PPDE 644: LAND USE AND TRANSPORTATION PLANNING

PPDE 644, Fall, 2016
Day/Time: Weds., 9 a.m. – 12:20 p.m.
Room RGL 219

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Office Hours: Wednesdays, 4:00 – 5:00

DESCRIPTION:

This is a graduate seminar on land use and transportation. The land use – transportation link has become a staple of urban planning. Hardly a transportation plan is written nowadays that does not seek to integrate land use patterns and transportation or to leverage the interactions between transportation and land use. This is not a new idea. In 1954, Mitchell and Rapkin published *Urban Traffic: A Function of Land Use*, and the idea that traffic patterns depend on flows between trip origins and destinations (hence, land use) is obvious and as old as transportation itself. Yet the policy context, and our scientific knowledge of the topic, have both changed in ways that require careful study. This course is built around four propositions.

1. ***The 'land use – transportation' link is behavioral.*** We will develop the key aspects of social scientific theory that illuminate how land use patterns influence travel and how transportation infrastructure influences the spatial pattern of urban growth.
2. ***Economics is helpful.*** This is not a course in economics, per se, but students must understand the markets involved in interactions between land use and transportation. There are two directions of the land use – transportation interaction: (a) the impact of transportation infrastructure on urban growth patterns, and (2) the influence of patterns of origins, destinations, and accessibility on travel decisions. Each involves different markets, and the theory and evidence for each will be discussed. Certainly those markets interact, but the modeling interaction between those markets is a frontier research topic and, interestingly, has been at the frontier for about four decades. For that reason, we will focus on understanding the causal links from transportation to land use and from land use to travel largely as separate paths, leaving the integration of those paths to the research community.
3. ***Policy should be theoretically grounded.*** We will focus on moving our learning from theory to practice. There is a broad body of theory that informs interactions between transportation and land use and mountains of empirical evidence. You will learn the key theories and the nature of the empirical results on land use and transportation in this class. The first few weeks, for that reason, will be abstract, but you will learn to apply that learning to practice.
4. ***Planning must be holistic.*** Land use – transportation planning is a comprehensive, holistic, and context sensitive endeavor. We learn the theories and the empirical

relationships to build vibrant transit-oriented developments, or to improve mobility and air quality in specific places, or to support multi-modal travel in communities and neighborhoods. In each case, the sensibility of an urban designer and the concepts of sense of place and quality of life suggest that there is a totality to the urban experience that cannot be reduced to individual markets and a multitude of elasticities. Transportation is intimately bound up with our daily lived experience in the built environment. We will learn the constituent parts, in a scientific manner, but ultimately any good planner must integrate those parts into a larger totality – a plan. Students will be divided into group projects where you will be assigned to work in teams to put together the theory that you learned in the service of a small, skeleton land use – transportation plan.

LEARNING OBJECTIVES:

Students will learn:

1. The key theories that undergird land use – transportation interactions,
2. How an understanding of land markets and the derived-demand approach to travel behavior provide useful frameworks for land use – transportation planning,
3. How existing evidence can inform land use – transportation planning,
4. Travel data collection methods, with a focus on electronic technologies (you will not become expert in these technologies, but you will get an introduction),
5. Some of the policy and planning context for regional land use – transportation planning, and
6. Applications of land use – transportation planning in developing country contexts (most of the class will be focused on the U.S. and developed country contexts, though).

Additionally, through a group project, students will practice linking theory and evidence to holistic and context-sensitive land use – transportation planning efforts. In short, students will be trained in how to plan in ways that builds from a base of theory and evidence but that also grapples with the totality of the lived experience of a neighborhood land use – transportation plan – as much so as can be done in a short course.

COURSE PLAN:

This course will be run as a seminar. Students are responsible for being actively engaged in learning the material. This will occur in three ways. First, half of each class will be devoted to discussions of the week's readings. Second, students will be required to read materials and present a summary of selected readings during the quarter. This requirement is discussed in more detail below. Third, students will work on a group project and will present their work to the class in Week 15. This also is described below.

Ph.D. STUDENTS:

Doctoral students are welcome in this class. Parts of the course – the group project in particular – are intended more to train future practitioners. Ph.D. students (and masters students) should note that the reading list includes several optional readings. Doctoral students will be expected to choose at least one third of the optional readings and to agree to read those and write an individual term paper in addition to other course assignments. Doctoral students must do all the required readings, of course, and all readings that are required for Ph.D's but optional for masters students. The term paper should be chosen in conjunction with Professor Boarnet by the end of the second week of class. Please give professor Boarnet a written statement of your term paper by the end of Week 2 (again, this is doctoral students only.) The doctoral student term paper will be in lieu of the group project. The doctoral student term paper will include research that goes beyond the readings on this syllabus. Doctoral students will write approximately 15 to 20 pages for these papers, and the doctoral student papers will most likely be academic literature reviews on a topic in land use and transportation. Doctoral students will not participate in the group project – instead, for doctoral students, the 15-20 page term paper will be 55% of your grade.

READINGS

Many of the readings are available on the web. The readings will also be available on Blackboard.

The following web links will also be useful as background – these are not required by may provide portals to interesting information.

Bureau of Transportation Statistics – an exhaustive repository of data and reports: www.bts.gov

National Transportation Library – excellent, searchable, catalog of articles and reports on transportation – includes one of the best catalogs of agency reports -- http://ntl.bts.gov/

GRADES:

Grades will be distributed as follows:

Witten facilitator summaries	20%
Presentation of facilitator summaries	15%
Individual Written Portion of Group Project (≈10 pages)	
Draft individual paper	25%, due Oct. 26
Revision of individual paper (Note, revision is required for grades less that A- on draft, but is optional for draft paper grades of A- or A, in which case the revision grade can be the draft grade.)	15%, due Dec. 7 (finals week)
Group Project In-Class Presentation	15%, in class, Nov. 30
Class Participation, including preparation for and participation in discussion questions	10%

READINGS

Students are expected to read the assignments before the class and to come to class prepared to discuss those readings. There are a lot of readings, but not an excessive amount. To be able to effectively participate in class discussion, you should aim to read at least two-thirds of the assigned pages each week. There are many optional readings and those are, as the word suggests, optional, although some optional readings as indicated are required for Ph.D. students.

PRESENTATIONS ON READINGS (facilitator summaries and group presentations)

Each class will be divided into two halves. In the first half of class, students will discuss the week's readings. That discussion will be facilitated by a few students who will be chosen to summarize and critique the readings for that week. The second half of class will be devoted to class lectures on the week's topic.

Students will be assigned to summarize readings. I will call those summaries "facilitator summaries." Each week, the students assigned to that week will (1) write individual summaries of the readings, and (2) give a group presentation on their interpretation of the readings at the beginning of the class. A schedule will be developed on the first day of class. Each student will write three summaries, during three weeks of the class.

Written individual summaries should be turned in via Blackboard by **noon** on the **Tuesday** before the class. Group presentations will be approximately 20 minutes in length, and each student assigned to the presentation group for that week must speak during the group

presentation.

Each summary will cover some (but not necessarily all) of the week's readings. The chosen readings must be very closely related to one another. The summaries will include the student's interpretation and critique of the readings, any extensions of the readings that the student wishes to mention, and unresolved issues that are good topics for discussion. **NOTE THAT THESE SUMMARIES SHOULD BE MORE THAN "BOOK REPORTS". THEY MUST ALSO INCLUDE YOUR INTERPRETATION OF THE MATERIAL.** Each student summarizing readings that week will bring a copy of their summary to class, in addition to the submission via Blackboard.

Groups of students writing the summaries are expected to coordinate their presentation in advance of each class session, and to prepare powerpoint and other visual aids as needed. After the group presentation, we will devote time to class discussion of the week's topics. The entire class will be responsible for participating in class discussion, and 10% of the grade is based on participation in class discussion.

LATE ASSIGNMENTS:

The due dates will be shown on the syllabus or clearly indicated in class assignments. For the written facilitator summaries, those should be turned in via Blackboard before class per the instructions earlier in this syllabus. Exceptions will only be granted in cases of illness (with a health care provider's note) or extraordinary emergencies (again with written documentation of the emergency, including evidence that the event could not have been anticipated in advance.) If you are ill and cannot attend class on the day of a facilitator summary presentation, you can make that up by doing an extra written facilitator summary. (While I want you in class, I don't want you to risk bringing an illness and germs into the class or pushing yourself when you are sick and should be getting well.) More generally, class participation is part of your course grade, so I expect excellent attendance and participation, allowing for the occasional illness.

For the group projects, the written portion (an individual paper) is due on the due date indicated (draft, Oct. 26, revision, Dec. 7), and exceptions will only be granted in cases of illness (with a health care provider's note) or emergencies such as a severe illness, death in the family, or sudden and unanticipated family crisis which required you to care for a relative within the few days before the due date for the written paper. You have a lot of time to plan your schedule, so understand that I will be unwilling to accept late individual papers unless illness intervened in ways that could not have been anticipated. Group presentations in Week 15 cannot be moved or rescheduled.

USC DISABILITY SERVICES

I am always happy to work with USC's Office of Disability Services to accommodate student needs. Students should contact the Office of Disability Services in the first two weeks of the semester, or prior to the semester. I allow accommodations as recommended by the Disability Services office, but I will only allow accommodations specifically recommended by that office in writing and in advance of assignment due dates. Please allow enough time for

coordination between the Disability Services office and me. Consult this web page for more information: http://scampus.usc.edu/disability-services/.

ACADEMIC HONESTY

Students should consult USC's academic honesty guidelines, available at http://www.usc.edu/student-affairs/student-conduct/grad_ai.htm and http://www.usc.edu/student-affairs/SJACS/forms/GradIntegrity.pdf. Penalties for violations of academic honesty will be as severe as are allowed by USC's guidelines, and typically involve a minimum of a zero grade for the assignment for minor infractions, with larger penalties for more serious cases. Cutting and pasting material from the web is only acceptable if the material is indicated to be a direct quote, with the source attributed. All ideas and information from external sources must be properly attributed to that source.

Academic Conduct

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* http://equity.usc.edu or to the *Department of Public Safety* http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* http://www.usc.edu/student-affairs/cwm/ provides 24/7 confidential support, and the sexual assault resource center webpage http://sarc.usc.edu describes reporting options and other resources.

Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* http://dornsife.usc.edu/ali, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* http://emergency.usc.edu will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

GROUP PROJECT:

Students will be divided into groups to work on an integrated group project. Anticipate groups of three or four students, although exact numbers and groupings will be determined during the first two weeks of class. Each student will be responsible for an individual paper (approximately ten pages, double spaced) and a group presentation of an overall plan for your project area. Your individual paper is due in a very clean draft (which will really be final form, worth 25% of your course grade) on **Oct. 26**, and a revision of that paper for persons earning less than A- will be due **Dec. 7**.

Each group will choose from among a small set of projects suggested by the instructor. Alternative projects not suggested by the instructor can be pursued but require the instructor's permission. All groups should select their project by the third class meeting (at the latest), and all group project topics must be approved by the instructor (even those from the suggested list) and topics cannot be changed without the instructor's permission. In general, changing topics is not a good idea and will be discouraged.

Student groups will develop a land use – transportation plan. The plan will have distinct components that students should integrate into a comprehensive vision for their neighborhood or region. Each plan or vision must strive to be grounded in theory and evidence while also being cognizant of the local context and the comprehensive nature of land use – transportation planning. Understand that I know that in some cases you will not have time to build anything like a comprehensive plan, and instead you may have to work from the literature and adapt ideas to your project and study area as best you can.

Suggested topics include:

1. Transit-Oriented Development planning for Leimert Park, along the proposed Crenshaw light rail line.

   Possible Contacts: Ken Bernstein, L.A. City Planning Department, [redacted]
   Ping Chang, Southern California Association of Governments
   Contact Information:
   Ping Chang [redacted]
   Ben Caldwell, [redacted]
   Karen Mack, [redacted]

2. California High Speed Rail, first phase (Madera and Fresno Counties, likely best to focus on Fresno)

   Possible Contacts: Katherine Perez-Estolano, Principal, ELP Advisors and Former Member, California High Speed Rail Authority Board of Directors,

[redacted]
Karl Fielding
Lead Planner
California High-Speed Rail Project
WSP | Parsons Brinckerhoff
[redacted]

3. Metro Bike Share and USC (looking at extending the Metro bike share program to USC)

   Possible Contacts: Matt Benjamin, Fehr and Peers,
   [redacted]
   Allison Kendall, Kendall Planning, [redacted]
   Tony Mazza, Director of Transportation, USC, [redacted]

4. Transportation Network Companies and Transit
   Seleta Reynolds, Director, L.A. Department of Transportation,
   [redacted]
   Marla Westervelt, L.A. Metro Office of Extraordinary Innovation, email:
   [redacted]

The students in each group will write an individual paper, 8 to 10 pages, double spaced. Paper possibilities are listed below, in ways that allow each student to have an individual piece of a larger whole. Possible individual papers, focused around the group project, include:

1. Background on the project, the idea, the place, and the literature. For example, for transit-oriented development, there is a large amount of information both in the academic literature and in agency reports or other sources that give specifics about plans in Los Angeles. Your paper will describe both the general findings and issues on TOD (from the academic literature) and the Los Angeles plans and planning context. The same point would hold for other topics – the background paper gives the background of the idea (from the academic literature) and the specifics of the project and planning context. This kind of paper sets the stage for the rest of the analysis by other group members.

2. Land use – travel impacts, or broader circulation issues. What does the evidence show about how these projects, TOD, bikeshare, high speed rail, and transportation network companies, work and what impacts might be expected in travel and/or circulation? This would include careful reference to the literature, evidence, and possibly quantitative analysis.

3. Policy issues (e.g. project financing, inter-governmental cooperation, compliance with Clean Air Act or SB 375 or other legal requirements, prospects for public opposition or support) related to your group's project.

4. Environmental impacts. For example, what does the evidence and literature say about possible impacts on air quality, or greenhouse gas emissions, or other environmental impacts? Here you should be specific and either give evidence and analysis or carefully (and with reference to the literature) explain how you would get evidence.

5. Neighborhood impacts. What might be the impact of your group's project – TOD, HSR, transportation network companies, bikeshare – on the neighborhood quality of life? On housing or economic development or the pedestrian environment and sense of place? Again, reference the literature clearly and describe how you might assess potential positive and negative impacts.

6. Urban design principles. What principles might you suggest, based on the literature and your analysis, for your project? This may involve more of a graphic approach than the other papers, but please make it a paper.

Each paper must be immersed in your project area. These papers should be practical and practice-focused applications of our learning, and while I certainly want you to clearly reference the literature I want you to do that while making a link to how you adapt our class learning to your group's project and project area.

Each group will synthesize the findings of their individual papers into an overall presentation. The presentation will, in some ways, have elements of a plan but it may not be comprehensive. It must, though, be substantive, grounded in theory and empirical learning, and specific to your project's location, context, and needs. Groups will present their synthesis in a professional manner, using powerpoint and, as appropriate, other visual aids, in class during the last two weeks of class. Each group will have approximately 20 to 30 minutes for this presentation.

Contact names are listed above. These are persons who can be helpful, and you should contact them while respecting their time. You are encouraged to find other contacts, also.

SCHEDULE OF TOPICS AND READING LIST:

I. Theoretical Foundations

Week 1, Aug. 24: Introduction and Review of Theory of Externalities

Daniel P. Moynihan, "New Roads and Urban Chaos," The Reporter, April 14, 1960, pp. 13-20.

* Robert Pindyck and Daniel Rubinfeld, *Microeconomics*, 7th Edition, Pearson/Prentice-Hall, Chapter 18, Externalities and Public Goods, pp. 645-676 (esp. 645-663)

* Harvey Rosen, *Public Finance*, 3rd Edition, Richard D. Irwin, Chapter 6.

* Marlon Boarnet and Randall Crane, *Travel by Design: The Influence of Urban Form on Travel*, Oxford University Press, 2001, Chapter 2.

Week 2, Aug. 31: Economic Fundamentals and the Land Use – Transportation Link

Note: No facilitator summaries on this day; lecture only.

A. Agglomeration Economies

Arthur M. Sullivan, Urban Economics, 1990, pp. 22-29.

Paul Krugman, Geography and Trade, 1991, pp. 59-67

Optional (required for Ph.D. students):

Puga, Diego. 2010. The Magnitude and Causes of Agglomeration Economies. *Journal of Regional Science* 50,1: 203-220.

Optional for all

Ajay Agarwal, Genevieve Giuliano, and Christian L. Redfearn, "Strangers in our Midst: The Usefulness of Exploring Polycentricity" *Annals of Regional Science* 48: 433-450, April, 2012.

Week 2 (continued)

B. Monocentric Model

William Alonso, "A Theory of the Urban Land Market," in Readings in Urban Economics, edited by Matthew Edel and Jerome Rothenberg, pp. 104-111.

C. Transportation Infrastructure and Urban Growth

Masters students should read the introduction and conclusion of Baum-Snow and skim to become familiar with methods and results. Doctoral students should read these more closely.

Nathaniel Baum-Snow, "Did Highways Cause Suburbanization?" *Quarterly Journal of Economics,* vol. 122, no. 2, 2007.

* Richard G. Funderburg, Hilary Nixon, and Marlon G. Boarnet "Linking Highway Improvements to Changes in Land Use with Quasi-Experimental Research Design: A Better Forecasting Tool for Transportation Decision-Making," Mineta Transportation Institute Report 09-02, available at http://www.transweb.sjsu.edu/MTIportal/research/publications/documents/Nixon%20Publication%20(with%20covers).pdf, NOTE: You only need to read pp. 1-5. This is review for students who read the Funderburg et al. article in PPD 634. The key insights and results are in pp. 1-5.

Week 3, Sept. 7: Transportation and Regional Economic Development

A. Perspectives from the New Economic Geography

* Brakman, Steven and Harry Garretsen. 2003. Rethinking the 'New' Geographical Economics. *Regional Studies* 37(6-7): 637-648.

Redding, Stephen J. 2010. The Empirics of the New Economic Geography. *Journal of Regional Science* 50,1: 297-311.

Week 3 (continued)

Optional (mostly for the Ph.D. students):

Davis, Donald R. and David E. Weinstein. 2002. Bones, Bombs, and Break Points: The Geography of Economic Activity. *American Economic Review* 92(5), 1269-1289.

B. Economic Analysis of SCAG's Regional Transportation Plan (required of everyone in Week 3)

* "Economic and Job Creation Analysis of 2012 RTP/SCS," Appendix to the 2012 Southern California Association of Governments Regional Transportation Plan, available at http://rtpscs.scag.ca.gov/Documents/2012/draft/SR/2012dRTP_EconomicAnalysis.pdf.

Hymel, Kent. 2009. Does traffic congestion reduce employment growth? *Journal of Urban Economics* 65: 127-135.

Rodrigo Nobrega and Bethany Stich Toward Long-Term Recovery in Mississippi: Understanding the Impact of the Transportation System on Economic Resilience *Leadership and Management in Engineering* October 2012 12(4): 299-308

Week 4, Sept. 14: Land Use and Travel Behavior

Note: Those of you who have taken PPD 634 have had this introduction and we will not cover the below "introductory" material. Please read below two items on your own if you have not covered this.

* Marlon Boarnet and Randall Crane, Travel by Design: The Influence of Urban Form on Travel, Oxford University Press, 2001, pp. 3-14.

* Randall Crane, "Cars and Drivers in the New Suburbs -- Linking Access to Travel in Neotraditional Planning," Journal of the American Planning Association, Winter, 1996, pp. 51-65.

How to Assess Land Use – Travel Evidence (this is the key idea for this week)

Deborah Salon, Marlon Boarnet, Susan Handy, Steven Spears, Gil Tal, "How Do Local Actions Affect VMT? A Critical Review of the Empirical Evidence," *Transportation Research Part D*, volume 17, issue 7, October, 2012, pp. 495-508.

For a web-based, publicly available version of the information summarized in the Salon et al., article, see: http://arb.ca.gov/cc/sb375/policies/policies.htm and click on "policy brief" by topic; the "background technical document" for each topic gives detailed additional information.

Walking in the Suburbs

M. Boarnet, K. Joh, W. Siembab, W. Fulton, and M. Nguyen, "Retrofitting the Suburbs to Increase Walking: Evidence from a Land Use – Travel Study," *Urban Studies*, volume 48, issue 1, January 2011, pp. 129-159.

Parking

Michael Manville and Donald Shoup, "People, Parking, and Cities," ACCESS number 25, 2004, University of California Transportation Center, available at http://www.uctc.net/access/access25.shtml.

Donald Shoup, "Cruising for Parking," ACCESS number 30, University of California Transportation Center, 2007, available at http://www.uctc.net/access/access30.shtml.

Health

James F. Sallis, Lawrence D. Frank, Brian E. Saelens, M. Katherine Kraft, "Active Transportation and Physical Activity: Opportunities for Collaboration on Transportation and Public Health Research," *Transportation Research A*, volume 38, 2004, pp. 249-268.

Required for Ph.D. students, optional for masters students

Marlon Boarnet. "Longer View: A Broader Context for Land Use and Travel Behavior, and a Research Agenda." *Journal of the American Planning Association,* volume 77, number 3, Summer, 2011, pp. 197-213.

Week 5, Sept. 21: Discuss Group Projects

II. Trends and Topics

Week 6, Sept. 28: Multi-Modalism, Beyond the Automobile City

Marlon Boarnet, Back to the Future in Transportation Planning, mimeo pre-publication draft working paper, in Planning Los Angeles edited by David C. Sloane, APA Planners Press, 2012, pp. 147-161.

Marlon G. Boarnet, "The Future of Urban Transportation: The Past will be Prologue," mimeo (working paper).

Christopher Hawthorne, "For Sunset, A New Dawn," Los Angeles Times, July 14, 2012, available at http://www.latimes.com/entertainment/news/arts/boulevards/la-ca-sunset-boulevard-los-angeles-index,0,4121790.htmlstory.

Required for Ph.D. students, optional for masters students

Edward Glaeser and Janet Kohlhase, "Cities, Regions, and the Decline of Transport Costs," *Papers in Regional Science* vol. 83, pp. 197-228, 2004.

Week 7, Oct. 5: Transportation and the Geography of Economic Opportunity

Harry J. Holzer. John M. Quigley, and Steven Raphael, "Public Transit and the Spatial Distribution of Minority Employment: Evidence from a Natural Experiment," *Journal of Policy Analysis and Management,* volume 22, number 3, 2003, pp. 415-442, 2003.

Yingling Fan, "The Planners' War Against Spatial Mismatch: Lessons Learned and Ways Forward," *Journal of Planning Literature,* May, 2012.

Evelyn Blumenberg. (2004). En-gendering effective planning: spatial mismatch, low-income women, and transportation policy. *Journal of the American Planning Association, 70*(3), 269-281.

Kate Lowe and Mariana Marmol, Worker Experiences of Accessibility in Post Katrina New Orleans, University of New Orleans working paper, available at http://scholarworks.uno.edu/cgi/viewcontent.cgi?article=1015&context=unoti_pubs.

Optional:

Katherine M. O'Regan and John M. Quigley, "Cars for the Poor," *ACCESS* Number 12, Spring, 1998, pp. 20-25. Berkeley, California: University of California Transportation Center, available at http://www.uctc.net/access/access12.shtml.

Week 8, Oct. 12: Bicycle Programs and Active Travel

Noreen McDonald, Is there a gender gap in school travel? An examination of US children and adolescents. Journal of Transport Geography, Jan., 2012, vol. 20, issue 1, pp. 80-86.

Liang Ma and Jennifer Dill, Do People's Perceptions of Neighborhood Bikeability Match "Reality," Journal of Transport and Land Use, 2017, available at https://jtlu.org/index.php/jtlu/article/view/796 .

Ralph Buehler and Jennifer Dill. 2016. Bikeway networks: A review of effects on cycling. Transport Reviews, 36,1: pp. 9-27.

Week 9, Oct. 19: Guest Lecture, Emile Haddad, CEO of FivePoint Development Company

Week 10, Oct. 26: Technology, Autonomous/Connected Vehicles, Sharing, and Transportation Network Companies

Note: Draft individual papers from group projects are due today.

Background on Market Structure in Transportation

Jose A. Gomez-Ibanez, *Commitment and Flexibility: Strategies for Regulating Privatized Infrastructure*, Taubman Center for State and Local Government, Kennedy School of Government, Harvard University, 1999.

Market Dynamics in Transportation Network Companies

Justin Fox, Uber isn't going to conquer the world. Bloomberg, June, 2016. https://www.bloomberg.com/view/articles/2016-06-29/uber-isn-t-going-to-conquer-the-world.

Autonomous and Connected Vehicles, Planning

Erick Guerra, When Autonomous Cars Take to the Road, *Planning*, The American Planning Association, May, 2015, https://www.planning.org/planning/2015/may/autonomouscars.htm.

Autonomous and Connected Vehicles, Labor Market Impacts

Jennifer Miller, "Autonomous Vehicles: Implications for Employment Demand," *The Bridge*, Fall, 2015, The National Academy of Engineering, pp. 5-11, https://www.nae.edu/File.aspx?id=142835.

Sharing and Transportation

Jennifer Dill, Early Insights into Peer-to-Peer Carsharing, http://trec.pdx.edu/blog/early-insights-peer-peer-carsharing.

Jennifer Dill, Steven Howland, and Nathan McNeil, A Profile of Peer-to-Peer Carsharing Early Adopters: Owners and Renters, 2016, Transportation Research Board Annual Meeting.

Note: Time will be devoted outside of class in Weeks 10 and 11 to discuss group projects. Meeting times to be arranged as Week 10 approaches.

III. Methods

Week 11, Nov. 2: Travel Data Collection

Examples of travel diaries (to be distributed)

Bricka, Stacey, Johanna Zmud, Jean Wolf, and Joel Freedman (2009). Household Travel Surveys with GPS; An Experiment. Transportation Research Record: Journal of the Transportation Research Board, No. 2105, pp. 51–56.

* "Introduction to the National Household Travel Survey," available at http://nhts.ornl.gov/introduction.shtml.

* Scott Crouter and Jacqueline Kerr, Powerpoint presentation on "An Introduction to Accelerometer Data Reduction and Processing," available at http://www.activelivingresearch.org/files/AccelerometerDataReduction_Workshop.pdf.

Miller, Harvey J. 2010. The Data Avalanche is Here. Shouldn't We Be Digging? *Journal of Regional Science* 50,1: 181-201.

Optional:

* U.S. Department of Transportation, Federal Highway Administration, 2009 National Household Travel Survey User's Guide, Version 1, February, 2011. Available at http://nhts.ornl.gov/2009/pub/UsersGuideV1.pdf.

* Dinesh John and Patty Freedson, 2012, "ActiGraph and Actical Physical Activity Monitors: A Peek under the Hood" *Medicine & Science in Sports & Exercise*: January 2012 - Volume 44 - Issue 1S - p S86–S89 doi: 10.1249/MSS.0b013e3182399f5e Appendix

* David R. Bassett Jr., Alex Rowlands, and Stewart G. Trost, "Calibration and Validation of Wearable Monitors" Medicine & Science in Sports & Exercise*: January 2012 - Volume 44 - Issue 1S.*

Week 12, Nov. 9: Travel Demand Estimation

Methods of Travel Demand Estimation

Robert A. Johnston, "The Urban Transportation Planning Process," *The Geography of Urban Transportation*, 3rd edition, eds Susan Hanson and Genevieve Giuliano, 2004, New York: The Guilford Press.

Travel Demand Analysis: Some Really Important Background on Systematic Errors in Travel Demand Estimation

Don Pickrell, "A Desire Named Streetcar: Fantasy and Fact in Rail Transit Planning," *Journal of the American Planning Association*, Spring 1992, volume 85, number 2, pp. 285-303.

Bent Flyvbjerg, Mette Skamris Holm, and Søren L. Buhl. "How (In)accurate Are Demand Forecasts in Public Works Projects? The Case of Transportation." *Journal of the American Planning Association*, vol. 71, no. 2, Spring 2005, pp. 131-146.

Political Pressures and Place-Based Economic Competition as an Explanation for Systematic Travel Demand (and Project Cost) Forecasting Errors

Sy Adler, "The Transformation of the Pacific Electric Railway: Bradford Snell, Roger Rabbit, and the Politics of Transportation in Los Angeles," in Urban Affairs Quarterly, 1991, pp. 51-86.

Week 13, Nov. 16 Transportation Project Benefit-Cost Analysis and High Speed Rail

Kenneth Small, "Project Evaluation," Chapter 5 in *Essays in Transportation Economics and Policy*, edited by Jose A. Gomez-Ibanez, William B. Tye, and Clifford Winston. Washington, D.C.: Brookings Institution Press, 1999, pp. 137-177.

Note: We may have some time in this class to discuss group projects. It depends on how quickly we get through the lecture material.

Javier Campos and Gines de Rus, "Some stylized facts about high-speed rail: A review of HSR experiences around the world," *Transport Policy*, vol. 16, pp. 19-28, 2009.

Andrew Ryder, "Viewpoint: High Speed Rail," Journal of Transport Geography, vol. 22, pp. 303-305, 2012.

David Levinson, "Viewpoint: Accessibility Impacts of High Speed Rail," Journal of Transport Geography, vol. 22, pp. 288-291.

Jin Murakami and Robert Cervero, "California High Speed Rail and Economic Development," Working Paper – University of California, Berkeley Center for Environmental Public Policy No. CEPP004 - December 2010, available at http://gspp.berkeley.edu/programs/highspeedrail/HSR10_Murakami_Cervero.pdf.

Elizabeth Deakin, " Environmental Impact of High Speed Rail in California," Working Paper – University of California, Berkeley Center for Environmental Public Policy No. CEPP001 - December 2010, available at http://gspp.berkeley.edu/programs/highspeedrail/HSR10_Deakin.pdf.

Optional (some thoughts on cost-benefit analysis, which link to Week 12 topic):

Chris Nash, "Enhancing the Cost Benefit Analysis of High Speed Rail," Working Paper – University of California, Berkeley Center for Environmental Public Policy No. CEPP002 - December 2010, available at http://gspp.berkeley.edu/programs/highspeedrail/HSR10_Nash.pdf.

Week 14, Nov. 23, no class, Thanksgiving Break

V. Group Projects

Week 15, Nov. 30: Present Group Projects