University of Washington
Department of Urban Design and Planning
Winter 2024

URBDP 532

Current Topics in Transportation Planning and Policy

INSTRUCTOR: Professor Qing Shen
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CLASS HOURS: Monday & Wednesday 10:30—11:50 AM; Classroom: Gould Hall 114

OFFICE HOURS: Tuesday 2:30-3:30, or by appointment

Course Description

Today, more than ever, transportation plays a key role in creating economically and socially vibrant cities. At the same time, transportation remains a main contributing factor to growing disparities in access to economic and social opportunities and a major source of air pollution and greenhouse gas emission, which causes global climate change. The COVID-19 pandemic generated an unprecedent impact on transportation, significantly reducing the demand for public transit and other forms of shared mobility service while posing major uncertainties for the future. This course introduces a range of current topics in urban transportation planning and policy, highlighting new ideas and practices for improving spatial accessibility in metropolitan areas while promoting social equity and environmental sustainability. These topics are organized into five groups: (1) key challenges, (2) managing the automobile, (3) encouraging green travel modes, (4) integrating land use and transportation, and (5) impacts of new technologies.

The course is designed for both students who specialize in transportation and students who are interested in exploring this subject area. For the first group of students, the class provides an opportunity to advance their knowledge by examining selected topics in depth and gaining critical insights about the interconnectivity—often complementary in nature—of various planning and policy approaches. For the second group, the class gives them a broad exposure to urban transportation problems and introduces them to different ideas and practices aimed at addressing these problems, along with important concepts and analytical frameworks.

Requirements and Grading

Students will be required to complete two assignments and a class project and report. The first assignment will be a problem set aimed at helping students understand some key concepts introduced during the first few weeks of the course. The second assignment will be a short essay (3 pages, about 1,000 words) that critically reviews and synthesizes a group of 2-3 readings selected by each student on a topic of the student's interest. The class project is a group effort investigating a current transportation planning or policy issue identified by each team of 2-3 students, completed with a class presentation and project report. In addition, students are expected to come to class well prepared through required readings and actively participate in class discussion. Final grades will be weighted as follows:

Assignments:	40%
Class project and report:	40%
Class participation:	20%

The assignments and project report must be submitted by their due dates.

Prerequisites

Both graduate students and advanced undergraduate students can take this class. Registration is open for graduate students in Urban Design and Planning, Civil and Environment Engineering, and Public Affairs. Graduate students from other programs and all undergraduate students must obtain permission from the instructor to register for this course.

Course Outline (subject to modifications)

Date	Topic	Assignment
W, 1/3	**Introduction and Course Overview**	
M, 1/8	*Managing the Automobile:* **Congestion Charges and Tolls** (lecture by Mark Hallenbeck, Former Director of TRAC)	
W, 1/10	*Key Challenges:* **Climate Change and Transportation Infrastructure Management** (lecture by Prof. Jan Whittington, Director of Urban Infrastructure Lab)	
M, 1/15	*No class – Martin Luther King Jr. Day*	
W, 1/17	*Key Challenges:* **Social Disparities in Spatial Access**	Assignment #1 distributed
M, 1/22	*Managing the Automobile:* **Parking Policy Innovations** (based on previous lecture by Daniel Rowe, Supervisor, Research and Innovation, Market Innovation Section, King County Metro)	
W, 1/24	*Managing the Automobile:* **State of Washington's Commute Trip Reduction Program**	
M, 1/29	*Encouraging Green Travel Modes:* **Walking, Physical Activity, and Health**	Start to think about project ideas
W, 1/31	*Encouraging Green Travel Modes:* **Bicycling and Bike Share in Seattle** (lecture by Becky Edmonds, SDOT)	Assignment #1 due #2 distributed
M, 2/5	*Integrating Land Use and Transportation:* **Visions and Initiatives for Seattle/Puget Sound Region** (lecture by Ben Bakkenta, Director of Regional Planning, PSRC)	Project teams formed
W, 2/7	*Integrating Land Use and Transportation:* **Transit-Oriented Development**	Project topics decided
M, 2/12	*Impacts of New Technologies:* **Autonomous Vehicles** (Lecture by Prof. Don MacKenzie, CEE)	
W, 2/14	*Impacts of New Technologies:* **The promises and pitfalls of emerging data for transportation planning applications** (Lecture by Ekin Ugurel, PhD candidate, CEE)	
M, 2/19	*No class – Martin Luther King Jr. Day*	Assignment #2 due
W, 2/21	***Team Project Discussion and Debriefing***	Project updates given by teams

M, 2/26	*Impacts of New Technologies:* **Transit Incorporating Mobility on Demand**	
W, 2/28	*Impacts of New Technologies:* **Urban Freight and Goods Delivery** (lecture by Prof. Anne Goodchild)	
M, 3/4	***Student Project Presentations***	
W, 3/6	***Student Project Presentations***	
M, 3/11	*No class – Finals Week*	Project report writing
W, 3/13	*No class – Finals Week*	Project report writing
F, 3/15	End of Class – Beginning of Spring Break!	Team project report due by 5:00PM

Readings

This course does not have a required textbook. The required and supplementary readings consist of journal articles, book chapters, technical reports, and newspaper articles. Most of the journal articles can be downloaded from online databases through the website of the university's library. The technical reports and newspaper articles are freely accessible online.

Readings are assigned for each topic. Readings marked by "" are required; the rest are suggested for students interested in further studying the topic:**

1/3 Introduction and Course Overview

** Transportation Research Board. *Critical Issues in Transportation 2019*. Transportation Research Board of the National Academies. Washington, D.C. https://www.nap.edu/catalog/25314/critical-issues-in-transportation-2019

** Meyer, Michael D. and Miller, Eric J. (2001). Chapter 1. "Urban Transportation Planning: Definition and Context."

United States Public Interest Research Group. Millennials in Motion: Changing Travel Habits of Young Americans and the Implications for Public Policy. (2014). http://www.uspirg.org/sites/pirg/files/reports/Millennials%20in%20Motion%20USPIRG.pdf

"More Americans Are Leaving Cities, But Don't Call It an Urban Exodus." Story by Marie Patino, Aaron Kessler and Sarah Holder, April 26, 2021. https://www.bloomberg.com/graphics/2021-citylab-how-americans-moved/

Ashour, L., Shen, Q., Moudon, A. and Treece, B. (2023). Seattle 2022 Commute Survey. Seattle, WA: Mobility Innovation Center, University of Washington. https://www.commuteseattle.com/wp-content/uploads/2023/03/2022-Seattle-Commute-Survey-Report.pdf

1/8 *Managing the Automobile:* Congestion Charges and Tolls

** US DOT, Federal Highway Administration. "What is Congestion Pricing?"

http://www.ops.fhwa.dot.gov/congestionpricing/cp_what_is.htm

** US DOT, Federal Highway Administration. "Congestion Pricing Strategies" http://www.ops.fhwa.dot.gov/congestionpricing/strategies/index.htm

** US DOT, Federal Highway Administration. *Congestion Pricing: Overview*. (2008). http://www.ops.fhwa.dot.gov/publications/fhwahop08039/fhwahop08039.pdf

** Leung, et. al., "I-405 Express Toll Lanes: Usage, Benefits, and Equity." September 2019. http://depts.washington.edu/trac/bulkdisk/pdf/I-405ExpressTollLanesDSSGEquityFinal.pdf

US DOT, Federal Highway Administration. *Economics: Pricing, Demand, and Economic Efficiency*. (2008). http://www.ops.fhwa.dot.gov/publications/fhwahop08041/fhwahop08041.pdf

US DOT, Federal Highway Administration. *Advancing Congestion Pricing in the Metropolitan Transportation Planning Process: Four Case Studies*. (2010). http://www.ops.fhwa.dot.gov/publications/fhwahop11002/cong_pricing.pdf

US DOT, Federal Highway Administration. *Priced Managed Lane Guide*. (2014). http://www.ops.fhwa.dot.gov/publications/fhwahop13007/pmlg1_0.htm#13

1/10 *Key Challenges:* Climate Change and Transportation Infrastructure Management

** Whittington, Jan and Catherine Lynch. 2015. "Climate-informed decisions: the capital investment plan as a mechanism for lowering carbon emissions" *Policy Research Working Paper Series*; no. WPS 7381. Washington, D.C.: World Bank Group. 34 pp. http://documents.worldbank.org/curated/en/985731467992486163/pdf/WPS7381.pdf

** The World Bank. *Feature Story: Urban transport and climate change*. August 14, 2012. http://www.worldbank.org/en/news/feature/2012/08/14/urban-transport-and-climate-change

** 2014 National Climate Assessment. U.S. Global Change Research Program 1800 G Street, NW, Suite 9100, Washington, D.C. 20006 USA. Read the section on transportation, at this web site: http://nca2014.globalchange.gov/report/sectors/transportation

** Center for Climate Change and Environmental Forecasting, US Department of Transportation. https://www.transportation.gov/sustainability/climate/about-center (Familiarize yourself with the contents of the site, to understand the ways in which organizations are measuring the effects of transportation on climate change, and climate change on transportation.)

Dowall, David and Jan Whittington. *Making Room for the Future: Rebuilding California's Infrastructure*. San Francisco: Public Policy Institute of California, 2003. Read Chapters 1-4, except that for Chapters 3 and 4, focus only on the transportation sections. http://www.ppic.org/main/publication.asp?i=399.

US EPA. "Greenhouse Gas (GHG) Emissions". https://www.epa.gov/ghgemissions

Cambridge Systematics. *Moving Cooler (Executive Summary).* Urban Land Institute. July, 2009. https://www.transit.dot.gov/about/moving-cooler-analysis-transportation-strategies-reducing-greenhouse-gas-emissions

1/17 *Key Challenges:* Social Disparities in Spatial Access

** Shen, Qing. "Location characteristics of inner-city neighborhoods and employment accessibility of low-wage workers." *Environment and planning B: Planning and Design* 25, no. 3 (1998): 345-365. https://www.researchgate.net/publication/23541082_Location_Characteristics_of_Inner-City_Neighborhoods_and_Employment_Accessibility_of_Low-Wage_Workers/link/55c26b5008aebc967defdce9/download

** Grengs, Joe. "Job Accessibility and the Modal Mismatch in Detroit." *Journal of Transport Geography* 18, no. 1 (2010): 42-54.

** Hu, Lingqian. "Changing job access of the poor: effects of spatial and socioeconomic transformations in Chicago, 1990–2010." *Urban Studies* 51, no. 4 (2014): 675-692.

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

Pendall, Rolf, Christopher Hayes, Arthur (Taz) George, Zach McDade, Casey Dawkins, Jae Sik Jeon, Eli Knaap, Evelyn Blumenberg, Gregory Pierce, and Michael Smart. *Driving to Opportunity: Understanding the Links among Transportation Access, Residential Outcomes, and Economic Opportunity for Housing Voucher Recipients*. Urban Institute. (2014). https://www.urban.org/sites/default/files/publication/22461/413078-Driving-to-Opportunity-Understanding-the-Links-among-Transportation-Access-Residential-Outcomes-and-Economic-Opportunity-for-Housing-Voucher-Recipients.PDF

1/22 *Managing the Automobile:* Parking Policy Innovations

** Shoup, Donald C. "The trouble with minimum parking requirements." *Transportation Research Part A: Policy and Practice* 33, no. 7 (1999): 549-574.

** Rowe, Daniel, Stephanie Morse, Craig Ratchford, Peter Haas, and Sofia Becker. "Modeling of Multifamily Residential Parking Use in King County, Washington." *Transportation Research Record: Journal of the Transportation Research Board*, No. 2469, (2014), pp. 57–64. https://metro.kingcounty.gov/programs-projects/right-size-parking/pdf/modeling-of-multifamily-residential-parking-use.pdf

FHWA, USDOT. “Parking Benefit Districts, State of Practices in the United States.” https://www.fhwa.dot.gov/ipd/pdfs/value_capture/strategies_in_practice/us_parking_benefit_districts.pdf

Weinberger, Rachel, John Kaehny, and Matthew Rufo. *US parking policies: an overview of management strategies*. New York: Institute for Transportation and Development Policy. (2010). Parts 1-3. http://media.oregonlive.com/portland_impact/other/ITDP-Parking-Report.pdf

Chatman, Daniel G., and Michael Manville. "Theory versus implementation in congestion-priced parking: An evaluation of SFpark, 2011–2012." *Research in Transportation Economics* 44 (2014): 52-60.

Guo, Zhan. "Does residential parking supply affect household car ownership? The case of New York City." *Journal of Transport Geography* 26 (2013): 18-28.

Willson, Richard W. "Suburban parking requirements: a tacit policy for automobile use and sprawl." *Journal of the American Planning Association* 61, no. 1 (1995): 29-42.

1/24 *Managing the Automobile: State of Washington's Commute Trip Reduction Program*

** Meyer, M. D. "Demand Management as an Element of Transportation Policy : Using Carrots and Sticks to Influence Travel Behavior." *Transportation Research Part A*, Vol. 33, No. 7–8, 1999, pp. 575–599

** Giuliano, G., Hwang, K. and Wachs, M. "Employee Trip Reduction in Southern California: First Year Results." *Transportation Research Part A*, Vol. 27, No. 2, 1993, pp. 125–137. https://escholarship.org/uc/item/33d4b646

** Washington State Department of Transportation. CTR Overview. https://www.wsdot.wa.gov/transit/ctr/home

** Commute Seattle. CTR Overview. Commute Trip Reduction (CTR) Overview. https://commuteseattle.com/wp-content/uploads/2017/03/CSToolkit_TBT_CTR-Overview.pdf

Ashour, L., Shen, Q., Vernez Moudon, A., Treece, B. (2023). Seattle 2022 Commute Survey. Seattle, WA: Mobility Innovation Center, University of Washington. https://www.commuteseattle.com/wp-content/uploads/2023/03/2022-Seattle-Commute-Survey-Report.pdf

Zhou, L., Q. Su, and P. Winters. "Telecommuting as a Component of Commute Trip Reduction Program." *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2135, 2009, pp. 151–159. https://doi.org/10.3141/2135-18

Washington State Legislature. Washington Administrative Code (WAC), Chapter 468-63 WAC: Commute Trip Reduction Program. https://apps.leg.wa.gov/WAC/default.aspx?cite=468-63&full=true#468-63

1/29 *Encouraging Green Travel Modes:* Walking, Physical Activity, and Health

** Saelens, Brian E., and Susan L. Handy. "Built environment correlates of walking: a review." *Medicine and science in sports and exercise* 40.7 Suppl (2008): S550.

** Lee, Chanam, and Anne Vernez Moudon. "Correlates of walking for transportation or recreation purposes." *Journal of Physical Activity & Health* 3 (2006): S77.

** Adams, Marc A., et al. "International variation in neighborhood walkability, transit, and recreation environments using geographic information systems: the IPEN adult study." *International journal of health geographics* 13.1 (2014): 43.

Hurvitz, Philip M, Anne Vernez Moudon, Bumjoon Kang, Brian E Saelens and Glen E Duncan. "Emerging technologies for assessing physical activity behaviors in space and time." (2014). https://www.researchgate.net/publication/259986745_Emerging_Technologies_for_Assessing_Physical_Activity_Behaviors_in_Space_and_Time

Kang, Bumjoon, Anne V. Moudon, Philip M. Hurvitz, Lucas Reichley, and Brian E. Saelens. "Walking objectively measured: classifying accelerometer data with GPS and travel diaries." *Medicine and science in sports and exercise* 45, no. 7 (2013): 1419-1428.

Saelens, B. E., A. V. Moudon, B. Kang, P. M. Hurvitz, and C. Zhou. "Higher physical activity is directly related to public transit use." *Am J Public Health*. (2014).

1/31 *Encouraging Green Travel Modes:* Bicycling and Bike Share in Seattle

** Pucher, John, Ralph Buehler, and Mark Seinen. "Bicycling renaissance in North America? An update and re-appraisal of cycling trends and policies." *Transportation research part A: policy and practice* 45, no. 6 (2011): 451-475.

** Seattle Department of Transportation. *New Mobility Playbook* (2017). https://www.seattle.gov/Documents/Departments/SDOT/NewMobilityProgram/NewMobility_Playbook_9.2017.pdf

** North American Bikeshare and Scootershare Association. *2022 Micromobility State of the Industry Report* (2023). https://nabsa.net/2023/08/10/2022industryreport/.

Teschke, Kay, M. Anne Harris, Conor CO Reynolds, Meghan Winters, Shelina Babul, Mary Chipman, Michael D. Cusimano et al. "Route infrastructure and the risk of injuries to bicyclists: A case-crossover study." *American journal of public health* 102, no. 12 (2012): 2336-2343.

Dill, Jennifer. "Bicycling for transportation and health: the role of infrastructure." *Journal of public health policy* (2009): S95-S110.

Forsyth, Ann, and Kevin Krizek. "Urban Design: Is there a Distinctive View from the Bicycle?" *Journal of Urban Design* 16, no. 4 (2011): 531-549.

Seattle Department of Transportation. *City of Seattle Bicycle and Pedestrian Safety Analysis* (2016). https://www.seattle.gov/Documents/Departments/beSuperSafe/BicyclePedestrianSafetyAnalysis.pdf

Pucher, John, and Ralph Buehler. "Making cycling irresistible: lessons from the Netherlands, Denmark and Germany." *Transport Reviews* 28, no. 4 (2008): 495-528.

Rietveld, Piet, and Vanessa Daniel. "Determinants of bicycle use: do municipal policies matter?" *Transportation Research Part A: Policy and Practice* 38, no. 7 (2004): 531-550.

2/5 *Connecting Land Use and Transportation:* Visions and Initiatives for Seattle/Puget Sound Region

** VISION 2050 (PSRC, 2020): https://www.psrc.org/planning-2050/vision-2050

** *Regional Transportation Plan 2022-2050* (PSRC, 2022): https://www.psrc.org/planning-2050/regional-transportation-plan

** Growing Transit Communities Strategy, *Executive Summary* (PSRC, 2013): https://www.psrc.org/sites/default/files/growing-transit-communities-executivesummary.pdf

** Crane, Randall. "The influence of urban form on travel: an interpretive review." *Journal of Planning Literature* 15, no. 1 (2000): 3-23.

Seattle Department of Planning and Development. "Transportation Element." Seattle's Comprehensive Plan. http://www.seattle.gov/dpd/cs/groups/pan/@pan/documents/web_informational/dpdd016641.pdf

Ewing, Reid, and Robert Cervero. "Travel and the built environment." *Journal of the American Planning Association* 76, no. 3 (2010): 265-294.

Giuliano, Genevieve. "Land use impacts of transportation investments." In S. Hanson and G. Giuliano (eds.), *The Geography of Urban Transportation*, third edition, (2004): 237-273. New York: The Guilford Press.

Hong, Jinhyun, Qing Shen, and Lei Zhang. "How do built-environment factors affect travel behavior? A spatial analysis at different geographic scales." *Transportation* 41, no. 3 (2014): 419-440.

PSRC Safety Page: https://www.psrc.org/our-work/safety

2/7 *Connecting Land Use and Transportation:* Transit-Oriented Development

** Bartholomew, Keith, and Reid Ewing. "Hedonic price effects of pedestrian-and transit-oriented development." *Journal of Planning Literature* 26, no. 1 (2011): 18-34.

** Cervero, Robert, et al. *Transit-oriented development in the United States: experiences, challenges, and prospects*. Vol. 102. Transportation Research Board, 2004. Chapters 3, 7, & 8. http://www.valleymetro.org/images/uploads/general_publications/TCRP-Report-102_TOD-in-the-US-Experiences-Challenges-and-Prospects_10-04.pdf

Guthrie, A. and Fan. Strategies for Transit-Oriented Development: Applying National Lessons to the Twin Cities-Phase 2. 2017. Center for Transportation Studies, University of Minnesota. https://conservancy.umn.edu/handle/11299/193357

Cervero, Robert, and Jin Murakami. "Rail and property development in Hong Kong: Experiences and extensions." *Urban Studies* 46, no. 10 (2009): 2019-2043.

Knowles, Richard D. "Transit oriented development in Copenhagen, Denmark: from the Finger Plan to Ørestad." *Journal of Transport Geography* 22 (2012): 251-261.

Sung, Hyungun, and Ju-Taek Oh. "Transit-oriented development in a high-density city: Identifying its association with transit ridership in Seoul, Korea." *Cities* 28, no. 1 (2011): 70-82.

2/12 *Impacts of New Technologies:* Autonomous Vehicles

** Brown, Austin, Jeffrey Gonder, and Brittany Repac. "An Analysis of Possible Energy Impacts of Automated Vehicles." In *Transportation Research Board 93rd Annual Meeting*, no. 14-5077. 2014.

** Fagnant, Daniel, and Kara Kockelman. "Preparing a Nation for Autonomous Vehicles: Opportunities, Barriers and Policy Recommendations." Eno Center for Transportation. October (2013).

MacKenzie, Don, Zia Wadud, and Paul Leiby. "A First Order Estimate of Energy Impacts of Automated Vehicles in the United States." In *Transportation Research Board 93rd Annual Meeting*, no. 14-2193. 2014.

Anderson, James M. et al. *Autonomous Vehicle Technology: A Guide for Policymakers*. 2014 RAND Corporation.
http://www.rand.org/pubs/research_reports/RR443-2.html

2/14 *Impacts of New Technologies:* The promises and pitfalls of emerging data for transportation planning applications

** Chen, Cynthia, Jingtao Ma, Yusak Susilo, Yu Liu, and Menglin Wang. "The promises of big data and small data for travel behavior (aka human mobility) analysis." *Transportation Research Part C: Emerging Technologies* 68 (2016): 285-299.
http://www.sciencedirect.com/science/article/pii/S0968090X16300092

** Chen, Cynthia, Ling Bian, and Jingtao Ma. "From traces to trajectories: How well can we guess activity locations from mobile phone traces?" *Transportation Research Part C: Emerging Technologies* 46 (2014): 326-337.

** Caceres, N., J. P. Wideberg, and F. G. Benitez. "Deriving origin destination data from a mobile phone network." *Intelligent Transport Systems, IET* 1, no. 1 (2007): 15-26.

Noulas, Anastasios, Salvatore Scellato, Renaud Lambiotte, Massimiliano Pontil, and Cecilia Mascolo. "A tale of many cities: universal patterns in human urban mobility." *PloS one* 7, no. 5 (2012): e37027.
http://www.plosone.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0037027&representation=PDF

Calabrese, Francesco, Mi Diao, Giusy Di Lorenzo, Joseph Ferreira Jr, and Carlo Ratti. "Understanding individual mobility patterns from urban sensing data: A mobile phone trace example." *Transportation research part C: emerging technologies* 26 (2013): 301-313.

2/26 *Impacts of New Technologies:* Transit Incorporating Mobility on Demand

** Wang Y. and Shen, Q. (2023). An economic analysis of incorporating new shared mobility into public transportation provision. Transport Policy, ISSN 0967-070X, https://doi.org/10.1016/j.tranpol.2023.07.025

** Schaller, B. (2021). Can sharing a ride make for less traffic? Evidence from Uber and Lyft and implications for cities. *Transport policy*, *102*, 1-10.

** Seattle Department of Transportation. *New Mobility Playbook*. 2017. https://www.seattle.gov/Documents/Departments/SDOT/NewMobilityProgram/NewMobility_Playbook_9.2017.pdf

Yan, Xiang, Jonathan Levine, and Xilei Zhao. (2019). Integrating Ridesourcing Services with Public Transit: An Evaluation of Traveler Responses Combining Revealed and Stated Preference Data. *Transportation Research Part C: Emerging Technologies* 105: 683–96. https://doi.org/10.1016/j.trc.2018.07.029

Clewlow, Regina R., and Gouri Shankar Mishra. "Disruptive transportation: the adoption, utilization, and impacts of ride-hailing in the United States." University of California, Davis, Institute of Transportation Studies, Davis, CA, Research Report UCD-ITS-RR-17-07 (2017). http://usa.streetsblog.org/wp-content/uploads/sites/5/2017/10/2017_UCD-ITS-RR-17-07.pdf

Fulton, Lew, Jacob Mason, and Dominique Meroux. *Three revolutions in urban transportation: How to achieve the full potential of vehicle electrification, automation, and shared mobility in urban transportation systems around the world by 2050*. No. STEPS-2050. 2017. https://www.semanticscholar.org/paper/Three-Revolutions-in-Urban-Transportation%3A-How-To-Fulton-Mason/b7bd29fcb33e7e476d3aef7a0f0c8499bfa3be95

2/28 *Impacts of New Technologies:* Urban Freight and Goods Delivery

** Transportation Research Board, National Cooperative Research Program, Report 14**,** *Guidebook for Understanding Urban Goods Movement*, 2012, http://onlinepubs.trb.org/onlinepubs/ncfrp/ncfrp_rpt_014.pdf**, Read Chapter 2.**

** Transportation Research Board, National Cooperative Research Program, Report 24, *Smart Growth and Urban Goods Movement*, 2013, http://www.trb.org/Main/Blurbs/169352.aspx, **Read Chapters 1 to 6**

** Bestufs, Best Urban freight Solutions, European Union Program, http://www.bestufs.net/, **Look around the web site.**

** Fatemeh Ranaiefar, Intelligent Freight Transportation Systems, 2012, Institute of Transportation Studies, University of California, Irvine http://docplayer.net/7337404-Intelligent-freight-transportation-systems.html **Read all.**

** Johan Visser, Toshinori Nemoto, Michael Browne, Home Delivery and the Impacts on Urban Freight Transport: A Review, Procedia - Social and Behavioral Sciences, Volume 125, 20 March 2014, Pages 15-27, ISSN 1877-0428, http://dx.doi.org/10.1016/j.sbspro.2014.01.1452, **Read all.**

Academic Integrity

Students are expected to practice high standards of academic and professional honesty and integrity as required by the Student Conduct Code of the University of Washington. Visit

https://www.washington.edu/cssc/for-students/student-code-of-conduct/ to find the Student Conduct Code.

Student Safety

Students should follow University of Washington guidelines to ensure safety on campus. For more information, go to http://www.washington.edu/safecampus/