

## **PLAN 636: Urban Transportation Planning**

Spring 2017

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Course Meetings: Tuesday & Thursday 11:00-12:15, Philips 381

### **Course Description**

This course in transportation planning provides a broad overview of the field and is intended for students intending to concentrate in transportation planning or those who want a broad overview of the field. This is a particularly exciting time in transport where our options for travel are shifting rapidly with unclear impacts on infrastructure needs and the practice of transport planning.

This course prepares students to be effective practitioners or informed citizens in this uncertain environment. We'll focus on three aspects:

- *Key Issues:* 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 (congestions, air quality, shared mobility).
- *Institutions:* This section provides a broad introduction to the institutional structure of transportation planning in the US, particularly the interaction between federal, state, and regional decision makers and policy.
- *Analytic Tools:* Transportation planning relies heavily on the rational planning model. This section will 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 perform analyses common in the practice of transportation planning, including parking and travel demand analysis, traffic impact assessment.

Furthermore, you will be able to discuss authoritatively the key policy issues in current transportation planning debates.

**Course Requirements:**

**Analysis:** Students must complete 1 analytic assignment; options include:

- Parking Analysis
- Traffic Impact Analysis

**Essays:** Students must complete 3 essays; options include:

- MPO Plan Analysis
- Finance Analysis
- Triangle Transport History
- Triangle Light Rail
- Freight & Local Planning
- Complete Streets
- Equity

**Final Exam:** A synthetic final exam covering lecture materials and readings will be held during exam period. There will be no make-up exams. If you miss the exam due to an excused absence (illness, family emergency), there will be no make-up. When the exam is missed for an excused absence, the other course requirements will be re-weighted and the final exam will not be considered in your course grade. If you miss the final for an unexcused absence, you will receive a grade of 0 for the final 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 Spring Break.

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

**Grading**

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

**Late Assignments**

Each student has 3 ‘late days’ to use at their own discretion. 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 5 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
- Ortuzar & Willumsem, Modeling Transport
- Southworth & Ben-Joseph, Streets and the shaping of towns and cities
- Boarnet & Crane, Travel by Design: The Influence of Urban Form on Travel

### **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.

## Course Schedule

<b>Date</b>	<b>Topic</b>	<b>Assignments Due</b>
1-12	Course Overview & Transport History	
1-17	Transportation History	
1-19	Urban Economics	
1-24	Transportation and Land Use: Modern Connections	
1-26	Transit-Oriented Development & Value Capture (Bishop)	Essay: Triangle Transport History
1-31	Travel Patterns	
2-2	New Mobility: Shared Mobility	
2-7	New Mobility: Automated Vehicles (Clamman)	
2-9	Future of Travel Demand	Essay: Triangle Light Rail
2-14	Transportation Planning Process	
2-16	Transportation Planning Process	Essay: Shared Mobility
2-21	Travel Demand Modeling	Essay: Automated Vehicles
2-23	Congestion	
2-28	Equity & Environmental Justice	
3-2	Environmental Impacts	Essay: Long Range Plans
3-7	Goods Movement (Howlett, invited)	Analytic: Travel Demand
3-9	Gender & Travel (Kash)	
3-14 & 16	<b>Spring Break</b>	
3-21	Transportation Finance: Current Status	
3-23	Transportation Finance: Future Alternatives	
3-28	Pedestrian & Bicycle (Pucher)	Essay: Freight & Local Planning
3-30	Pedestrian & Bicycle (Pucher)	Essay: Equity
4-4	Parking	
4-6	Street Design	Essay: Finance
4-11	Designing for Safety	
4-13	Traffic Impact	Analytic: Parking
4-18	New Approaches to Traffic Impact	
4-20	Catch-up & Putting It All together	Essay: Complete Streets Chapel Hill
4-25	Practitioner Visit: Dean Ledbetter, NCDOT	
4-27	Planning the Uncertain Future & Exam Review	Analytic: Traffic Impact
5-1	<b>Final Exam, Noon</b>	

## Readings

\*\* Indicates required reading.

Books not posted to Sakai are available via UNC libraries: <http://library.unc.edu/>

### 1. Overview & Major Themes

\*\*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.

Banister, D. (2008) The Sustainable Mobility Paradigm. *Transport Policy* 15(2): 73-80.

### 1. Transportation History

#### Day 1: Walking City and the Rise and Fall of Transit

\*\*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

<http://www.uctc.net/access/30/Access%2030%20-%202002%20-%20Horse%20Power.pdf>

Foster, Mark. 1981. *From Streetcar to Superhighway: American City Planners and Urban Transportation, 1900-1940*. Philadelphia: Temple University Press.

Leroy, S. and J. Sonstelie. 1983. Paradise Lost and Regained: Transportation Innovation, Income and Residential Location. *Journal of Urban Economics* 13: 67-89.

America on the Move, Smithsonian. <http://americanhistory.si.edu/onthemove/index.html>

#### Day 2: The Rise of the Auto

\*\*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.

\*\*Brown, Jeffrey, Eric A. Morris, and Brian D. Taylor. 2009. Paved with Good Intentions: Fiscal Politics, Freeways and the 20th Century American City. Access 35

[http://uctc.net/access/35/access35\\_Paved\\_with\\_Good\\_Intentions\\_Fiscal\\_Politics\\_.pdf](http://uctc.net/access/35/access35_Paved_with_Good_Intentions_Fiscal_Politics_.pdf)

Baum-Snow, N. 2007. Did Highways Cause Suburbanization? *Quarterly Journal of Economics* 122(2): 775-805.

Altshuler, A. and D. Luberoff. 2003. *Mega-Projects: The Changing Politics of Urban Public Investment*. Brookings Institution Press.

Glaeser, E. and J. Kohlhase. 2004. Cities, regions and the decline of transport costs. *Papers in Regional Science* 83(1):197-228.

Wachs, M. 2013. Turning cities inside out: transportation and the resurgence of downtowns in North America. *Transportation* 40(6).

Wells, Christopher W. 2006. The Changing Nature of Country Roads: Farmers, Reformers, and the Shifting Uses of Rural Space, 1880-1905. *Agricultural History* 80(2): 143-166.

Wachs, 1984, Autos, Transit, and the Sprawl of Los Angeles: The 1920s, JAPA 50(3)  
[http://www.des.ucdavis.edu/faculty/handy/TTP220/Wachs\\_Streetcar\\_Suburbs.pdf](http://www.des.ucdavis.edu/faculty/handy/TTP220/Wachs_Streetcar_Suburbs.pdf)

## **2. Urban Economics**

\*\*O'Sullivan, A. Introduction to Land Rent and Land Use and Land Use in a Monocentric City. *Urban Economics*.

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

Leroy, S. and J. Sonstelie. 1983. Paradise Lost and Regained: Transportation Innovation, Income and Residential Location. *Journal of Urban Economics* 13: 67-89.

Glaeser, Edward L., Matthew E. Kahn, and Jordan Rappaport. 2008. Why do the poor live in cities? The role of public transportation. *Journal of Urban Economics* 63, no. 1: 1-24.

Alonso, William. 1964. *Location and Land Use*. Cambridge: Harvard University Press.

Glaeser, Edward L. and Janet E. Kohlhase. Cities, Regions, and the Decline of Transport Costs. 2003. <http://www.economics.harvard.edu/pub/hier/2003/HIER2014.pdf>

## **3. Transportation and Land Use: Modern Connections**

\*\*Ewing, R. and Cervero, R. 2010. Travel and the built environment: A meta-analysis. *Journal of the American Planning Association* 76 (3):265-294.

\*\*Guerra, E. and R. Cervero. 2012. Transit and the "D" Word. *Access* 40.  
[http://www.uctc.net/access/40/access40\\_transitanddensity.pdf](http://www.uctc.net/access/40/access40_transitanddensity.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>

Bruegmann, Robert. 2008. "Point: Sprawl and Accessibility," *Journal of Transport and Land Use*, 1(1): 5-11.(<https://www.jtlu.org/index.php/jtlu/article/view/30>)

Crane, Randall. 2008. "Counterpoint: Accessibility and Sprawl," *Journal of Transport and Land Use*, 1(1): 13-19.(<https://www.jtlu.org/index.php/jtlu/article/download/56/21>)

Echenique, M., et al. 2012. Growing Cities Sustainably: Does Urban Form Really Matter? *Journal of the American Planning Association* 78(2):121-137. 10.1080/01944363.2012.666731

<http://environmentalresearchweb.org/blog/2012/05/does-urban-form-really-matter.html>

<http://www.theatlanticcities.com/design/2012/07/new-research-finds-urban-form-plays-little-role-sustainability/2680/>

<http://blog.metrotrends.org/2012/08/simulating-sprawl-reduction-england/>

<http://www.newgeography.com/content/002934-questioning-messianic-conception-smart-growth>

Boarnet, M. 1996. The Direct and Indirect Economic Effects of Transportation Infrastructure. <http://www.uctc.net/papers/340.pdf>

Giuliano, G. 2004 Land Use Impact of Transportation. *The Geography of Urban Transportation*, 3<sup>rd</sup> Ed. Handy and Giuliano.

Salon, Deborah, Marlon G. Boarnet, Susan Handy, Steven Spears, and Gil Tal. 2012. How do local actions affect VMT? A critical review of the empirical evidence. *Transportation Research Part D: Transport and Environment* 17(7): 495–508.

Bento, A.M., Cropper, M.L., Mobarak, A.M., Vinha, K., 2005. The Effects of Urban Spatial Structure on Travel Demand in the United States. *The Review of Economics and Statistics* 87: 466–478.

Ewing, R., K. Bartholomew, etc. 2007. *Growing Cooler: The Evidence on Urban Development and Climate Change*. Washington: Urban Land Institute.

Brownstone, D. 2008. Key Relationships Between the Built Environment and VMT. SR 298: Driving and the Built Environment: The Effects of Compact Development on Motorized Travel, Energy Use, and CO2 Emissions.

Crane, Randall (1998). "Travel by Design?" *Access*, 12, 2-7.  
<http://www.uctc.net/access/access12.shtml>

Melia, S., G. Parkhurst, H. Barton. 2011. The paradox of intensification. *Transport Policy* 18(1): 46-52.

Mohring, H. "Land Values and the Measurement of Highway Benefits." *J Polit Econ* 69 (1961): 236-249.

Muro, M. and R. Puentes. "Investing in a Better Future: A Review of the Fiscal and Competitive Advantages of Smarter Growth Development Patterns." Center on Urban and Metropolitan Policy, Brookings Institution, 2004

#### **4. Transit Oriented Development & Value Capture**

\*\*Page, S., B. Bishop, and W. Wong. 2016. Guide to Value Capture Financing for Public Transportation Projects. TCRP Research Report 190. <https://www.nap.edu/download/23682#>; Summary and Chapter 1.

\*\*Guerra, E. and R. Cervero. 2012. Transit and the "D" Word. *Access* 40.  
<http://www.accessmagazine.org/articles/spring-2012/transit-d-word/>

## 5. Travel Patterns

**\*\***(skim) Santos, A. et al Summary of Travel Trends: 2009 National Household Travel Survey. <http://nhts.ornl.gov/2009/pub/STT.pdf>

**\*\***Pisarski, Commuting in America, 2013. <http://traveltrends.transportation.org/Pages/default.aspx>, Executive Summary.

Chatman, D. and N. Klein. 2009. "Immigrants and Travel Demand in the United States: Implications for Transportation Policy and Future Research." *Public Works Management & Policy* 13(4): 312-327.

Socioeconomics of Urban Travel: Evidence from the 2009 National Household Travel Survey with Implications for Sustainability *John L. Renne and Peter Bennett*

## 6. Shared Mobility

**\*\***Shared Mobility and the Transformation of Public Transit. <https://www.apta.com/resources/reportsandpublications/Documents/APTA-Shared-Mobility.pdf>

**\*\***What is Shared-Use Mobility? <http://sharedusemobilitycenter.org/what-is-shared-mobility/>

Johnson, C. and J. Walker. Peak Car Ownership. Rocky Mountain Institute. [https://rmi.org/Content/Files/CWRRMI\\_POVdefection\\_ExecSummary\\_L12.pdf](https://rmi.org/Content/Files/CWRRMI_POVdefection_ExecSummary_L12.pdf)

Shaheen, S. Mobility and the Sharing Economy. *Transport Policy* 51 (special issue)

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.

Kent, J. and R. Dowling. 2016. The Future of Paratransit and DRT: Introducing Cars on Demand. In *Paratransit: Shaping the Flexible Transport Future*.

(skim) Shared Use Mobility Reference Guide. <http://sharedusemobilitycenter.org/what-is-shared-mobility/>

## 7. Automated 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. <http://static-tti-tamu-edu.s3-website-us-east-1.amazonaws.com/tti.tamu.edu/documents/PRC-15-49-F.pdf>

## 8. Future of Travel Demand



\*\*McDonald, N. 2015. Are Millennials Really the ‘Go Nowhere’ Generation? *Journal of the American Planning Association* 81(2): 90-103.

\*\*Klein, N. and M. Smart. 2017. Millennials and car ownership: Less money, fewer cars. *Transport Policy* 53: 20-29.

Garikapati, V., R. Pendyala, E. Morris, P. Mokhtarian, N. McDonald. In Press. Activity Patterns, Time Use, and Travel of Millennials: A Generation in Transition? *Transport Reviews*.

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*

## **9. 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>

Chapple, K. and C. Makarewicz. 2010. Restricting new infrastructure. *Access* 36

Arnstein, Sherry R. 1969. "A Ladder of Citizen Participation," *Journal of the American Institute of Planners*. 35(4): 216-224. <http://lithgow-schmidt.dk/sherry-arnstein/ladder-of-citizen-participation.html>

Transportation 4 America. 2011. Transportation101: An Introduction to Federal Transportation Policy. <http://t4america.org/docs/Transportation%20101.pdf>

Cheat Sheet for MAP-21 <http://www.transportationissuesdaily.com/cheat-sheet-for-map21-new-federal-transportation-bill/>

MAP-21 Summaries and Reports <http://www.transportationissuesdaily.com/new-map-21-reports-and-summaries/>

## **10. Travel Demand Modeling**

\*\*Johnston. *Geography of Urban Transportation*, Ch. 5

\*\*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).

Beimborn, Kennedy, and Schaefer. Inside the Black Box: Making Transportation Models Work for Livable communities.

Ortuzar & Willumsen, *Modeling Transport*, Ch. 1

Bhat, C. and F. Koppelman. Activity Based Modeling of Travel Demand, Chapter 3  
[http://orfe.princeton.edu/~alaink/NJ\\_aTaxiOrf467F12/Papers/lit%20review/TSHANDBK.pdf](http://orfe.princeton.edu/~alaink/NJ_aTaxiOrf467F12/Papers/lit%20review/TSHANDBK.pdf).

Meyer and Miller. Chapter 5 Transportation Demand Analysis. <http://mtsplan.com/services.html>

Flyvbjerg, Bent, Mette Skamris Holm, and Søren L. Buhl. 2005. How (In)accurate Are Demand Forecasts in Public Works Projects? The Case of Transportation. *Journal of the American Planning Association*. 71(2): 131-146.

Transportation Research Board. 2007. "Shortcoming of Current Forecasting Processes," Special Report 288: Metropolitan Travel Forecasting: Current Practice and Future Direction, National Research Council, pp. 65-89.

The Accuracy of Transit System Ridership Forecasts and Capital Cost Estimates  
[http://www.trforum.org/forum/downloads/2009\\_13\\_RidershipForecasts\\_paper.pdf](http://www.trforum.org/forum/downloads/2009_13_RidershipForecasts_paper.pdf)

Bartholomew and Ewing. Integrated Transportation Scenario Planning. Summary Report  
[http://faculty.arch.utah.edu/bartholomew/Integrated\\_Transp\\_Scenario\\_Planning.html](http://faculty.arch.utah.edu/bartholomew/Integrated_Transp_Scenario_Planning.html)

Transportation Research Board. 2007. "Current State of the Practice," Special Report 288: Metropolitan Travel Forecasting: Current Practice and Future Direction, National Research Council, pp. 46-64.

Hatzopoulou & Miller. Transport policy evaluation in metropolitan areas: The role of modeling in decision-making. *Transportation Research Part A* 43(4): 323

Koppelman. "Innovations in Travel Modeling" *Access* 27.  
<http://www.uctc.net/access/27/Access%2027%20-%2006%20-%20Innovations%20in%20Traffic%20Modeling.pdf>

Mackie, Peter and John Preston (1998). Twenty-One Sources of Error and Bias in Transport Project Appraisal. *Transport Policy* 5:1-7.

Lee. 1973. "Requiem for Large Scale Models." *Journal of the American Institute of Planners* 39(3)

Wachs. 1985. "Ethical Dilemmas in Forecasting for public Policy in Ethics in Planning, Martin Wachs, Editor. New Brunswick, NJ: Center for Urban Policy Research, pp. 246-258.

Four Perspectives on Ethics. 1989. *Journal of the American Planning Association* 55(4): 474-483 (especially Wachs p. 476.)

Dewar and Wachs. 2006. Transportation planning, climate change, and decision making under uncertainty. <http://onlinepubs.trb.org/onlinepubs/sr/sr290DewarWachs.pdf>

Madanat et al Report on CA High Speed Rail  
<http://www.its.berkeley.edu/publications/UCB/2010/RR/UCB-ITS-RR-2010-1.pdf>

Rhodes, Sarah. 2012. "Ride Then Decide." *Planning* December 2012.

How Costs Soared at the \$4 Billion Train Station for the World Trade Center. New York Times. <http://www.nytimes.com/2014/12/03/nyregion/the-4-billion-train-station-at-the-world-trade-center.html?hp&action=click&pgtype=Homepage&module=photo-spot-region&region=top-news&WT.nav=top-news> How Costs Soared at the \$4 Billion Train Station for the World Trade Center.

## 11. Congestion

\*\*Downs. “Why Traffic Congestion Is Here to Stay...and Will Get Worse. Access 25.

<http://www.uctc.net/access/25/Access%2025%20-%2004%20-%20Traffic%20Congestion%20is%20Here%20to%20Stay.pdf>

\*\*Taylor. “Rethinking Traffic Congestion.” Access 21.

<http://www.uctc.net/access/21/Access%2021%20-%2003%20-%20Rethinking%20Congestion.pdf>

Varaiya. “What We’ve Learned About Highway Congestion” Access 27.

<http://www.uctc.net/access/27/Access%2027%20-%2002%20-%20What%20We%27ve%20Learned.pdf>

Cervero. “Are Induced-Travel Studies Inducing Bad Investments?” Access 22.

<http://www.uctc.net/access/22/Access%2022%20-%2004%20-%20Induced%20Travel%20Studies.pdf>

Small. Unnoticed Lessons From London. Access 26.

<http://www.uctc.net/access/26/Access%2026%20-%2003%20-%20Road%20Pricing%20and%20Public%20Transit.pdf>

Harsman, B. and J. Quigley. 2011. Political and Public Acceptability of Congestion Pricing: Ideology and Self-Interest in Sweden. Access 38.

[http://www.uctc.net/access/38/access38\\_congestion\\_pricing\\_sweden.pdf](http://www.uctc.net/access/38/access38_congestion_pricing_sweden.pdf)

## 12. Equity and Environmental Justice

\*\*Cairns, S., J. Greig, M. Wachs. 2003. Environmental Justice & Transportation: A Citizen’s Handbook. <http://www.escholarship.org/uc/item/66t4n94b#page-1>

\*\*Blumenburg. 2003. Transportation Costs and Economic Opportunity Among the Poor,

Access 23 40-41. <http://www.uctc.net/access/23/Access%2023%20-%2007%20-%20THE%20ACCESS%20ALMANAC.pdf>

\*\*Bullard, Robert and Glenn Johnson. 1997. *Just Transportation*, Chapter 1.

Decker. Stuck at Home: When Driving Isn’t a Choice. Access 29.

<http://www.uctc.net/access/29/Access%2029%20-%2005%20-%20Stuck%20at%20Home.pdf>

Litman, Todd. Evaluating Transportation Equity: Guidance for Incorporating Distributional Impacts in Transportation Planning. <http://www.vtpi.org/equity.pdf>

Bullard, Robert and Glenn S. Johnson. 1997. *Just Transportation: Dismantling Race and Class Barriers to Mobility*. Stony Creek, Ct: New Society Publishers.

Schweitzer, Lisa. *Equity of Evolving Transportation Finance Mechanisms*. Washington, DC: Transportation Research Board. <http://onlinepubs.trb.org/onlinepubs/sr/sr303.pdf>

### 13. Environmental Impacts

\*\*AASHTOs – The NEPA Process.

[http://environment.transportation.org/environmental\\_issues/nepa\\_process/](http://environment.transportation.org/environmental_issues/nepa_process/)

\*\*Transportation Conformity: A Basic Guide for State and Local Officials

[http://www.ampo.org/assets/25\\_bguide05.pdf](http://www.ampo.org/assets/25_bguide05.pdf)

(Skim) DOT Report to Congress

[http://ntl.bts.gov/lib/32000/32700/32779/DOT\\_Climate\\_Change\\_Report\\_-\\_April\\_2010\\_-\\_Volume\\_1\\_and\\_2.pdf](http://ntl.bts.gov/lib/32000/32700/32779/DOT_Climate_Change_Report_-_April_2010_-_Volume_1_and_2.pdf)

Lutsey, Nic. 2012. “New Automobile Regulations.” *Access* 41: 2-9.

[http://uctc.net/access/41/access41\\_fueleconomy.pdf](http://uctc.net/access/41/access41_fueleconomy.pdf)

California Changes to CEQA and LOS: <http://www.citylab.com/commute/2014/07/transit-projects-are-about-to-get-much-much-easier-in-california/374049/>;

(skim) [http://www.opr.ca.gov/s\\_sb743.php](http://www.opr.ca.gov/s_sb743.php)

Lajunen, A. and T. Lipman. 2016. Lifecycle Cost Assessment and Carbon Dioxide Emissions of Diesel, Natural Gas, Hybrid Electric, Fuel Cell Hybrid, and Electric Transit Buses. *Energy*.

### 14. Goods Movement

\*\*Levinson, Marc. 2006. *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger*. Princeton, NJ. Chapter 1.

\*\*Glaeser, Edward L. and Janet E. Kohlhase. Cities, Regions, and the Decline of Transport Costs. 2003. <http://www.economics.harvard.edu/pub/hier/2003/HIER2014.pdf>

NCFRP 23.

Feuer, A. 2012. On the waterfront, rise of the machines. *New York Times* September 28, 2012. <http://www.nytimes.com/2012/09/30/nyregion/in-new-yorks-port-the-rise-of-the-machines.html?pagewanted=all>

Ogden, Kenneth. 1992. *Urban Goods Movement: a Guide to Policy and Planning*. Brookfield, Vt. Chapter 1.

Woudsma, Clarence. 2001. Understanding the Movement of Goods, Not People: Issues, Evidence and Potential.? *Urban Studies* 38(13): 2439-2455.

Hesse, Markus and Jean-Paul Rodrigue. 2004 The Transport Geography of Logistics and Freight Distribution. *Journal of Transport Geography* (12)3.

Leinbach, Thomas. 2004. City Interactions: The Dynamics of Passenger and Freight Flows?, in *The Geography of Urban Transportation*, Third Edition, Susan Hanson and Genevieve Giuliano, Editors. New York: Guilford Press. Pages 30-58.

Erie, Steven P. 2004. Weathering Storms at the Ports. in *Globalizing L.A.: Trade, Infrastructure, and Regional Development*. Stanford, CA.

Department of Transportation, Federal Highway Administration. 1997 Federal Highway Cost Allocation Study Final Report. Executive Summary.

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