

Downs, Anthony. "Concentrating Jobs in Large Clusters." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 245-57. Washington, D.C.: The Brookings Institution, 2004.

Downs, Anthony. "Local Growth Management Policies." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 258-71. Washington, D.C.: The Brookings Institution, 2004.

Giuliano, Genevieve. "Land Use Impacts of Transportation Investments: Highway and Transit." In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 237-73. New York: The Guilford Press, 2004.

15 APRIL

Strategies and Debates: Pricing

Downs, Anthony. "Increasing Road-Carrying Capacity." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 101-116. Washington, D.C.: The Brookings Institution, 2004.

Downs, Anthony. "Peak Hour and Other Road Pricing." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 152-79. Washington, D.C.: The Brookings Institution, 2004.

Downs, Anthony. "Demand Side Behavioral Tactics." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 180-99. Washington, D.C.: The Brookings Institution, 2004.

22 APRIL

Strategies and Debates: Transit

Beimborn, Edward and Robert Puentes. "Highways and Transit: Leveling the Playing Field in Federal Transportation Policy." In *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, edited by Bruce Katz and Robert Puentes, 15-42. Washington, D.C.: Brookings Institution Press, 2005.

Downs, Anthony. "Creating More Public Transit Capacity." In *Still Stuck in Traffic: Coping with Peak-Hour Congestion*, 117-51. Washington, D.C.: The Brookings Institution, 2004.

Menzies, Jr., Thomas R. "Making Transit Work: Insight from Western Europe, Canada, and the United States." *TR News*, no. 216 (September-October 2001): 20-23.

Pucher, John. "Public Transportation." In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 199-236. New York: The Guilford Press, 2004.

29 APRIL

Policy Proposal Due

Challenges of Air Transportation
Field Trip to Reno-Tahoe International Airport

1 MAY

Online Discussion 4:00-5:30 PM

Strategies and Debates: Technological Advancement

Janelle, Donald G. "Impact of Information Technologies." In *The Geography of Urban Transportation*, 3d ed., edited by Susan Hanson and Genevieve Giuliano, 86-112. New York: The Guilford Press, 2004.

Lipman, Timothy E. "Power from the Fuel Cell." *Access*, no. 16 (Spring 2000): 8-13.

Shladover, Steven E. "What if Cars Could Drive Themselves?" *Access*, no. 16 (Spring 2000): 3-7.

6 MAY

Proposal Review Due
5:30 PM

13 MAY

Final Examination
7:00–9:00 PM