

PLAN 636: Urban Transportation Planning

Fall 2018

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Course Meetings: Tuesday & Thursday 2:00-3:15, New East 102

Course Description

This course prepares students to be effective practitioners and informed citizens at a time when rapid advances in technology are rapidly changing the transport field. We'll focus on three aspects:

- *Understanding the Transport System:* How does transportation work? How do people and goods travel? What are new mobility options and how might they reshape transportation planning?
- *Challenges:* What are the key issues in the transport field? The section focuses on understanding current travel patterns (and their links to demographics and land use) as well as identifying key challenges and opportunities for the transport field (congestion, freight, air quality, shared mobility, autonomous vehicles).
- *Planning:* This section provides a broad introduction to the institutional structure and technical tools of transportation planning in the US. We look at the federal, state, and local levels. This section will also introduce you to the common analysis techniques used in transportation and consider their effectiveness. This section provides a strong skill basis for any students interested in pursuing careers in transportation consulting firms or municipalities (or anyone who plans to be involved with the development process).

Course Objectives

At the end of this course, you will be able to understand and perform analyses common in the practice of transportation planning authoritatively discuss the key policy issues in current transportation planning debates.

Course Requirements:

Essays: Students must complete 3 essays; several essay assignments will be given on topics covered in the course.

Debate: Students will work in groups and present in class on topical subjects related to transportation, innovation, and technology.

Final Exam: A synthetic final exam covering lecture materials and readings will be held during the exam period. According to UNC policy, “an absence may be excused for severe health problems leading to the student’s placement on the Infirmary List by either Campus Health Services or Counseling and Psychological Services, for significant personal or family circumstances, for religious observances required by the student’s faith, for a scheduling conflict involving multiple examinations at the same time, or when a student has three or more final examinations scheduled in 24 hours.” Excuses can only be issued by the director of Campus Health Services or your academic dean. If you missed the exam for an excused absence, you will receive a grade of AB and will have the opportunity to make up the exam. If your absence is unexcused, you will not have an opportunity to make up the exam and will receive a 0 for the exam.

With the instructor’s permission, graduate students may write a 25-page research paper on a topic related to the class rather than taking the final exam. Any graduate students interested in doing this must submit a proposal by the Tuesday before Fall Break.

Participation: Participation in the class and effective collaboration with your classmates is essential in this course.

Grading

Assignments	% of Final Grade
1. Essay #1	18
2. Essay #2	18
3. Essay #3	18
4. Debate	18
5. Final Exam	24
6. Attendance/Participation	4

Late Assignments

Each student has 3 ‘late days’ to use at their own discretion for the essay assignments. If an assignment is turned in after the due date but before 24 hours have passed, that would be one day late and a student could opt to use a ‘late day’ to avoid grade penalties. Late days are not subdividable. A paper that is 2 hours late is the same as a paper that is 23 hours late.

Any assignments turned in late (i.e. after allowances for the 3 late days) will incur a penalty of a half-grade (letter graded assignments) or half the standard deviation (numeric graded assignments). For example if a paper is a day late, the grade would change from a B to a B-. If the paper were two days late, the grade would change from a B to a C+.

Readings

Readings for each session are detailed in the remainder of the syllabus. Many of them will be available on Sakai. Several books are on reserve at the House Undergraduate Library including:

- Guiliano & Hanson, Geography of Urban Transportation
- Meyer, M. Urban Transportation Planning: A Decision-Oriented Approach

Honor Code

The UNC Honor Code states: “It shall be the responsibility of every student at The University of North Carolina at Chapel Hill to obey and to support the enforcement of the honor code, which prohibits lying, cheating, or stealing when these actions involve academic processes or University, student or academic personnel acting in an official capacity.”

This standard does not preclude discussions of assignments with other students. However, I expect that each person turns in their own work. You must also provide citations for any ideas that are not your own.

Accommodations

Students will be offered appropriate accommodations if they are registered with UNC’s Accessibility Resource Service. Please work with ARS to ensure that I am notified in a timely manner.

Course Schedule

Date	Topic
8/21	Course Overview & Introduction to Transport System
8/23	Travel Patterns
8/28	History of Innovation in Transport Technology
8/30	Connecting to Land Use and Growth Patterns
9/4	Congestion
9/6	Mobility
9/11	Autonomous Vehicles (Michael Clamann, HSRC)
9/13	Safety Summit
9/18	Transport, Technology, and Health (Mary Wolfe, DCRP)
9/20	Goods Movement (Dana Magliola, NCDOT)
9/25	Debate: Impacts of Recent Innovations in Transport Technology
9/27	Debate: Impacts of Recent Innovations in Transport Technology
10/2	Gender & Travel (Gwen Kash, Georgia Tech)
10/4	Transport & Social Justice
10/9	Transport & Health
10/11	Environment: Climate Change and Air Pollution
10/16	Safety (Seth LaJeunesse, HSRC)
10/18	<i>Fall Break - No Class</i>
10/23	Transportation Planning Process
10/25	Safety (Seth LaJeunesse, HSRC)
10/30	Planning Large-Scale Infrastructure
11/1	Travel Demand Modeling
11/6	Planning the Uncertain Future
11/8	Transportation Finance: Current Status
11/13	Transportation Finance: Future Alternatives
11/15	Triangle Light Rail (Geoff Green, Go Triangle)
11/20	Streets
11/22	<i>Thanksgiving - No Class</i>
11/27	Parking
11/29	Traffic Impact (Tab Combs, DCRP)
12/4	Wrap-up & Exam Review
12/8	Final Exam, Noon (Saturday), New East 102

Readings

** Indicates required reading.

Overview & Introduction to Transport System

- TRB's Critical Issues in Transportation 2013
<http://onlinepubs.trb.org/Onlinepubs/general/criticalissues13.pdf>
- Bertolini, L., F. le Clercq and T. Straatemeier. 2008. Urban transportation planning in transition. In *Transport Policy*, Vol. 15, No. 2, pp. 69-72.
- Hanson, S. 2017. Introducing Urban Transportation. *The Geography of Urban Transportation*, 4th Ed.

Travel Patterns

- **Pisarski, Commuting in America, 2013.
http://traveltrends.transportation.org/Documents/ES_Executive%20Summary_CAES-4_web.pdf, Executive Summary.
- **Blumenberg, et al. 2016. Who Knows About Kids These Days? Analyzing the Determinants of Youth and Adult Mobility in the US Between 1990 and 2009. *Transportation Research Part A*
- **McDonald, N. 2015. Are Millennials Really the 'Go Nowhere' Generation? *Journal of the American Planning Association* 81(2): 90-103.
- Bastian, et al. 2016. Explaining 'peak car' with economic variables. *Transportation Research Part A*
- Pisarski, A., S. Polzin, E. Murakami. 2016. Commuting in a Post Baby Boomer World. *Public Roads* 79(4). <https://www.fhwa.dot.gov/publications/publicroads/16janfeb/04.cfm>
- Blumenberg, E. and A. Norton. 2010. Falling Immigration Rates Mean Falling Transit Ridership. *Access* 37.

History of Innovation in Transport Technology

- **Muller, Peter O. 2004. "Transportation and Urban Form: Stages in the Spatial Evolution of the American Metropolis," in *The Geography of Urban Transportation*, Third Edition, Susan Hanson and Genevieve Giuliano, Editors. New York: The Guilford Press.
- Morris. 2007. "From Horse Power to Horsepower". *Access* 30
<https://www.accessmagazine.org/wp-content/uploads/sites/7/2016/07/Access-30-02-Horse-Power.pdf>
- DiMento, J. and C. Ellis. 2015. *Changing Lanes*. *Access* 47.

Connecting to Land Use and Growth Patterns

- **Stevens, Mark R. 2017. Does compact development make people drive less? JAPA 83(1). [and responses]
- **Guerra, E. and R. Cervero. 2012. Transit and the "D" Word. *Access* 40.
http://www.accessmagazine.org/wp-content/uploads/sites/7/2016/01/access40_transitanddensity-1.pdf
- Welch, T. et al. 2016. Long-term impact of network access to bike facilities and public transit stations on housing prices in Portland, Oregon. *Journal of Transport Geography*.

- Pickrell, D. 1999. Transportation and Land Use. *Essays in Transportation Economics and Policy*. Washington DC: Brookings Institution Press.

Congestion

- **Downs. “Why Traffic Congestion Is Here to Stay...and Will Get Worse. Access 25. <https://cloudfront.escholarship.org/dist/prd/content/qt3sh9003x/qt3sh9003x.pdf?t=mjzfx7>
- **Taylor. “Rethinking Traffic Congestion.” Access 21. <https://www.accessmagazine.org/wp-content/uploads/sites/2/2015/04/taylor.pdf>
- Anderson. 2017. Subways, Strikes, and Slowdowns. Access, Spring 2017 <http://www.accessmagazine.org/wp-content/uploads/sites/7/2017/05/Anderson-Access-Spring-2017.pdf>
- Cervero. “Are Induced-Travel Studies Inducing Bad Investments?” Access 22. <http://americandreamcoalition-org.adcblog.org/highways/induced.pdf>
- Small. Unnoticed Lessons From London. Access 26. <http://www.accessmagazine.org/wp-content/uploads/sites/7/2016/07/Access-26-03-Road-Pricing-and-Public-Transit.pdf>

Shared Mobility

- **What is Shared-Use Mobility? <http://sharedusemobilitycenter.org/what-is-shared-mobility/>
- **Shaheen, S., N. Chan, L. Rayle. 2017. Ridesourcing’s Impact and Role in Urban Transportation. Access, Spring 2017.
- Shared Mobility and the Transformation of Public Transit. <https://www.apta.com/resources/reportsandpublications/Documents/APTA-Shared-Mobility.pdf>
- Shaheen, S. and N. Chan. 2016. Mobility and the Sharing Economy: Potential to Facilitate the First-and Last-Mile Public Transit Connections. *Built Environment* 42: 573-588.

Autonomous Vehicles

- **Millard-Ball, A. 2017. Pedestrians, Autonomous Vehicles and Cities. *Journal of Planning Education and Research*.
- NACTO Policy Statement on Automated Vehicles. <http://nacto.org/wp-content/uploads/2016/06/NACTO-Policy-Automated-Vehicles-201606.pdf>
- Zmud, J. I. Sener, J. Wagner. 2016. Consumer Acceptance and Travel Behavior Impacts of Automated Vehicles. <https://static.tti.tamu.edu/tti.tamu.edu/documents/PRC-15-49-F.pdf>
- Levels of Automation. Society of Automotive Engineers <https://autoalliance.org/wp-content/uploads/2017/07/Automated-Vehicles-Levels-of-Automation.pdf>

Transport, Technology, and Health

- **Syed, S. T., Gerber, B. S., & Sharp, L. K. (2013, October). Traveling towards disease: Transportation barriers to health care access. *Journal of Community Health*. NIH Public Access. <http://doi.org/10.1007/s10900-013-9681-1>
- Powers, B. W., Rinefort, S., & Jain, S. H. (2016). Nonemergency Medical

Transportation. *JAMA*, 316(9), 921. <http://doi.org/10.1001/jama.2016.9970>

- Wallace, R., Hughes-Cromwick, P., Mull, H., & Khasnabis, S. (2005). Access to Health Care and Nonemergency Medical Transportation: Two Missing Links. *Transportation Research Record: Journal of the Transportation Research Board*, 1924, 76–84. <http://doi.org/10.3141/1924-10>

Goods Movement

- **Levinson, Marc. 2006. *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger*. Princeton, NJ. Chapter 1.
- **Dablanc, L. and J. Rodrigue. 2017. The Geography of Urban Freight. *Geography of Urban Transportation*, 4th Ed.
- Container Podcast, Alex Madrigal, <https://www.flexport.com/blog/alexis-madrigal-containers-podcast/>
- Glaeser, Edward L. and Janet E. Kohlhase. Cities, Regions, and the Decline of Transport Costs. 2003. <https://www.csus.edu/indiv/c/chalmersk/econ180fa08/glaeserkohlhase2004.pdf>
- NCFRP 23.

Gender and Travel

- **Peters, Deike. 1998. “Breadwinners, Homemakers and Beasts of Burden: A Gender Perspective on Transport and Mobility.” *Habitat Debate*, The United Nations Centre for Human Settlements, Nairobi, 4 (2): 12–14.
- **Rosenbloom, Sandra. 2006. “Understanding Women’s and Men’s Travel Patterns: The Research Challenge.” In *Research on Women’s Issues in Transportation, Volume 1: Conference Overview and Plenary Papers*, 7–26. Washington, D.C.: Transportation Research Board. <https://www.nap.edu/catalog/23274>
- Randall Crane (2007) Is There a Quiet Revolution in Women's Travel? Revisiting the Gender Gap in Commuting, *Journal of the American Planning Association*, 73:3, 298-316
- Taylor, Brian D., Kelcie Ralph, and Michael Smart. 2015. “What Explains the Gender Gap in Schlepping? Testing Various Explanations for Gender Differences in Household-Serving Travel*: Gender Gap in Schlepping.” *Social Science Quarterly* 96 (5): 1493–1510.
- United Nations Human Settlements Programme, and UN-Habitat. 2013. *State of Women in Cities: Gender and the Prosperity of Cities*. Kenya: United Nations Human Settlements Programme.

Transport & Social Justice

- **Blumenberg, et al. 2016. A Driving Factor in Moving to Opportunity. Access 48.
- **Cairns, S., J. Greig, M. Wachs. 2003. Environmental Justice & Transportation: A Citizen’s Handbook. <http://www.escholarship.org/uc/item/66t4n94b#page-1>
- Blumenberg, et al. 2017. The Drive to Work: The Relationship between Transportation Access, Housing Assistance, and Employment among Participants in the Welfare to Work Voucher. JPER
- Bullard, Robert and Glenn Johnson. 1997. *Just Transportation*, Chapter 1.

Transport & Public Health

- **Frumkin, H. 2016. Urban sprawl and public health. *Public Health Reports*.
- Kohl, et al. 2012. The pandemic of physical inactivity: global action for public health. *The Lancet*.
- Wolch, et al. 2014. Urban green space, public health and environmental justice: The challenge of making cities ‘just green enough’. *Landscape and Urban Planning*.
- Rojas-Rueda, et al. 2012. Replacing car trips by increasing bike and public transport in the greater Barcelona metropolitan area: a health impact assessment. *Environment International*.

Environment: Climate Change and Air Pollution

- **Transportation Sector. National Climate Assessment.
<http://nca2014.globalchange.gov/report/sectors/transportation>
- EPA, Carbon Pollution from Transportation <https://www.epa.gov/air-pollution-transportation/carbon-pollution-transportation>
- EPA, Transportation, Air Pollution, and Climate Change <https://www.epa.gov/air-pollution-transportation>
- Overview of Air Pollution from Transportation <https://www.epa.gov/air-pollution-transportation/learn-about-air-pollution-transportation>
- Lutsey, Nic. 2012. “New Automobile Regulations.” *Access* 41: 2-9.
<http://www.accessmagazine.org/wp-content/uploads/sites/7/2015/10/New-Automobile-Regulations.pdf>
- TRB SR 298 Driving and the Built Environment: The Effects of Compact Development on Motorized Travel, Energy Use, and CO2 Emissions. Summary
<http://onlinepubs.trb.org/Onlinepubs/sr/sr298.pdf>
- Wygonik and Goodchild. 2017. Evaluating the impacts of density on urban goods movement externalities. *Journal of Urbanism*.

Safety

- **OECD. 2008. Towards zero: Ambitious Road Safety Targets and the Safe System Approach.

Transportation Planning Process

- **Wachs, M. Geography of Urban Transportation, Ch. 6
- **Handy, S. 2008. Regional transportation planning in the US: An examination of changes in technical aspects of the planning process in response to changing goals. *Transport Policy* 15: 113-126.
- FHWA briefing book, Part 1
<http://www.planning.dot.gov/documents/briefingbook/bbook.htm>
- A Citizen’s Guide to Transportation Decision Making
<http://www.fhwa.dot.gov/planning/decisionmaking/index.htm>

Planning Large-scale Infrastructure

- **Flyvbjerg, Bent. 2014. What you should know about megaprojects and why: an overview. *Project Management Journal*.
- **Frick, K. 2014. Pursuing the Technological Sublim: How the Bay Bridge Became a Megaproject. *Access* 44
- Altshuler, Alan and David Luberoff. 2003. *Mega-projects: the changing politics of urban public investment*. Ch. 2 Four Political Eras.

Travel Demand Modeling

- **Avin, U. 2012. “Tools for Building Scenarios: Sorting Out What to Use When.” *Planning* December 2012.
- **Hartgen, D. 2013. Hubris or humility? Accuracy issues for the next 50 years of travel demand modeling. *Transportation* 40(6).

Planning the Uncertain Future

- **Grow, peak or plateau - the outlook for car travel. <http://eprints.uwe.ac.uk/23277/>
- **Sperling, Daniel and Eileen Claussen. 2004. Motorizing the Developing World. *Access* 24: 10-15. <https://www.accessmagazine.org/wp-content/uploads/sites/7/2016/07/Access-24-03-Motorizing-the-Developing-World.pdf>
- **Lyons, G. and C. Davidson. 2016. Guidance for Transport Planning and Policymaking in the Face of an Uncertain Future. *Transportation Research Part A* 88:104-116.

Transportation Finance: Current Status and Challenges

- **Wachs, M. 2011. “Transportation, Jobs and Economic Growth.” *Access* 38. http://www.accessmagazine.org/wp-content/uploads/sites/7/2016/01/access38_transportation_growth.pdf
- **Hess, Daniel Baldwin and Peter A. Lombardi. “Governmental Subsidies for Public Transit: History, Current Issues, and Recent Evidence,” *Public Works Management & Policy* 10(2), 2005, pp. 138–156.
- Delucchi 2000. Should we try to get the prices right? *Access* 16:10-14.
- (Skim)National Surface Transportation Policy and Revenue Study Commission Report http://www.transportationfortomorrow.org/final_report/
- (Skim) 2009. Paying Our Way: A New Framework for Transportation Finance. http://www.itif.org/files/NSTIF_Commission_Final_Report.pdf?_ga=2.179222503.233630420.1534697488-1235047788.1534532398
- Taylor, B. 2000. When Finance Leads Planning: Urban Planning, Highway Planning and Metropolitan Freeways. *Journal of Planning Education and Research*. 20 (2): 196-214
- Sciara, Gian-Claudia. 2012. Peering Inside the Pork Barrel. *Access* 41. <http://www.accessmagazine.org/wp-content/uploads/sites/7/2015/10/Peering-Inside-the-Pork-Barrel.pdf>

Transportation Finance: Future Alternatives

- **(Skim) 2009. Paying Our Way: A New Framework for Transportation Finance. http://www.itif.org/files/NSTIF_Commission_Final_Report.pdf?_ga=2.179222503.233630420.1534697488-1235047788.1534532398

- **Sorenson. 2013. “From Fuel Taxes to Mileage Fees.” *Access* 43.
- Altshuler, A. 2013. Equity as a Factor in Surface Transportation Politics. *Access* 42.
- Wachs. “Local Option Transportation Taxes: Devolution as Revolution.” *Access* 22. <http://www.accessmagazine.org/wp-content/uploads/sites/7/2016/07/Access-22-02-Local-Option-Transportation-Taxes.pdf>
- Taylor, B. and L. Schweitzer. 2010. Just Road Pricing. *Access* 36.

Streets

- **Dumbaugh and King. 2018. Engineering livable streets: A thematic review of advancements in urban street design. *Journal of Planning Literature*.
- Saelens, et al. 2003. Environmental correlates of walking and cycling: findings from the transportation, urban design, and planning literatures. *Annals of behavioral medicine*.

Parking

- **Pierce and Shoup. 2013. “SFPark: Pricing Parking by Demand.” *Access* 43.
- **Millard-Ball et al. 2016. Cruising for Parking: Lessons from San Francisco. *Access* 49.
- Shoup. 2007. Cruising for Parking. *Access* 30. <http://shoup.luskin.ucla.edu/wp-content/uploads/sites/2/2015/02/CruisingForParkingAccess.pdf>
- Shoup, D. 2002. “Roughly Right or Precisely Wrong?” *Access*, Spring p. 20-25. <https://cloudfront.escholarship.org/dist/prd/content/qt2x8639t7/qt2x8639t7.pdf?t=mjo83y>
- *Access* 49. Focus on Parking.

Traffic Impact

- **Millard-Ball, A. 2014. Phantom Trips. *Access* 45.
- **Handy, S. R. Schneider, K. Shafizadeh. Trip Generation for Smart Growth Projects. *Access* 45.
- Papacostas, & Prevedouros. 2001. “Traffic Impact and Parking Studies in *Transportation Engineering and Planning*, 3rd Edition. Upper Saddle River, NJ: Prentice-Hall, pp 456-497.
- Institute of Transportation Engineers. *Transportation Impact Analyses for Site Development*.
- NCHRP 08-51 Enhancing Internal Trip Capture Estimation for Mixed Use Developments http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_684.pdf
- Effect of TODs on Housing, Parking, and Travel http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_128.pdf
- (Skim) City of Charlotte, Planning and Designing Signalized Intersections using Multi-Modal Level-of-Service Standards <http://charmeck.org/city/charlotte/Transportation/PlansProjects/Documents/ALOSStandardsAppendixApril05.pdf>
- U.S. Environmental Protection Agency. Smart Growth: Trip Generation Tool for Mixed-Use Developments, 2011. https://sakai.unc.edu/access/content/group/36f426f2-e19f-4eb0-8c5c-a222714ccb87/Readings/22.Traffic%20Impact/_Charlotte_PlanningAndDesigningSignalizedIntersections.pdf