

## **TRANSPORTATION, LAND USE AND URBAN FORM (970:665)**

(revised January 21, 2007)

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Rutgers University, Spring 2007  
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Media reports and polls, and the Texas Transportation Institute's yearly Urban Mobility Report, suggest that congestion and pollution due to auto use are intensifying every decade. But building more transportation infrastructure, for many years the default response to such impacts, has become increasingly difficult and unpopular. Funding for new roads and transit systems has become more constrained, and tougher environmental regulations and rising land prices have increased their costs.

As an alternative, many state and local governments have begun to pursue policies intended to alter development patterns in order to decrease auto use and increase walking and transit use. Such policies include transit-oriented development and smart growth programs, urban growth boundaries, and zoning code reform. Economists have long argued that such efforts are "second-best" solutions to the problems caused by the external costs of automobile use. But so-called "first-best solutions," such as road pricing (e.g., toll roads) and spatially efficient development impact fees, may be politically infeasible, or impractical, in comparison. At minimum, relaxing existing land development constraints, such as limits on the production of high-density housing, may be a necessary first step for "first-best" solutions to work properly.

Before we go off and do that, there are some questions to answer. Does a less sprawling city, in and of itself, lead to more transit use? What exactly is it about high-density environments that gets people out of their cars? Will people walk to work a block away if they can easily drive? As it turns out, these are complicated questions. There is little consensus among researchers about the nature and strength of interrelationships among transportation infrastructure, land use, urban form, and travel patterns.

This course focuses on providing an historical and theoretical understanding of these interrelationships, with a focus on U.S. urban areas. Students will apply that understanding to critically reading and evaluating empirical research and policy recommendations. Although the course is not primarily practice-oriented, it will address the common planning tools in land use and transportation planning.

The course assumes some understanding of basic economic concepts of demand and supply and as such is probably better geared to second-year students who have taken the required urban economics course. Nevertheless, all students are welcomed.

### **Assignments & other expectations**

With the exception of the introductory session, most class meetings will start with ten minutes of written responses to questions about the readings assigned for that day, with an emphasis on “priority” readings (which I will identify in the previous class). (I will take brief questions about the readings beforehand.) The purpose of the reading questions is to give students an incentive to prioritize reading thoroughly. During the course of the semester you will also give about two ten-minute presentations to the class summarizing that week’s readings.

Students must complete one ten-page case study or analytical essay, about which I will provide more information later. A two-page paper proposal will be due on Monday, March 26th (week 8) and the final product will be due via Sakai by Friday, April 27th (end of week 13). You can submit a draft paper for me for brief comments by Friday, April 13th, if you like (end of week 11; this is optional).

There will be a two-to-three hour final exam during week 15, in short-answer and essay format, based on the lectures and the readings. It will probably be held on Monday, May 7th during our regularly scheduled class time.

I will run the course partly in lecture and partly in seminar format. During both parts I expect students to participate actively in a way that demonstrates familiarity with the assigned materials. One way to assist in this is to jot down questions while you are doing the reading at home.

### **Grading & policies**

Reading questions will account for 35 percent of the grade; in-class participation and presentations, 15 percent; the paper, 25 percent; and the final exam, 25 percent.

Out of fairness to all, reading questions will start and end on time. If you know that you must arrive late or miss a class, you can submit a two-page discussion of the readings, in hard copy, to my box in advance of the class. (Satisfactory performance on the readings discussion will typically result in your receiving a grade equivalent to your average grade for the rest of the reading questions.) The lowest two scores on reading questions (including absences) will be dropped for purposes of calculating the grade.

The paper proposal must be submitted electronically via Sakai by March 26th, and the final paper by the 27th of April. Late papers will not be accepted except under extraordinary circumstances. Early papers are welcomed. I recommend submitting a final draft two weeks in advance so I can glance over it and let you know if there are any formatting issues or major concerns I have with the content.

## Readings

All readings are available in a course pack at Pequod Copy at 119 Somerset Street, a couple of buildings west of Easton Ave on the north side of the street. Don't be put off by the very technical nature of some of the readings! I will tell you which parts to concentrate on and which to skim.

### **Week 1 (Jan 22): COURSE OVERVIEW. (1) Introduction. (2) Norms and values.**

Hanson, Susan. 2004. The context of urban travel: Concepts and recent trends. In *The geography of urban transportation*, 3rd ed., edited by S. Hanson and G. Giuliano. Chapter 1, pp. 3-28. New York: The Guilford Press.

Giuliano, Genevieve. 1995. The weakening transportation-land use connection. *Access* 6:3-11.

Cervero, Robert, and John D. Landis. 1995. The transportation-land use connection still matters. *Access* 7:2-10.

Jacobs, Jane. 1961. Erosion of cities or attrition of automobiles. In *The death and life of great American cities*, Chapter 18 (pp. 338-371). New York: Random House.

Duany, Andres, Elizabeth Plater-Zyberk, and Jeff Speck. 2000. The American transportation mess. In *Suburban nation: The rise of sprawl and the decline of the American dream*, Chapter 5 (pp. 85-98). New York: North Point Press.

Wilson, James Q. 1997. Cars and their enemies. *Commentary* 104 (1):17-23.

Calthorpe, Peter. 1993. Excerpts (pp. 15-38) from *The next American metropolis: Ecology, community, and the American dream*. New York: Princeton Architectural Press.

Rotella, Sebastian. 2001. Above congested Sao Paulo, the commute is heavenly. *Los Angeles Times*, Sunday, March 4.

### **Week 2 (Jan 29): HISTORY, Part 1. (1) Overview. (2) Before the Automobile.**

Muller, Peter O. 2004. Transportation and urban form: Stages in the spatial evolution of the American metropolis. In *The geography of urban transportation* (ibid), Chapter 3, pp. 59-84.

Jackson, Kenneth T. 1985. Suburbs as slums. In *Crabgrass frontier: The suburbanization of the United States*. Chapter 1 (pp. 12-19). New York: Oxford University Press.

Jackson, Kenneth T. 1985. The transportation revolution and the erosion of the walking city. In *Crabgrass frontier* (ibid). Chapter 2 (pp. 20-44).

Jackson, Kenneth T. 1985. The main line: Elite suburbs and commuter railroads. In *Crabgrass frontier* (ibid). Chapter 5 (pp. 87-102).

Jackson, Kenneth T. 1985. The time of the trolley. In *Crabgrass frontier* (ibid). Chapter 6 (pp. 103-115).

Foster, Mark. 1979. City planners and urban transportation: The American response, 1900-1940. *Journal of Urban History* 5 (3):365-396.

### **Week 3 (Feb 5): HISTORY, Part 2. After the Automobile.**

Hall, Peter. 1996. The city on the highway. In *Cities of tomorrow*, 2nd ed. Chapter 9 (pp. 273-318). Oxford: Blackwell.

Jackson, Kenneth T. 1985. The new age of automobility. In *Crabgrass frontier* (ibid). Chapter 9 (pp. 157-171).

Southworth, Michael, and Eran Ben-Joseph. 1995. Street standards and the shaping of suburbia. *Journal of the American Planning Association* 61 (1):65-81.

### **Week 4 (Feb 12): THEORY, Part 1.**

Pickrell, Don H. 1999. Transportation and land use. In *Essays in transportation economics and policy: A handbook in honor of John R. Meyer*, edited by J. A. Gómez-Ibáñez, W. B. Tye and C. Winston. Chapter 12, pp. 403-435. Washington DC: Brookings Institution Press.

Moore, Terry, and Paul Thorsnes. 1994. Market forces that determine urban land-use and transportation patterns. In *The transportation/land use connection: A framework for practical policy, Planning Advisory Service Report 448/449*. Chapter 2, pp. 7-26. Chicago: American Planning Association.

### **Week 5 (Feb19): THEORY, Part 2.**

Hise, Greg. 1997. The airplane and the garden city. In *Magnetic Los Angeles: Planning the twentieth-century metropolis*. Chapter 4, pp. 117-151. Baltimore: Johns Hopkins University Press.

Janelle, Donald G. 2004. Impact of information technologies. In *The geography of urban transportation* (ibid), Chapter 4, pp. 86-114.

Golob, Thomas F., and Amelia C. Regan. 2001. Impacts of information technology on personal travel and commercial vehicle operations: Research challenges and opportunities. *Transportation Research C* 9 (2):87-121.

**Week 6 (Feb 26): EMPIRICAL STUDIES, Part 1. The effects of transportation investments on land use.**

Giuliano, Genevieve. 2004. Land use impacts of transportation investments: Highway and transit. In *The geography of urban transportation* (ibid), Chapter 9, pp. 237-273.

Cervero, Robert, and John D. Landis. 1997. Twenty years of the Bay Area Rapid Transit system: Land use and development impacts. *Transportation Research A* 31 (4):309-333.

Hansen, Mark. 1995. Do new highways generate traffic? *Access* 7:16-22.

**Week 7 (Mar 5): EMPIRICAL STUDIES, Part 2. Influences of land use on travel: Overview.**

Crane, Randall. 2000. The influence of urban form on travel: An interpretive review. *Journal of Planning Literature* 15 (1):3-23.

Ewing, Reid, and Robert Cervero. 2001. Travel and the built environment: A synthesis. *Transportation Research Record* 1780:87-113.

Nelson, Dick, and John Niles. 2001. Discussion. [Response to Ewing and Cervero, "Travel and the built environment: A synthesis."] *Transportation Research Record* 1780:113-114.

**SPRING BREAK - Mar 12**

**Week 8 (Mar 19): EMPIRICAL STUDIES, Part 3. Influences of land use on travel: Density and jobs-housing balance.**

Downs, Anthony. 2004. Remedies that increase densities. In *Still stuck in traffic: Coping with peak-hour traffic congestion*. Chapter 12, pp. 200-227. Washington DC: Brookings Institution Press.

Levinson, David M., and A. Kumar. 1997. Density and the journey to work. *Growth and Change* 28 (2):147-172.

Chatman, Daniel G. 2006. "Deconstructing development density: Quality, quantity and price effects."

Giuliano, Genevieve. 1991. Is jobs-housing balance a transportation issue? *Transportation Research Record* 1305:305-312.

Cervero, Robert. 1996. Jobs-housing balance revisited: Trends and impacts in the San Francisco Bay Area. *Journal of the American Planning Association* 62 (4):492-511.

Levine, Jonathan. 1998. Rethinking accessibility and jobs-housing balance. *Journal of the American Planning Association* 64 (2):133-150.

**Week 9 (Mar 26): EMPIRICAL STUDIES, Part 4. Influences of land use on travel: Spatial mismatch and sprawl.**

PAPER PROPOSAL DUE

O'Regan, Katherine M., and John M. Quigley. 1999. Accessibility and economic opportunity. In *Essays in transportation economics and policy* (ibid), Chapter 13, pp. 437-466. Washington DC: Brookings Institution Press.

Taylor, Brian D., and Paul M. Ong. 1995. Spatial mismatch or automobile mismatch? An examination of race, residence and commuting in US metropolitan areas. *Urban Studies* 32 (9):1453-1474.

Cervero, Robert, and Kang-Li Wu. 1998. Sub-centring and commuting : Evidence from the San Francisco Bay Area, 1980-90. *Urban Studies* 35 (7):1059-1076.

Crane, Randall, and Daniel G. Chatman. 2003. As jobs sprawl, whither the commute? *Access* 23:14-19.

**Week 10 (Apr 2): EMPIRICAL STUDIES, Part 5. Influences of land use on travel: Streets, mixed uses, and design.**

Whyte, William H. 2000 (1977). New York and Tokyo: A study in crowding. From *A comparative study of street life: Tokyo, Manila, New York*, edited by Hidetoshi Kato, William H. Whyte, Randolph David, Margaret Bemiss, and Rebecca Erwin. Tokyo: Research Institute for Oriental Cultures, Gakushuin University. Reprinted in *The essential William H. Whyte*, edited by Albert LaFarge. Fordham University Press: New York.

Southworth, Michael. 1997. Walkable suburbs? An evaluation of neotraditional communities at the urban edge. *Journal of the American Planning Association* 63 (1):28-44.

Handy, Susan L. 1996. Urban form and pedestrian choices: Study of Austin neighborhoods. *Transportation Research Record* 1552:135-144.

Cervero, Robert, and Kara M. Kockelman. 1997. Travel demand and the 3 Ds: Density, diversity, and design. *Transportation Research D* 2 (3):199-219.

Crane, Randall. 1996. Cars and drivers in the new suburbs: Linking access to travel in neotraditional planning. *Journal of the American Planning Association* 62 (1):51-65.

**Week 11 (Apr 9): POLICIES, Part 1. Overview.**

DRAFT PAPER DUE (OPTIONAL) [FRIDAY, APRIL 13]

Boarnet, Marlon G., and Randall Crane. 2001. Neighborhood supply issues. In *Travel by design: The influence of urban form on travel*. Chapter 6, pp. 109-117. New York: Oxford University Press.

Moore, Terry, and Paul Thorsnes. 1994. Ideal policies for increasing the efficiency of travel and land-use patterns. In *The transportation/land use connection* (ibid), Chapter 4, pp. 47-66.

Moore, Terry, and Paul Thorsnes. 1994. Second-best policies for increasing the efficiency of land-use and travel patterns. In *The transportation/land use connection* (ibid), Chapter 5, pp. 67-88.

Levine, Jonathan. 1999. Access to choice. *Access* 14:16-19.

O'Regan, Katherine M., and John M. Quigley. 1998. Cars for the poor. *Access* 12:20-25.

**Week 12 (Apr 16): POLICIES, Part 2. Transit-oriented development.**

Calthorpe, Peter. 1993. Guidelines. In *The next American metropolis* (ibid), pp. 41-55.

Calthorpe, Peter. 1993. Definitions. In *The next American metropolis* (ibid), pp. 56-61.

Loukaitou-Sideris, Anastasia, and Tridib Banerjee. 1996. There's no there there: Or why neighborhoods don't readily develop near light rail stations. *Access* 9:2-6.

Porter, Douglas R. 1998. Transit-focused development: A progress report. *Journal of the American Planning Association* 64 (4):475-488.

Downs, Anthony. 2004. Clustering high-density housing near transit stops. In *Still stuck in traffic* (ibid). Appendix E, pp. 390-401.

Bartlett, Randall. 2003. Testing the "popsicle test:" Realities of retail shopping in new "traditional neighborhood developments." *Urban Studies* 40 (8):1471-1485.

**Week 13 (Apr 23): POLICIES, Part 3. Parking.**

FINAL PAPER DUE [FRIDAY, APRIL 27]

Knack, Ruth E. 2005. Pay as you park: UCLA professor Donald Shoup inspires a passion for parking. *Planning*, May, 4-9.

Willson, Richard W. 1995. Suburban parking requirements: A tacit policy for automobile use and sprawl. *Journal of the American Planning Association* 61 (1):29-42.

Shoup, Donald C. 1999. The trouble with minimum parking requirements.  
*Transportation Research A* 33 (7-8):549-574.

Jia, Wenyu, and Martin Wachs. 1998. Parking requirements and housing affordability: A case study of San Francisco. Berkeley: University of California Transportation Center.

Manville, Michael, and Donald C. Shoup. 2004. People, parking and cities. *Access* 25:2-8.

#### **Week 14 (Apr 30): POLITICS AND GOVERNANCE**

Moore, Terry, and Paul Thorsnes. 1994. Creating coordinated land-use and transportation policy. In *The transportation/land use connection* (ibid), Chapter 7, pp. 105-117.

Wachs, Martin. 2004. Reflections on the planning process. In *The geography of urban transportation* (ibid), Chapter 6, pp. 141-162.

Wachs, Martin, and Jennifer Dill. 1999. Regionalism in transportation and air quality: History, interpretation, and insights for regional governance. In *Governance and opportunity in metropolitan America*, ed., edited by A. A. Altshuler, W. Morrill, H. Wolman and F. Mitchell. Washington DC: National Academy Press.

**FINAL EXAM : Monday, May 7, 9:30 am to 12:30 pm (tentative)**