
UP 430/CEE 417: Urban Transportation Planning

Department of Urban and Regional Planning
Department of Civil and Environmental Engineering
University of Illinois at Urbana-Champaign
Fall 2020

Instructor:	Dr. Lindsay Braun lmbraun@illinois.edu
Office Hours:	Thursdays by appointment; please sign up at https://calendly.com/lmbraun/meeting
Course Sessions:	Mondays and Wednesdays 10:30–11:50 AM
Teaching Assistant:	Abhinand Krishnashankar, ak43@illinois.edu
TA Office Hours:	Wednesdays 12:00–1:00 PM by appointment
Credit Hours:	4.00

Course Description

UP 430/CEE 417 provides a broad overview of urban transportation planning in the United States, including historic and emerging issues faced in the field and the tools that are available to address these challenges. The course is designed for students who intend to specialize in transportation planning or engineering, as well as for those who would like an introduction to the field. The course content is divided into 12 learning modules that cover the following major topics:

- Context, History, and Foundational Concepts (Modules 1–3). The first section of the course describes the context of urban transportation planning in the United States, including travel patterns and trends; major phases and developments in transportation history; and key challenges that transportation planners and engineers currently face. This section also introduces concepts that are foundational to a thorough understanding of transportation planning, including the distinction between mobility and accessibility and the relationship between transportation and land use.
- Institutions and Key Impacts (Modules 4–8). The second section of the course outlines the institutional structure of transportation planning in the United States. This section describes the transportation planning process; introduces key decision makers and legislation at the federal, state, and regional levels; and considers past, present, and future mechanisms for financing transportation investments. Additionally, this section explores several impacts of the transportation system, including air quality, greenhouse gas emissions, safety and security, public health, and environmental justice and equity.
- Standards and Methods (Modules 9–11). The third section of the course introduces technical methods that planners and engineers commonly use to evaluate and plan for urban transportation systems. In particular, this section focuses on standards and practices related to parking, traffic

impact analysis, street design, and travel demand modeling. These topics provide a strong skill basis for students interested in pursuing careers in transportation, in both the public and private sectors.

- The Future (Module 12). The final section of the course explores the future of transportation planning with a particular emphasis on connected and autonomous vehicles (CAVs). This section will examine CAV technology and regulations; key opportunities (benefits) and challenges (risks) associated with CAV development; and strategic paths forward for the transportation planning field.

Course Objectives

UP 430/CEE 417 is designed to establish a fundamental knowledge base for understanding and analyzing urban transportation systems. By the end of the semester, students will be able to:

- Explain the history and context of transportation planning in the United States
- Summarize travel patterns and trends in meaningful ways
- Interact with major secondary data sources in the transportation planning field
- Describe foundational concepts (e.g., transportation-land use connection, distinction between mobility and accessibility) and understand the implications of these concepts for policy and practice
- Recognize key decision makers and regulatory frameworks in the transportation planning process
- Understand how transportation investments are funded, the limitations of current finance structures, and potential alternatives to address these limitations
- Identify and describe key impacts of the transportation system (e.g., environment, health, safety, equity)
- Assess the effectiveness of MPO plans in addressing transportation impacts
- Understand the evolution and policy implications of parking and street design standards
- Describe and critique methods used to analyze urban transportation systems
- Summarize the challenges and opportunities associated with connected and autonomous vehicles
- Engage in meaningful dialogue about key policy issues and current events in transportation planning

Course Format

This course will be taught mostly online, with the possibility of two to three in-person, outdoor sessions if weather and public health conditions allow. Dates for these tentative in-person sessions are indicated in the course schedule (page 6). In-person participation for these outdoor sessions will be optional, and alternative participation options will be provided for students who need or prefer to remain online. All other course sessions and activities will be conducted remotely through a combination of Zoom and Compass.

Lectures will be held synchronously via Zoom during the scheduled class time. Synchronous participation is strongly encouraged if at all possible. I understand, however, that some of you may face barriers to synchronous participation (e.g., different time zone, family care obligations, limited internet bandwidth). To accommodate students who cannot participate during the scheduled class time—either on a regular basis or for particular sessions (e.g., due to illness)—recordings of all lectures will be posted on Compass.

The synchronous sessions of the course will be interactive and taught through a combination of lectures and in-class activities (e.g., labs, discussions, debates). Additional opportunities for learning and engagement will come through group assignments and a class discussion board. Students are expected and encouraged to actively engage in these activities, contributing their questions, ideas, and experiences to a rich discussion and application of the course content.

Course Requirements

Engagement. Active engagement with the course materials, with the instructor, and with other students in the class is essential for success in UP 430/CEE 417. Given the unique and mostly-online format of this course, engagement can be demonstrated in multiple ways. The bulk of the engagement grade will come from the class discussion board, in which students will react to discussion questions and to each other's comments at the conclusion of each learning module (specific instructions to follow separately). Additionally, students are expected to complete the assigned readings prior to class and to come to lectures and the discussion board prepared for thoughtful participation. Synchronous lectures will be interactive and students will be expected and encouraged to engage in active dialogue about key concepts and real-world examples. For students who must participate asynchronously, engagement can be demonstrated not only through participation in the discussion board, but through proactive communication with the instructor, TA, and classmates as needed.

Assignments. Students will complete three assignments that require the use of analytical methods common in transportation planning. Two assignments will be completed in small groups assigned by the instructor; peer evaluations of individual contributions will form part of the grade for these assignments. One assignment will be completed individually; discussion among students about this assignment is allowed (and encouraged), but each student must turn in their own work. The assignments will cover the following topics/techniques:

- Assignment 1 (group): Travel Data Analysis
- Assignment 2 (individual): MPO Plan Evaluation
- Assignment 3 (group): Street Redesign Project

Note that graduate students will serve as group leaders for Assignments 1 and 3, and the specific requirements for Assignment 2 will differ for undergraduate and graduate students.

Labs. Students will complete seven labs during the course of the semester. For students who are able to participate in the synchronous sessions, these labs will be completed in small breakout groups during class. For students who are unable to participate synchronously on lab days, work may be completed either individually or in self-arranged small groups outside of class. Students will upload their completed lab documents to Compass on the Friday following the lab session for a basic check of completion and understanding.

Final Exam. A synthetic final exam covering lecture materials and course readings will be held online during the official University final exam period. The University policy on deferred, missed, and make-up exams will be followed (please see <http://studentcode.illinois.edu/article3/part2/3-201/> and note key differences for undergraduate and graduate students).

Grading

Weights. Course requirements will be weighted in the final grade as follows:

Requirements	Weight (%)
Engagement	15
Assignment 1 (group): Travel Data Analysis	15
Assignment 2 (individual): MPO Plan Evaluation	15
Assignment 3 (group): Street Redesign Project	20
Labs	15
Final Exam	20
Total	100%

Grading Scale. Numeric grades will be converted into letter grades using the scale outlined below. The course will not be graded on a curve, and **there will be no rounding** applied to numeric grades.

A: 94.0–100	B-: 80.0–83.99	D+: 67.0–69.99
A-: 90.0–93.99	C+: 77.0–79.99	D: 64.0–66.99
B+: 87.0–89.99	C: 74.0–76.99	D-: 60.0–63.99
B: 84.0–86.99	C-: 70.0–73.99	F: Less than 60.0

Detailed instructions for completing each assignment will be provided. Submitted assignments will be graded and returned promptly with detailed feedback. The general grading rubric is as follows:

- An “A” assignment demonstrates original thought and synthesis of ideas and sophisticated, cogent analysis. It is clearly written and presented. Outstanding work.
- A “B” assignment includes above average analysis with appropriate evidence to support ideas. It is clearly written and presented. Good work.
- A “C” assignment shows a basic level of understanding, with analysis limited to obvious arguments. Writing is competent. Developing but adequate work.
- A “D” assignment misunderstands or misrepresents the material, or is so poorly written or presented as to obscure the analysis. Inadequate work.

Late Assignments. Students are expected to turn in all deliverables (assignments, labs, discussion board posts) on time. However, I understand—**now more than ever**—that challenges, unanticipated obligations, and illnesses will arise. If you are unable to meet a particular deadline, it is your responsibility to make prior arrangements with the instructor for that given deliverable. Otherwise, work submitted past the deadline will receive a five-percentage-point deduction, and work submitted later than five days past the deadline will not be considered for grading unless consent has been given by the instructor. Please communicate with me proactively about any challenges, illnesses, or emergencies that arise—I am here to work with you and help you do your best!

Readings

There is no required text for this course. All readings will be posted on Compass and/or available through the University of Illinois library. Readings for each session are listed at the conclusion of this syllabus.

Course Policies and Other Items/Resources

Attendance. “Attendance,” defined this semester as active engagement with the course material and activities, is necessary for adequate performance in this course. It is the instructor’s decision as to when a student’s “absences” (e.g., missed deadlines, non-participation in discussion board, lack of engagement), without proactive communication with the instructor, become excessive and should be reported. If in the opinion of an instructor the attendance of a student becomes so irregular that their scholarship is likely to be impaired, the instructor may submit an irregular attendance form to the Associate Dean of the student’s college. A copy is forwarded to the student, who should contact the instructor immediately to work out a solution. If irregular attendance continues without excuse, the instructor may request the student be withdrawn from the course. This request for withdrawal would result in a grade of E for the course. Extenuating circumstances will always be considered when supporting evidence is presented. See Rule 1-501 and Rule 1-502 in the Student Code for more information.

Academic Accommodations. This course will accommodate students with documented disabilities. To obtain disability-related academic adjustments and/or auxiliary aids, students should contact both the instructor and the Disability Resources and Educational Services (DRES) as soon as possible. You can contact DRES at 1207 S. Oak Street, Champaign, by phone at (217) 333-1970, or via email at disability@illinois.edu.

Academic Integrity. This course follows the guidelines set forth by the University Student Code. See http://www.admin.uiuc.edu/policy/code/article_1/a1_1-401.html for specific guidelines, examples, and punishment associated with academic dishonesty. In written work, any ideas that are not your own must be properly cited. The consequences for plagiarism may include receiving no credit for an assignment or, at the discretion of the instructor, failure of the course.

Counseling. The University Counseling Center is committed to providing a range of services intended to help students develop improved coping skills in order to address emotional, interpersonal, and academic concerns. The Counseling Center provides individual, couples, and group counseling. All of these services are paid for through the health services fee. The Counseling Center offers primarily short term counseling, but they do also provide referrals to the community when students could benefit from longer term services. <https://counselingcenter.illinois.edu/>.

Class Climate. The Department of Urban and Regional Planning (DURP) is committed to maintaining a learning environment that is rooted in the goals and responsibilities of professional planners. By enrolling in a class offered by the Department of Urban and Regional Planning, students agree to be responsible for maintaining an atmosphere of mutual respect in all DURP activities, including lectures, discussions, labs, projects, and extracurricular programs. See Student Code Article 1-Student Rights and Responsibilities, Part 1. Student Rights: §1-102.

Netiquette. In any social interaction, certain rules of etiquette are expected and contribute to more enjoyable and productive communication. The following are tips for interacting online via email or discussion board messages, adapted from guidelines originally compiled by Chuq Von Rospach and Gene Spafford (1995):

- Remember that the person receiving your message is someone like you, deserving and appreciating courtesy and respect.
- Be brief; succinct, thoughtful messages have the greatest effect.
- Your messages reflect on you personally; take time to make sure that you are proud of their form and content.
- Use descriptive subject headings in your emails.
- Think about your audience and the relevance of your messages.
- Be careful when you use humor and sarcasm; absent the voice inflections and body language that aid face-to-face communication, internet messages are easy to misinterpret.
- When making follow-up comments, summarize the parts of the message to which you are responding.
- Avoid repeating what has already been said; needless repetition is ineffective communication.
- Cite appropriate references whenever using someone else's ideas, thoughts, or words.

Course Schedule

Module	Date	Topic	Notes
Section I: Context, History, and Foundational Concepts			
—	Aug 24	Course Overview and Major Themes	
1	Aug 26	Transportation Data 1: Travel Patterns and Trends	
	Aug 31	Transportation Data 2: Sources and Methods	
	Sep 2	Transportation Data 3: NHTS Application Exercise	Lab 1
—	Sep 7	NO CLASS – Labor Day	
2	Sep 9	Transportation History 1: Walking City + Transit	
	Sep 14	Transportation History 2: Rise of the Automobile	
3	Sep 16	Transportation and Land Use 1: T → LU	
	Sep 21	Transportation and Land Use 2: LU → T	
	Sep 23	Transportation and Land Use 3: Measuring Walkability	Lab 2*
Section II: Institutions and Key Impacts			
4	Sep 28	Transportation Planning Process 1: Federal Role	
	Sep 30	Transportation Planning Process 2: MPOs and States	A1 Due (Friday)
5	Oct 5	Transportation Finance 1: Current Status	
	Oct 7	Transportation Finance 2: Future Alternatives	Lab 3*
6	Oct 12	Environmental Impacts 1: NEPA and Air Quality	
	Oct 14	Environmental Impacts 2: Greenhouse Gas Emissions	
7	Oct 19	Congestion: A Problem or a Solution?	
	Oct 21	Equity, EJ, and Travel of Disadvantaged Groups	
8	Oct 26	Transportation Safety and Security	
	Oct 28	Public Health: Benefits, Risks, and Tradeoffs	Lab 4*; A2 Due (Friday)
Section III: Standards and Methods			
9	Nov 2	Street Design: Traditional Standards	
	Nov 4	Street Design: New Approaches	
	Nov 9	Street Design: New Approaches (continued) and Visualization	Lab 5
10	Nov 11	Planning for Parking	
	Nov 16	Traffic Impact Analysis	
	Nov 18	ITE Standards: Application Exercise	Lab 6
—	Nov 23	NO CLASS – Fall Break	
	Nov 25	NO CLASS – Fall Break	
11	Nov 30	Transportation Modeling 1: Standard Practices	
	Dec 2	Transportation Modeling 2: Critiques and Alternatives	A3 Due (Friday)
Section IV: The Future			
12	Dec 7	Autonomous Vehicles 1: Overview, Opportunities, Challenges	
	Dec 9	Autonomous Vehicles 2: Paths Forward	Lab 7
—	Dec 14	Final Exam (8:00 AM on Monday)	Final Exam

Subject to revision; * denotes sessions that may be held in person (outdoors), if weather and public health conditions allow

Readings

Introduction

Course Overview and Major Themes (8/24)

- (skim) Transportation Research Board (TRB). (2019). “Critical Issues in Transportation 2019.”

Module 1: Transportation Data

Travel Patterns and Trends (8/26)

- (skim) Polzin, S., et al. (2013). Executive Summary (pages 6-38) of “Commuting in America 2013.” American Association of State Highway and Transportation Officials.
- Manville, M., King, D.A., and M.J. Smart. (2017). The driving downturn: A preliminary assessment. *Journal of the American Planning Association* 83(1): 42-55.
- Choose **one** of the following:
 - 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.
 - McDonald, N. (2015). Are Millennials really the “go-nowhere” generation? *Journal of the American Planning Association* 81(2): 90-103.

Data Sources and Methods (8/31)

- (skim) McGuckin, N., and A. Fucci. (2018). “Summary of Travel Trends: 2017 National Household Travel Survey.” U.S. Department of Transportation, Federal Highway Administration.

NHTS Application Exercise (9/2)

- No readings required

Module 2: Transportation History

Walking City and the Rise and Fall of Transit (9/9)

- Muller, P. (2017). “Transportation and Urban Form: Stages in the Spatial Evolution of the American Metropolis” (pages 57-69 only), Chapter 3 in *The Geography of Urban Transportation*, Fourth Edition, Genevieve Giuliano and Susan Hanson, Editors. New York: The Guilford Press.
- Morris, E. (2007). From horse power to horsepower. *Access* 30: 2-9.

Rise of the Automobile (9/14)

- Muller, P. (2017). “Transportation and Urban Form: Stages in the Spatial Evolution of the American Metropolis” (pages 69-83 only), Chapter 3 in *The Geography of Urban Transportation*, Fourth Edition, Genevieve Giuliano and Susan Hanson, Editors. New York: The Guilford Press.
- Brown, J., Morris, E., and B. Taylor. (2009). Paved with good intentions: Fiscal politics, freeways and the 20th century American city. *Access* 35: 30-37.
- (optional) Wells, C. (2006). The changing nature of country roads: Farmers, reformers, and the shifting uses of rural space, 1880-1905. *Agricultural History* 80(2): 143-166.

Module 3: Transportation and Land Use

Transportation → Land Use (9/16)

- Giuliano, G. (2017). “Land Use Impacts of Transportation Investments: Highway and Transit,” Chapter 9 in *The Geography of Urban Transportation*, Fourth Edition, Genevieve Giuliano and Susan Hanson, Editors. New York: The Guilford Press.
- Bruegmann, R. (2008). Point: sprawl and accessibility. *Journal of Transport and Land Use* 1(1): 5-11.
 - Crane, R. (2008). Counterpoint: accessibility and sprawl. *Journal of Transport and Land Use* 1(1): 13-19.
- (optional) Handy, S. (2005). Smart growth and the transportation-land use connection: What does the research tell us? *International Regional Science Review* 28(2): 146-167. (Read Introduction, Proposition 1, Proposition 3).

Land Use → Transportation (9/21)

- Stevens, M.R. (2016). Does compact development make people drive less? *Journal of the American Planning Association* 83(1), 7-18.
 - Ewing, R., and R. Cervero. (2017). “Does compact development make people drive less?” The answer is yes. *Journal of the American Planning Association* 83(1), 19-25.
 - Handy, S. (2017). Thoughts on the meaning of Mark Stevens’s meta-analysis. *Journal of the American Planning Association* 83(1), 26-28.
- Crane, R. (1998). Travel by design? *Access* 12: 2-7.
 - Levine, J. (1999). Access to choice. *Access* 14: 16-19.
- (optional) Handy, S. (2005). Smart growth and the transportation-land use connection: What does the research tell us? *International Regional Science Review* 28(2): 146-167. (Read Proposition 2, Proposition 4, Conclusions).

Measuring Walkability (9/23)

- Walkability audit tools assigned as part of Lab 2

Module 4: Transportation Planning Process

The Federal Role (9/28)

- Federal Highway Administration. (2007). “Part I: Overview of Transportation Planning,” in *The Transportation Planning Process Briefing Book: Key Issues for Transportation Decisionmakers, Officials, and Staff*. U.S. Department of Transportation.
- Nigro, N., and Burbank, C. (2014). “A Primer on Federal Surface Transportation Reauthorization and the Highway Trust Fund.” Center for Climate and Energy Solutions.
- (skim) U.S. House of Representatives. (2015). “FAST Act: The Fixing America’s Surface Transportation Act.” Transportation and Infrastructure Committee.

Metropolitan Planning Organizations (MPOs) and States (9/30)

- Sciara, G., and S. Handy. (2017). “Regional Transportation Planning,” Chapter 6 in *The Geography of Urban Transportation*, Fourth Edition, Genevieve Giuliano and Susan Hanson, Editors. New York: The Guilford Press.
- Handy, S. (2008). Regional transportation planning in the U.S.: An examination of changes in technical aspects of the planning process in response to changing goals. *Transport Policy* 15: 113-126.

Module 5: Transportation Finance

Current Status (10/5)

- Taylor, B. (2017). “The Geography of Urban Transportation Finance,” Chapter 10 in *The Geography of Urban Transportation*, Fourth Edition, Genevieve Giuliano and Susan Hanson, Editors. New York: The Guilford Press.
- National Surface Transportation Infrastructure Financing Commission. (2009). Executive Summary (pages 1-16) of “Paying Our Way: A New Framework for Transportation Finance.”

Future Alternatives (10/7)

- Sorenson, P. (2013). From fuel taxes to mileage fees. *Access* 43: 13-19.
- Wachs, M. (2003). Local option transportation taxes: Devolution as revolution. *Access* 22: 9-15.
- Schweitzer, L., and B. Taylor. (2010). Just road pricing. *Access* 36: 2-7.
- *(skim)* Levine, D. (2015). “Capital Ideas II: State Transportation Funding Lessons from 2015 – Challenges for 2016.” *Transportation for America*.
- National Surface Transportation Policy and Revenue Study Commission Report. (2007). Exhibit 5-21 (pages 5-39 to 5-51) in “Transportation for Tomorrow.”

Module 6: Environmental Impacts

NEPA Process and Air Quality Conformity (10/12)

- Federal Highway Administration. “Environmental Review Toolkit: NEPA and Project Development.” Read the following two tabs (plus sub-tabs under each): “NEPA and Transportation Decisionmaking” and “NEPA Documentation.” <https://www.environment.fhwa.dot.gov/projdev/index.asp>.
- Federal Highway Administration. (2010). “Transportation Conformity: A Basic Guide for State and Local Officials.” U.S. Department of Transportation.

Greenhouse Gas Emissions (10/14)

- U.S. Department of Transportation. (2010). Executive Summary (pages ES1-ES11) of “Transportation’s Role in Reducing U.S. Greenhouse Gas Emissions.” Report to Congress.
- National Climate Assessment. (2014). “Transportation.” U.S. Global Change Research Program. <https://nca2014.globalchange.gov/report/sectors/transportation#statement-10194>.
- Lutsey, N. (2012). New automobile regulations. *Access* 41: 2-9.

Module 7: Congestion and Equity

Congestion: A Problem or a Solution? (10/19)

- Downs, A. (2004). Why traffic congestion is here to stay...and will get worse. *Access* 25: 19-25.
- Taylor, B. (2002). Rethinking traffic congestion. *Access* 21: 8-16.
- Harsman, B., and J. Quigley. (2011). Political and public acceptability of congestion pricing: Ideology and self-interest in Sweden. *Access* 38: 2-7.
- *(optional)* Cervero, R. (2003). Are induced-travel studies inducing bad investments? *Access* 22: 22-27.
- *(optional)* Small, K. (2005). Unnoticed lessons from London. *Access* 26: 10-15.

Equity, EJ, and Travel of Disadvantaged Groups (10/21)

- Bullard, R., and G. Johnson. (1997). “Just Transportation,” Chapter 1 (pages 7-14 only) in *Just Transportation: Dismantling Race and Class Barriers to Mobility*. Stony Creek, CT: New Society Publishers.

- Cairns, S., Greig, J., and M. Wachs. (2003). “Environmental Justice and Transportation: A Citizen’s Handbook.” Institute of Transportation Studies, UC Berkeley.
- Blumenburg, E., and G. Pierce. (2016). A driving factor in moving to opportunity. *Access* 48: 13-19.
- O’Regan, K., and J. Quigley. (1998). Cars for the poor. *Access* 12: 20-24.

Module 8: Safety and Health

Transportation Safety and Security (10/26)

- Cambridge Systematics, and M. Meyer. (2008). Executive Summary (pages ES1-ES6) of “Crashes vs. Congestion: What’s the Cost to Society?” American Automobile Association.
- Loukaitou-Sideris, A. (1999). Hot spots of bus stop crime. *Journal of the American Planning Association* 65(4): 395-411.
- Taylor, B. (2005). “Terrorism and Transit Security: 12 Recommendations for Progress.” Homeland Security Critical Infrastructure Series, Center for American Progress, Washington, D.C.

Public Health: Benefits, Risks, and Tradeoffs (10/28)

- Frank, L., Kavage, S., and T. Litman. (2006). “Land Use and Transportation Impacts on Health Objectives,” pages 24-40 of PDF in “Promoting Public Health through Smart Growth: Building Healthier Communities through Transportation and Land Use Policies and Practices.” Smart Growth BC.
- Pucher, J., et al. (2010). Walking and cycling to health: A comparative analysis of city, state, and international data. *American Journal of Public Health* 100(10): 1986-1992.
- Wolch, J.R., Byrne, J., and J.P. Newell. (2014). Urban green space, public health and environmental justice: The challenge of making cities ‘just green enough.’ *Landscape and Urban Planning* 125: 234-244.

Module 9: Street Design

Traditional Standards (11/2)

- Southworth, M., and E. Ben-Joseph. (2003). “Street Standards and the Built Environment,” Introduction to *Streets and the Shaping of Towns and Cities*. Washington, DC: Island Press.
- MacDonald, E. (2007). The intersection of trees and safety. *Access* 31: 20-26.
- (optional) Southworth, M., and E. Ben-Joseph. (2004). Reconsidering the cul-de-sac. *Access* 24: 28-33.

New Approaches (11/4)

- Dumbaugh, E., and M. King. (2018). Engineering livable streets: A thematic review of advancements in urban street design. *Journal of Planning Literature* 33(4): 451-465.
- Noland, R.B., et al. (2015). Costs and benefits of a road diet conversion. *Case Studies on Transport Policy* 3, 449-458.

New Approaches (continued) and Visualization (11/9)

- MacDonald, E. (2006). Building a boulevard. *Access* 28: 2-9.

Module 10: Parking and Traffic Impact Analysis

Planning for Parking (11/11)

- Shoup, D. (1997). High cost of free parking. *Access* 10: 2-9.
- Shoup, D. (2007). Cruising for parking. *Access* 30: 16-22.

- Chester, M., et al. (2015). Parking infrastructure: A constraint on or opportunity for urban redevelopment? A study of Los Angeles County parking supply and growth. *Journal of the American Planning Association* 81(4): 268-286.

Traffic Impact Analysis (11/16)

- Papacostas, C., and P. Prevedouros. (2001). "Traffic Impact and Parking Studies," Chapter 9 (pages 456-479) in *Transportation Engineering and Planning*, Third Edition. Upper Saddle River, NJ: Prentice-Hall.
- Institute of Transportation Engineers. (2006). "Transportation Impact Analyses for Site Development."
- Schneider, R., Handy, S., and K. Shafizadeh. (2014). Trip generation for Smart Growth projects. *Access* 45: 9-15.

ITE Standards: Application Exercise (11/18)

- Shoup, D. (2002). Roughly right or precisely wrong. *Access* 20: 20-25.
- Millard-Ball, A. (2014). Phantom trips. *Access* 45: 3-8.

Module 11: Transportation Modeling

Standard Practices (11/30)

- Beimborn, E.A. (2006). "A Transportation Modeling Primer." Center for Urban Studies, University of Wisconsin-Milwaukee.

Critiques and Alternatives (12/2)

- (*skim*) TRB. (2007). "Shortcoming of Current Forecasting Processes," Chapter 5 in "Metropolitan Travel Forecasting: Current Practice and Future Direction," TRB Special Report 288.
- Flyvbjerg, B., Holm, M., and S. 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.
- (*optional*) Cervero, R. (2006). Alternative approaches to modeling the travel-demand impacts of Smart Growth. *Journal of the American Planning Association* 72(3): 285-295.

Module 12: Autonomous Vehicles

Overview, Opportunities, and Challenges (12/7)

- Anderson, J.M., et al. (2016). "Autonomous Vehicle Technology: A Guide for Policymakers" (read Chapters 1 and 2). RAND Corporation.
- Freemark, Y., Hudson, A., and J. Zhao. (2019). Are cities prepared for autonomous vehicles? Planning for technological change by U.S. local governments. *Journal of the American Planning Association* 85(2): 133-151.
- (*skim*) Sandt, L., and J.M. Owens. (2017). "Discussion Guide for Automated and Connected Vehicles, Pedestrians, and Bicyclists." Pedestrian and Bicycle Information Center.
- (*skim*) Creger, H., Espino, J., and A.S. Sanchez. (2019). "Autonomous Vehicle Heaven or Hell? Creating a Transportation Revolution that Benefits All" (read pages 6-20). The Greenlining Institute.

Paths Forward (12/9)

- Schlossberg, M., et al. (2018). "Rethinking the Street in an Era of Driverless Cars." Urbanism Next.
- Speck, J. (2017). "Ten Rules for Cities about Automated Vehicles." Congress for the New Urbanism. <https://www.cnu.org/publicsquare/2017/10/16/ten-rules-cities-about-automated-vehicles>.
- Links to policy statements on autonomous vehicles:
 - [Human Factors and Ergonomics Society](#) (HFES)

- [National Association of City Transportation Officials](#) (NACTO)
- [Institute of Transportation Engineers](#) (ITE)
- [Association of Pedestrian and Bicycle Professionals](#) (APBP)
- [California Multi-Agency Workgroup on AV Deployment for Healthy and Sustainable Communities](#)