

PLAN 637 Public Transportation Strategy and Planning

Spring 2008

Website: Please visit blackboard

Location: DA 101

Day and Time: Monday 11-1:45

Instructor

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DESCRIPTION

This course focuses on public transportation strategy and planning, with an emphasis on how land uses can be leveraged to improve the efficiency and effectiveness of transit service. The course is divided into four sections: Introduction to transit planning, short and medium-term planning and analysis, land development planning as a long-term strategic alternative for transit, and transit-oriented land uses. The first two sections of the course cover the historical development of transit, organizational structure, ridership trends, performance measures, and forecasting methodologies. The second half of the course examines: a) the transit impacts of different land use patterns and land use management measures, and b) the land use impacts of transit.

COURSE OBJECTIVES

This course will provide expertise in three core areas: measurement and analysis of transit performance, the travel behavior impacts of urban form at the micro and macro levels, and linking transit service and land use policy. By the end of the course, students will be able to:

- Identify the main forces influencing the provision of public transportation services in North America
- Assess the performance of public transportation systems using different methodological approaches
- Forecast the short-term effects of transit service expansions on transit ridership and revenue
- Predict the influence of various settlement patterns on transit service performance
- Develop a working typology of transit-oriented area
- Examine and critique research tools used to examine the connection between land use and travel behavior

FORMAT

This course combines lectures and discussions. Enrollment has been limited to 20 students to ensure active student participation. Students taking this class should expect to develop original work (a review or a research paper) on a transit-related issue.

REQUIREMENTS AND GRADING

Students will prepare two individual assignments, one group assignment, and a final paper (and presentation), each worth 25% of the grade. Additional handouts will describe the assignments in detail.

Assignment 1:	Transit agency performance analysis (Group)
Assignment 2:	Ridership forecasting assignment (Individual)
Assignment 3:	Cost estimation assignment (Individual)
Final Paper + Pres.:	Policy paper (Individual)

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."

To meet this standard in this course, note the following: in written work, all ideas (as well as data or other information) that are not your own must be cited. Note that ideas that require citation may not have been published or written down anywhere. Discussion of assignments with peers is strongly encouraged, but the final material submitted must be individual.

READINGS

The required readings are:

- Cervero, R. The transit metropolis: a global inquiry. Washington, D.C.: Island Press, 1998; copies may be available at Student Stores (see amazon.com for additional copies)
- PDF files available through BlackBoard or the course's website (when downloading files, please use your Onyen and password to authenticate)

READINGS BY TOPIC

1. Introduction to Transit Planning

Issues In Transit Planning: Overview and Questions

Pucher, J. (2004). Public Transportation, in *The Geography of Urban Transportation*, 3d edition Hanson, S. and Giuliano, G. (Eds), Chapter 8, 199-236. Guilford Press: New York.

Transit Service Characterization –Key Points

Cervero, R (1998). The Transit Metropolis: A Global Inquiry, Island Press: Washington D.C. 26-61.

Optional

Sussman, J.M.(2000). *Introduction to Transportation Systems*, Artech House: Boston, 59-113. (Book on reserve)

Evolution of Transit

Black, A. (1995). The History of Urban Transit, Urban Mass Transportation Planning. New York: McGraw-Hill, Inc. 13-40. (Black1995.pdf)_

Rubin, T., Moore, J. and Lee. S. (1999) Ten myths about US urban rail systems. *Transport Policy*, 6(1): 57-73. (Rubin1999.pdf)

Stanger, R. (2000) Ten myths about US urban rail systems by Thomas Rubin, James Moore, and Shin Lee –a rejoinder. *Transport Policy*, 303-305. (Stanger2000.pdf)

Optional

Jones, D. (1985). Transit's Growth and Decline: A Play in Eight Acts, Urban Transit Policy: An Economic and Political History. Englewood Cliffs, NJ: Prentice-Hall. 28-95. (Book on reserve)

Plane, D. A. (1995). The Great Transportation Conspiracy, in The Geography of Urban Transportation, Second Edition, Susan Hanson, Editor. New York: The Guilford Press. 445-447. (Book on reserve)

Slater, C. (1997) General Motors and the Demise of Streetcars, *Transportation Quarterly*, Vol. 51. No. 3. 45-66. (Slater.pdf)

Main Transit Modes

Vuchic, V., (1992). Urban Passenger Transportation Modes. in Public Transportation, Second Edition, Gray and Hoel. Editors. Englewood Cliffs, NJ: Prentice-Hall. 71-113. (Vuchic1992.pdf)

Case Study

Stanger, R. 2007. An Evaluation of Los Angeles' Orange Line Busway, 10(1): 103-119.

Organizational Arrangements for Providing Transit Service

Wilson, N.H.M. (1990). Organizational Options for Public Transportation in the U.S. *Transportation Planning and Technology*, Vol.15, 405-414. (Wilson1990.pdf)

Transportation Research Board Special Report 258 (2001). Contracting for Bus and Demand-Responsive Transit Services: A Survey of U.S. Practice and Experience, National Academy Press: Washington D.C, Executive Summary E1-E8. (SR258.pdf)

Service Design: Network and Route Types

Canadian Urban Transit Association (1994) "Service Design" in Canadian Transit Handbook. Third Edition. Canadian Urban Transit Association: Toronto, 6.1-6.23. (CTH1994.pdf)

2. Transit Service Short and Medium-Term Planning and Analysis

Data Availability, Data Collection Techniques, and APTS

Furth, P. G. (2000) Data analysis for bus planning and monitoring. TCRP Synthesis 34, National Academy Press. 7-23. (Furth2000.pdf)

Transit Service Standards and Performance Measurement

Fielding, G. J. (1987) Managing Public Transit Strategically. Jossey-Bass: Sand Francisco, 59-87. (Fielding1987.pdf)

Toronto Transit Commission (1990). *Service Standards and the Process for Evaluating Routes and Services*, 1-18. (TTC1990.pdf)

Methods For Estimating Ridership Impacts of Service Changes

Mayworm, P., Lago, A. M. and McEnroe, J. M. (1980) *Patronage Impacts of Changes in Transit Fares and Services (Executive Summary)*, Department of Transportation (UMTA), Washington DC, 7-18. (Mayworm1980.pdf)

Kuby, M. Barranda, A. and Upchurch, C. (2004) Factors influencing light-rail station boardings in the United States. *Transportation Research Part A*, 38, 223-247. (Kuby2004.pdf)

Tae Hoon Oum et al, (1991) "Concepts of Price Elasticities of Transport Demand and Recent Empirical Estimates". *Journal of Transport Economics and Policy*, 139-154. (Tae1991.pdf)

Goodwin, P.B. (1991)"A Review of New Demand Elasticities with Special Reference to Short and Long Run Effects of Price Changes". *Journal of Transport Economics and Policy*, 155-169. (Goodwin1991.pdf)

TTA Standards, Service Monitoring, and Forecasting

Costs of Providing Transit Service

Pushkarev, B. and J. Zupan (1977). From "Transit Supply: Operating and Capital Costs" in Public Transportation and Land Use Policy. Indiana University Press: Bloomington, 75-104. (Pushkarev1977.pdf)

3. A Long-term Transit Strategy: Focus on Land Use

TRANSIT'S INFLUENCE ON LAND USES

The Connection Between Transit and Land Use

Pickrell, Don (1999). "Transportation and land use," in Essays in Transportation Economics and Policy: A Handbook in Honor of John R. Meyer, Gomez-Ibanez, Tye, and Winston, Editors. Washington, D.C.: Brookings Institution Press. Pages 403-435. (Pickrell1999.pdf)

Land Use Effects of High-Capacity Transit Systems

Parsons Brinkerhoff (1996) Transit and Urban Form, Volume 1, Chapter 3. TCRP Report 16 , National Academy Press. 26-40. (PB1996.pdf)

Cervero R, and J. Landis (1997). Twenty years of the Bay Area Rapid Transit System: Land use and development impacts. *Transportation Research Part A*, Volume 31, No. 4, 309-333. (Cervero_Landis.pdf)

Rodríguez, D. and Targa F. (2004) Value of accessibility to Bogotá's Bus Rapid Transit System. *Transport Reviews*, Vol. 24No. 5, 587-610. (Rodriguez2004.pdf)

Optional

Giuliano, Genevieve (1995). "Land use impacts of transportation investments: highways and transit," in The Geography of Urban Transportation, Second Edition, Susan Hanson, Editor. New York: Guilford Press. Pages 305-341. (Book on reserve)

LAND USES' INFLUENCE ON TRANSIT

Transit Effects of Land Use

Lund, H. (2006). Reasons for living in a transit-oriented development, and associated transit use. *Journal of the American Planning Association* 72 (3):357-366.

Brown, B, and Werner, C. (2007). A New Rail Stop, *American Journal of Preventive Medicine*, 33(4), 306-309.

Besser LM, Dannenberg AL. (2005) Walking to public transit: steps to help meet physical activity recommendations. *American Journal of Preventive Medicine*, 29:27- 80.

Crane, R. (2000) The influence of urban form on travel: An interpretive review; *Journal of Planning Literature*. Vol. 15, No. 3, 3-23. (Crane.pdf)

Khattak, A. and Rodríguez, D. (2005) Travel behavior in neo-traditional neighborhood developments: A case study in USA. *Transportation Research Part A*, 39, 481-500. (Khattak2005.pdf)

Optional

Handy, S (1996). Methodologies for exploring the link between urban form and travel behavior, *Transportation Research Part D*, Vol. 1, No. 2, 151-165 (Handy.pdf)

Transit service and the poor

Sanchez, T. Peng, Z. and Shen Q. (2002) Transit Mobility, Jobs Access, and Low-Income Labor Participation in U.S. Metropolitan Areas, Report from NSF Contract # 0078686. (Sanchez.pdf)

Blackman, A. Testing the Rhetoric. (2002) Location-efficient mortgages may have more costs and risks than proponents claim. *Regulation*, 34-38. (Blackman.pdf)

Kahn, M. E. (2007). Gentrification trends in new transit-oriented communities: Evidence from 14 cities that expanded and built rail transit systems. *Real Estate Economics* 35 (2):155-182.

Cameron, M. (1997). Transportation efficiency and equity in Southern California: Are they compatible? Just Transportation, Bullard and Johnson (Eds.), New Society Publishers, Gabriola Island (CA), pp. 53-67. (Cameron1997.pdf)

Mann, E. (1997) Confronting transit racism in Los Angeles. Just Transportation, Bullard and Johnson (Eds.), New Society Publishers, Gabriola Island (CA), pp. 68-83. (Mann1997.pdf)

4. Transit-Oriented Land Uses

Cervero, R. Seskin, R. and J. Zupan. (1996) TCRP Report 16 Transit and Urban Form, Volume 2, Chapters 2. TCRP Report 16, National Academy Press. 4-21. (TCRP16.pdf)

Transit Oriented Developments

Cervero R.. (2002) Transit-Oriented Development and Joint Development in the US: A Literature Review. Transit Cooperative Research Program Research Results Digest. (tcrp_rrd_52.pdf)

Porter, D. R (1998). Transit-focused development: A progress report. *Journal of the American Planning Association*, Vol. 64, No. 4, 475-488 (Porter.pdf)

Case Study:

Boarnet M., and N. Compin (1999). Transit-oriented development in San Diego County - The incremental implementation of a planning idea. *Journal of the American Planning Association*, Vol. 65, No. 1, 80-95. (Boarnet_Compkin.pdf)

Parking in TODs

Willson, R. (2005). Parking Policy for Transit-Oriented Development: Lessons for cities, Transit Agencies and Developers, *Journal of Public Transportation*, 8(5): 79-95.

Shoup, D. C. (1995) An opportunity to reduce minimum parking requirements. *Journal of the American Planning Association*, Vol. 61, No.1, 14-29. (Shoup.pdf)

Chesapeake Bay Foundation Report, (2001) Building Healthier Neighborhoods with Metrorail: Rethinking Parking Policies. 1-45. (Chesapeake2001.pdf)

The Transit Metropolis

Cervero, R (1998). The Transit Metropolis: A Global Inquiry, Island Press: Washington D.C. 1-25.

Policy and the Transit Metropolis

Cervero, R (1998). The Transit Metropolis: A Global Inquiry, Island Press: Washington D.C. 62-106.

International Examples

Cervero, R (1998). The Transit Metropolis: A Global Inquiry, Island Press: Washington D.C. 107-394, 402-411.

Optional

Kenworthy, J. and Laube, F. (1999) Patterns of automobile dependence in cities: an international overview of key physical and economic dimensions with some implications for urban policy, *Transportation Research Part A*, Vol. 33, Nos. 7-8, 691-723. (Kenworthy_Laube.pdf)

Gakenheimer, R. (1999) Urban mobility in the developing world, *Transportation Research Part A*, Vol. 33, No. 7-8, 671-689. (Gakenheimer.pdf)

SUMMARY SCHEDULE OF SESSIONS AND TOPICS

No.	Date	Topic	Comment
1	1/21	No class –Transportation Research Board Annual Meeting	
Part 1. Introduction to Transit Planning			
2	1/28	Transit Planning Issues and Service Characterization	
3	2/4	Evolution of Transit and Main Transit Modes	Assignment 1 out
4	2/11	Organizational arrangements + Service Design: Network And Route Types	
Part 2: Transit Service Short and Medium-Term Planning and Analysis			
5	2/18	Data Availability And Data Collection Techniques + Transit Service Performance & Standards	Assignment 2 out
6	2/25	Standards continued, TTA Standards, Service Monitoring, and Forecasting (Guest)	Assignment 1 due
7	3/3	Ridership impacts of service changes + Cost impacts of service changes	Assignment 3 out
8	3/10	Spring break	
Part 3. A Long-term Transit Strategy: Focus on Land Use			
9	3/17	The Connection Between Transit and Land Use + Land Use Effects of High-Capacity Transit Systems	Assignment 2 due
10	3/24	Trip-making Behavior Effects of Land Use + Residential location + PA	
11	3/31	Transit service and poverty	
12	4/7	Transit-Oriented Land Uses: TODs	Assignment 3 due
13	4/14	The Transit Metropolis + Policy	
14	4/21	Final Paper Presentations	Presentations and paper due