

Urban Planning 254 - Pedestrian and Bicycle Planning

UCLA Department of Urban Planning

Winter 2015

Tuesdays 5 pm to 7:50 pm (January 13 through March 3)

February 6 all-day field trip takes the place of two lectures - mandatory

Public Affairs Room 2343

Office: Public Affairs Room 5368

Office Hours: Tuesdays, 2 pm to 4:40 pm

Lecturer: Ryan Snyder

COURSE SYLLABUS

Description

Walking and bicycling are essential components of a sustainable transportation system. In response to growing concerns about access, safety, public health, equity, climate change and community sustainability issues, many government agencies are planning to improve pedestrian and bicycle transportation.

This course will provide broad education in the field of pedestrian and bicycle planning. The course will explore the field's relationship to land use and transportation planning, public health, and the environment. It will provide detailed knowledge of various bicycle and pedestrian facilities and where to use them. The course will examine bicycle and pedestrian planning in the context of overall street design. Additionally, the course will cover essential components of bicycle and pedestrian planning, including policies, programs, funding and advocacy. Students will learn from in-class exercises, as well as out-of-class planning projects.

Goals

The goals of this course are to:

1. Introduce students to historical and current issues as well as future trends in pedestrian and bicycle planning and how they fit in a larger context of street design.
2. Teach students methods of measuring and researching pedestrian and bicycle activity.
3. Learn from best practices locally, nationally, and internationally.
4. Visit local examples of well-designed pedestrian and bicycle facilities.
5. Prepare students for practicing in the field.

Requirements

The course requires full attendance and participation as well as completion of homework assignments. The field trip on February 6 is mandatory and will take the place of two lectures. Students are expected to attend all class discussions, come to class having read the material, and be ready to engage in dialogue.

Grading

Class Participation: Will be considered in assigning grades.

Assignment length: Papers are expected to stay within assigned length.

Late assignments: Will lose a third of a grade (e.g. "A" becomes "A-") if a little late. More will be deducted for very late assignments.

Group efforts: Everyone receives the same grade. The assignment length will be multiplied by the number of students.

Paper 1: 20%

Students will select a community, research levels of bicycling or walking in that community, and prepare a paper that analyzes and speculates the reasons for the levels being what they are. Is it due to urban form, facilities or lack thereof, or other factors?

Bicycle Planning Exercise: 20%

Students will submit a plan for bikeways in an area selected by the student (s).

Pedestrian Planning Exercise: 20%

Students will submit a plan to improve pedestrian conditions at a location or area selected by the student (s).

Final Project: 40%

Individually, or in groups (of up to 4), students will produce a plan that uses tools taught in the course. Project topics should be chosen by week 4 of the quarter and a brief synopsis of your proposed case study will be submitted. All students are required to present their case studies to the class on March 3.

Readings

The basic "text" for this course will be the Federal Highway Administration University Course of Bicycle and Pedestrian Transportation as it covers a wide range of topics. Additional readings are also assigned for some topic areas. Most of the readings will be made available on the course website.

Course Outline

Week 1 – NO CLASS

Week 2 - January 13: Course Introduction and Background

The class will explore why we plan for bicycles and pedestrians and the planning context. We will look at how many people bike and walk, and what prevents people from cycling and walking more. The class will also learn about bicycle and pedestrian crashes.

Readings

- Royal, Dawn, and Darby Miller-Steiger (2008). *National Survey of Bicyclist and Pedestrian Attitudes and Behavior*. Washington, D.C.: U.S. Dept. of Transportation, National Highway Traffic Safety Administration.
- "Racquel Nelson Finally Cleared of Homicide Charges: Pleads to Jaywalking," Angie Schmidt, *Streetsblog*, June 14, 2013.
- Lantz, Alexis, (2010), *Cycling in Los Angeles: Findings from a Survey of Los Angeles Cyclists*.
- Snyder, Ryan (2004). *Economic Value of Active Transportation*.
- League of American Bicyclists Facts and Figures.
- "Cycling Mode Share Data for 700 Cities," *City Clock Magazine*, August 8, 2014.
- *2014 Bicycle-Friendly Community list, 2014 Bicycle-Friendly States list, 2014 Bicycle-Friendly Universities list*
- Fact sheet on short trips.
- Obesity study synopsis: "Study Shows Bicycle-Friendly Infrastructure in US Significantly Increases Cycling to Work by Residents, Which Can Improve Health by Locals," *Obesity Society*, November 3, 2014.

Supplemental Readings

- FHWA Chapters 1, 2 and 3
- Mackett, Roger L (2003). "Why do people use their cars for short trips?" *Transportation* 30 (3).
- Transportation for America, *Dangerous by Design*
- *Bicycling and Walking in the US*, Thunderhead Alliance Benchmarking Report.
- Bicycle Federation of Wisconsin, *The Economic Impact of Bicycling in Wisconsin*.
- California Bicycle-Related Laws
- Federal Highway Administration (2010). *National Bicycling & Walking Study 15-Year Status Report*.

Week 3 - January 20: Urban Form and its Relationship to Bicycling and Walking

The class will study issues of urban form and how this affects bikeability and walkability. Topics will include both street network and land use issues. We will discuss new urbanism and recent experience with it. The class will also explore the “DNA” of urban form such as road standards and land use planning. The class will participate in an exercise of redesigning an area.

Readings

- FHWA Chapters 5, 6 and 7
- Congress for The New Urbanism Charter
- Pucher, Bueller, Bassett and Dannenberg. (2010). “Walking and Cycling to Health,” American Journal of Public Health, 100 (10).
- *Context Sensitive Solutions in Designing Major Urban Thoroughfares* (2006). Institute of Transportation Engineers/Congress for the New Urbanism. Chapters 1 to 4.
- *Model Design Manual for Living Streets*, Chapter 3
- Transportation Research Board and Institute of Medicine, (2005), *Does the Built Environment Influence Physical Activity?* Chapters 1,4,6 and 7.

Supplemental Readings

- Ewing, R., T. Schmid, R. Killingsworth, A. Zlot, and S. Raudenbush (2003). "Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity." American Journal of Health Promotion, 18: 47-57.
- Gordon-Larsen, “Inequality in the Built Environment Underlies Key Health Disparities in Physical Activity & Obesity”
- Cavill, Nick and Dr. Adrian Davis, “Cycling and Health: What’s the Evidence?” Cycling England.

Week 4 - January 27: Planning for Bicycles - Facilities

This session will introduce students to facility and programmatic changes that are used to create a bicycle-friendly environment. We will begin with an overview of safe bicycle riding in the streets to ensure that we design our streets and bikeways with this in mind. This session will include a discussion of different types of bikeways, parking, links to public transit, and other devices. A class exercise will put students to work redesigning streets for bike lanes.

Readings

- Caltrans Chapter 1000
- *Model Design Manual for Living Streets*, Chapter 8
- *Lessons from the Green Lanes: Evaluating Protected Lanes in the US*, National Institute for Transportation and Communities, Chris Monsere, Jennifer Dill, Nathan McNeil, Kelly Clifton, Nick Foster, Tara Goddard, Matt Berkow, Joe Gilpin, Kim Voros, Drusilla van Hengel, Jamie Parks, June 2014. (pp.19-32)
- Pucher, J., Buehler, R., (2012), *City Cycling*, MIT Press, 2012, Chapters 2, 6, 10, 13.
- “Do Bike Lanes Gentrify Neighborhoods?” Shaun Courtney, *Urbanful Newsletter*, November 17, 2014.
- Design Flexibility and NACTO Endorsement memorandum, Caltrans, September 2014.

Supplemental Readings

- FHWA Chapters 13, 14, and 15
- NACTO Urban Bikeway Design Guide
- Gotschi, T., and K. Mills (2008). *Active Transportation for America: The Case for Increased Federal Investment in Bicycling and Walking*, Rails-to-Trails Conservancy and Bikes Belong. (pp. 3-17)

Week 5 - February 3: Planning for Bicycles – Creating Plans, Bicycle Research and Programs

Session 4 will cover the planning process and what goes into a bicycle plan. We will look at research that’s been conducted on bicycles. What seems to be working and what does not? We will discuss count methodologies. The class will also look at programmatic efforts to enhance the bicycling environment and funding.

Readings

- City of Carson Master Plan of Bikeways, Ryan Snyder Associates, 2013 (for reference – you don’t need to read the whole plan)
- Redden, J. (2008). “Bike Lanes Work, Portland State University Professor Says.” *Portland Tribune*.
- Dill, J., & Gliebe, J. (2008). “Understanding and Measuring Bicycling Behavior: A Focus on Travel Time and Route Choice,” Oregon Transportation Research and Education Consortium.
- Sciara, Gian-Claudia (Spring 2003). “Making Communities Safe for Bicycles,” ACCESS #22.
- “How to Increase Bicycling for Daily Travel,” *Active Living Research*, May 2013.

- *Public Bike Sharing in North America During a Period of Rapid Expansion: Understanding Business Models, Industry Trends and User Impacts*, Susan Shaheen, Elliot Martin, Nelson Chan, Adam Cohen, Mike Pogodzinski, Mineta Transportation Institute, October 2014. (pp. 1-4)

Supplemental Reading

- FHWA Chapters 17, 18, and 19.
- *Conducting Bicycle and Pedestrian Counts Manual*, for Southern California Association of Governments and Los Angeles County Metropolitan Transportation Commission, by Kittleson & Associates, Inc., Ryan Snyder Associates, Los Angeles County Bicycle Coalition, June 2013.
- California Rails-With-Trails (2009). *A Survey of Trails Along Active Rail Lines*, Rails-to-Trails Conservancy.
- Mineta Transportation Institute, San Jose State University (2009). "Using Bicycles for the First and Last Mile of a Commute."
- Federal Highway Administration (October 2010). *The Evaluation of Shared Lane Markings*.

February 6: Class Field Trip (all day)

On February 6, students will travel to Santa Monica and Long Beach to experience some infrastructure innovations. The class will stop at predetermined locations along the way to examine the existing infrastructure.

Reading

- <http://www.bikelongbeach.org/>
- "Bike Long Beach – Results of the 2013 Count" City of Long Beach
- Additional readings may be added at a later date

This field trip is mandatory. If you have an EXCELLENT reason for not being able to come, you can make it up in one of two ways. First, visit the same route and destinations as the field trip and bring back pictures of each embedded into a file. Or, you may write a 10-page paper on bicycle and/pedestrian facilities or planning on a topic of your choice to be approved by the instructor.

Week 6 - February 10: Designing for Pedestrians

This session will focus on infrastructure improvements to make streets safer and more inviting for pedestrians. Students will learn about sidewalk design, Americans with Disability Act issues, intersection geometry and street crossing principles. We will cover devices to modify streets as well as when and why they should be implemented.

Readings:

- "Pedestrian Design Guidelines," Chanda Singh for Ryan Snyder Associates, 2012.
- FHWA Chapters 8, 11
- *Model Design Manual for Living Streets*, Chapter 5 (Intersection geometry section), Chapters 6 and 7
- Mike Maciag, "Pedestrians Dying at Disproportionate Rates in America's Poorer Neighborhoods," *Governing*, August 2014.
- Loukaitou-Sideris, A., R. Liggett, & H.G. Sung (2007). "Death on the Crosswalk," *Journal of Planning Education and Research*, 26 (3), 338-351.

Supplemental Readings

- WalkingInfo.org:
 - <http://www.walkinginfo.org/engineering/>
 - All UNDER Engineering Pedestrian Facilities
 - UNDER Roadway and Pedestrian Facility Design:
Raised Medians, Sidewalks and Walkways, Curb Ramps, Roadway Lighting Improvements, Street Furniture/Walking Environment
 - UNDER Street Crossings:
Crosswalks, Curb Radius Reduction, Improved Right-turn Slip Lane Design, Signals and Signs, Crossing Enhancements, Pedestrian Overpasses/Underpasses
 - UNDER Traffic Calming:
All items
 - Designing for Special Populations
 - School Zone Improvements

Week 7 - February 17: Street Design Policies

This session will focus on miscellaneous topics including design manuals, living/complete streets policies, roundabouts, road diets, traffic calming, shared space, and safe routes to school. The class will participate in a hands-on exercise to redesign an existing area to make it more pedestrian friendly.

Readings

- *Model Design Manual for Living Streets*, Chapters 1, 2, 5 (roundabout section), 10, 12
- National Safe Routes to School Taskforce (U.S.). (2008). *Safe Routes to School A Transportation Legacy: A National Strategy to Increase Safety and Physical Activity Among American Youth: Report of the National Safe Routes to School Taskforce*. National Safe Routes to School Taskforce. (pp 1-47.)

- *Trends in Walking and Bicycling to School from 2007 to 2012*, National Center for Safe Routes to School, October 2013. (Executive Summary and charts)
- *Elements of a Complete Streets Policy*, National Complete Streets Coalition.
- *Baldwin Park Complete Streets Policy*, City of Baldwin Park.
- *Designing Roads That Guide Drivers to Choose Safer Speeds*, John Ivan, Norman Garrick, Gilbert Hanson, JHR 09-321 Project 04-6, November 2009. (pp 37-43)
- *Design Flexibility in Multimodal Design memorandum*, Caltrans, April 10, 2014.

Supplemental Readings

- United States. (2009). *Evaluation of the Safety Benefits of Legacy Safe Routes to School Programs*, U.S. Dept. of Transportation, National Highway Traffic Safety Administration.
- Cervero, R. (2001). "Walk-and-ride: Factors Influencing Pedestrian Access to Transit," *Journal of Public Transportation*. 3 (4).

Week 8 - February 24: The Role of Advocacy

This session will focus on the role of bicycle and pedestrian advocacy. We will take a historical view of advocacy and its relationship to public policy. We will also consider coalition building, influencing the political debate, and inequalities in non-motorized travel.

Reading

- Mapes, J., (2009), *Pedaling Revolution: How Cyclists are Changing American Cities*, Oregon State University Press.
- McCann, Barbara, (2013), *Completing Our Streets*, Island Press, Chapters Introduction, 1, 4, 7, 8.

Supplemental Readings

- Pucher, J. and R. Buehler (May 2009). "Cycling for a Few or for Everyone: The Importance of Social Justice in Cycling Policy," *World Transport Policy and Practice*, 15 (1), pp. 57-64.
- Koepfel, Dan. "Invisible Riders," *Bicycling.com*
- Garrard, J., Rose, G., and Lo, SK, (2007). "Promoting Transportation Cycling for Women: The Role of Bicycle Infrastructure,"
- Krug, Rachel (2007). "Discrimination by Design," *Transportation Alternatives*.
- Cortright, Joe, Impresa Inc, *Walking the Walk: How Walkability Raises Home Values in US Cities*, for CEOs for Cities, August, 2009.

Week 9 – March 3: Class Project Presentations