Department of Planning, Policy and Design
School of Social Ecology
University of California, Irvine
Fall 2013

PPD 231: Transportation and Environmental Health

Meetings: Monday, 9 pm – 12 pm
Room: SBSG, Room 3240
Course website: https://eee.uci.edu/13f/54450

Instructor: Doug Houston Office: Social Ecology I, 212E
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Office Hours: Usually Monday 1-1:50 (see course schedule below), or by appointment

Description

This course investigates the environmental health implications of urban transportation systems. Travel provides an essential link between people and social, economic, and recreational activities in metropolitan areas and has been central to regional and national growth and prosperity. Despite these benefits, transportation systems are associated with a number of externalities including heightened congestion, increased noise, and diminished air quality. Transportation infrastructure and technology has historically had a profound influence on urban development patterns and has shaped physical, social and cultural aspects of American society including persistent inequalities such as racial segregation and concentrated poverty. Auto-oriented transportation infrastructure has been linked to reduced physical activity, safety concerns, and community health disparities.

Transportation and air quality planning and policy seeks to promote community well-being by providing more affordable, reliable, and adequate public transportation, increasing sub-regional jobs-housing balance, altering travel mode choice and reducing vehicle-miles-traveled (VMT) through road pricing and compact and 'mixed' land use strategies, mitigating environmental impacts through alternatives analysis of infrastructure projects, implementing alternative fuels/energy, emission controls and vehicle technology, and expanding infrastructure that promotes non-auto travel and biking/walking safety. This course examines whether these and related efforts are sufficient and desirable strategies for improving and promoting community well-being, environmental quality and health, and access to opportunity in the long run.

The course uses a broad definition of environmental health to explore how transportation can be used to promote community well-being in a way that makes cities more sustainable, healthy, and equitable. We will consider the impacts of transportation across social, political, economic, and environmental dimensions and across geographic scales (proximate, local, regional, and global). Readings, lectures, and class discussions will seek to (1) understand the history, causes, and underlying dynamics of impacts across these societal dimensions and geographic scales, (2) identify and discuss disparate impacts, if any, (3) evaluate the extent to which existing/proposed solutions are properly targeted to address current and future impacts, and (4) to identify what further steps in the transportation and/or non-transportation arenas are needed to address impacts.

The course is organized around major areas of debate, inquiry, and policy making in order to investigate the ability of transportation regulatory and institutional strategies to address the harmful impacts of urban transportation. The course is grounded in a historical understanding of the role of transportation in urban development patterns and inequality and in a conceptual understanding of how social, economic, and institutional forces impact regional, individual and community outcomes.

This course uses transportation as a lens to examine strategies to improve the environmental health, and is organized to consider three broad areas in which transportation impacts the well-being of urban inhabitants and the viability of communities and regions:

- *Transportation and Air Quality* – The transportation sector is a major source of air pollution with significant environmental, economic and health costs at the local, regional and global scales. What are the dynamics underlying air pollution impacts across these scales and to what extent will technological advances and transportation and land use policy be able to address air pollution problems?
- *Active Transport, Infrastructure and Urban Form* – Auto-oriented transportation infrastructure and culture has encouraged sprawling urban development patterns which have been associated with increasing vehicle miles traveled (VMT) and vehicle-related air pollution, lower levels of physical activity, and higher levels of obesity. To what extent can compact, mixed-use development patterns and expanded walking and biking infrastructure address these concerns?
- *Accessibility and the Distribution of Opportunity* – Mobility and access to economic opportunity, health services, and healthy foods are essential to individual, household and community well-being. What role can planning/policy play in increasing accessibility and promoting greater access to opportunity?

We will conclude the course by drawing themes and knowledge from these areas to critically develop a working a definition of sustainable transportation systems and infrastructure.

Format and Course Requirements

There are six parts of the course: (1) lectures and discussion, (2) weekly reading assignments, (3) critical summaries of readings (or leading class discussion about a reading), (3) an individual transportation environmental impact report (EIR) critical assessment memo (4) a group neighborhood transportation needs assessment project, and (5) a final presentation and paper. These six parts are intended to reinforce, but not duplicate, one another.

The course *website* will be the master source of information on course requirements and assignments, and students should check it regularly for updated materials and revisions to course schedule or readings. Changes will also be discussed in class to provide students sufficient advance notice of changes.

Attendance and Class Participation: Lectures are intended to complement, and not duplicate, the required readings. Regular attendance and active, informed participation are essential and a graded component of the course.

Readings: Course readings will be made available electronically on the course website. They should only be used in course-related activities and assignments and should not be distributed

broadly. Depending on the pace of the course and the depth of coverage on each topic, the reading list may be revised during the quarter. The course website will be the master source of information regarding reading requirements. Students should complete core readings prior to each class session in order to make an informed contribution to class discussion.

In addition to readings on the course website, students should read on a weekly basis online media and blog postings relating to transportation planning and environmental health, particularly with regards to issues in southern California on a weekly. This exposure and awareness will inform student research projects and will help students actively engage in class discussion about "real-world" planning processes and examples. Some online starting points include:

- The Source by Los Angeles Metro (http://thesource.metro.net/)
- LA Streets Blog (http://la.streetsblog.org/)
- LA Curbed (http://la.curbed.com/)

Critical Summaries: Students are required to submit ***three*** short, critical summaries of core readings. Each will cover *five* of the core readings for the dates designated on the course schedule below. These short critical summaries should summarize the substantive content of the readings and offer comments, criticisms, or insights on their collective content. Think of these summaries as equivalent to movie reviews of the readings. The requirements for critical essays will be discussed on the first day of class, and sample critical summaries will be available on the course website for review.

An electronic copy of the critical summary should be uploaded to the class EEE dropbox at least 10 minutes before the start of class (no hardcopy required). Each essay should be 4-7 pages and should be double-spaced, have 1-inch margins, and use 12 point type. Each critical summary should clearly indicate include citations with page numbers for direct quotations and should have a complete bibliography (the latter of which does not count as part of the page limit for the review).

Reading Discussant: Students may replace one critical summary by being leading discussion in class about a reading for approximately 10-20 minutes. Students who serve as a reading discussant must prepare one-page reading note about one reading which includes a ½ page summary of the reading, and a list of 3-5 proposed discussion questions. Students may lead discussion in groups of 2-3 persons, and each presenter must prepare a 1-page reading note for a separate reading. Reading notes must be submitted to the instructor two days before the designated class session. The instructor will review the note then will email it to the class for review prior to the class session. Students who want to be a reading discussant should contact the instructor to schedule a presentation topic and date. Depending on the course enrollment and schedule, the instructor may only allow 5-10 students to serve as a reading discussant.

Class Projects:

EIR Critical Assessment. Students are required to critically assess an environmental impact report (EIR) for a major transportation project and/or transportation-related community plan. This assessment will include an evaluation of the impacts of the plan/project identified, the proposed mitigation strategies and project/plan alternatives, and debate and/or controversy about the EIR in public participation process and media. The students in the class will assess one of the following recent EIRs:

- I-710 Corridor Project – http://www.dot.ca.gov/dist07/resources/envdocs/docs/710corridor/
- Hollywood Community Plan – http://cityplanning.lacity.org/ (Click "New Community Plans" then "Hollywood")
- Southern California International Gateway (SCIG) Project – http://www.portoflosangeles.org/EIR/SCIG/FEIR/feir_scig.asp

Transportation Needs Assessment Project. Students are required to complete a group class project which reviews transportation-related aspects of a neighborhood in southern California by (a) conducting a site visit and field assessment of neighborhood's transportation-related resources and challenges and (b) reviewing and assessing city plans affecting the neighborhood (land use, circulation and mobility elements of general plans and relevant specific plans). Each group will consist of 3-4 students. Students will receive individual points for his/her individual section and each member of the group will share a group grade based on the executive summary and overall presentation. The following reading for the class project will be posted on the class web page:

Jacobs, Allan B. (1985) "Clues" (pp. 30-83) in *Looking at Cities.* Cambridge: Harvard University Press.

Research Paper: Students will be required to complete a substantial research paper which explores a transportation and environmental health topic. Additional guidance on selecting and defining a topic will be provided in class. Students should work throughout the quarter to research and write their final course paper, and are encouraged to seek input and advice from the instructor in office hours. The schedule for the paper is as follows:

a. *Paper Prospectus*: A hardcopy overview of the proposed research paper consisting of (1) a one-page summary of the policy/planning question to be explored, (2) a proposed outline of the paper, and (3) a preliminary bibliography of the sources of information to be consulted in writing the paper.

b. *Final Paper*: Due in the professor's mailbox at the designated day/time (below)
The final hardcopy paper should be no less than 12 pages and no more than 18 pages (double-spaced, 12 point type, 1 inch margins, and not counting the abstract, bibliography, or appendices) and should reflect my comments and suggestions on the prospectus.

Research Paper Presentations: Students are required to make a five minute PowerPoint presentation of the major themes and findings of their paper in class during week 9 and 10 of the course. These presentations will encourage students to be proactive and start their research early in the quarter and will allow them to receive constructive feedback on their work which they should use to improve their final paper due in week 11 of the course.

Grading: Final grades will be determined as follows:

Attendance and Class Participation 6 percent

Three Critical Summaries (8 pts ea.) 24 percent
Note: One critical summary can be replaced by being a reading discussant

Class Projects
EIR Critical Assessment Memo 10 percent

Transportation Field Assessment	
Proposal	2 percent (Group Grade)
Report Executive Summary	5 percent (Group Grade)
Report Individual Section	13 percent (Individual Grade)
Research Paper	
Proposal	2 percent
Presentation	3 percent
Final Paper	35 percent
Total	100 percent

Late Assignments: For all written materials, late submissions will be penalized by 1/3 grade (e.g., from A- to B+) without a written proof of emergency.

Course Schedule

Date	Assignment	Details	Office Hours
Mon., 9/30	*Due*: Group Project Survey Online (Field Assessment Project) *Reading Topics*: 1, 2	Complete by Fri., 10/4 (11pm)	1-1:50 pm
Mon., 10/7	Group Project members announced (Field Assessment Project) *Reading Topics*: 3, 4		No office hrs.
Mon., 10/14	*Due*: Critical Summary #1 *Reading Topics*: 5, 6	Covers 5 Readings: Topics 1-6 *(EEE dropbox only)**	1-2:30 pm
Mon., 10/21	*Due*: Neighborhood Proposal (Field Assessment Project) *Reading Topics*: 7, 8	Hardcopy *and* EEE dropbox*	1-1:50 pm
Mon., 10/28	*Due*: Final Paper Proposal *Reading Topics*: 9	Hardcopy *and* EEE dropbox*	1-2:30 pm
Mon., 11/4	*Due*: Critical Summary #2 *Reading Topics*: 10, 11	Covers 5 Readings: Topics 7-11 *(EEE dropbox only)**	No office hrs.
Mon., 11/11	Veteran's Day (*no class*)		No office hrs.
Mon., 11/18	*Due*: EIR Critical Assessment Memo *EIR Discussion*: Hollywood Plan *Reading Topics*: 12, 13	Hardcopy *and* EEE dropbox*	1-1:50 pm
Mon., 11/25	*Due*: Field Assessment Project Report *EIR Discussion*: 710 & SCIG Plans *Reading Topics*: 14, 15	Hardcopy *and* EEE dropbox*	1-2:30 pm
Mon., 12/2	*Due*: Critical Summary #3 *Due*: Paper Presentations *Reading Topics*: 16	Covers 5 Readings: Topics 12-16 *(EEE dropbox only)**	No office hrs.
Mon., 12/9	*Due*: Final Paper *Due*: Paper Presentations (if needed)	Due by 5pm: EEE dropbox *and* hardcopy in Doug's mailbox	No office hrs.

* Due at least 10 minutes before class.

Academic Honesty and Plagiarism: Academic dishonestly will not be tolerated and could result in course failure and/or having the incident permanently noted in your student records. By turning in assignments, you are certifying that the work is your own and does not plagiarize or otherwise use other works without citing the appropriate reference. If you are unsure what constitutes academic dishonestly or plagiarism, it is your responsibility to make sure you understand the issues before you turn in written work. Here are some examples of plagiarism that you should carefully observe:

(a) When using someone else's sentence, you must enclose it in quote marks and identify the source;
(b) If you paraphrase someone else, you must acknowledge the author;
(c) If you insert in your paper a picture or a table from a web page or from a book, you need to reference your source.

If you have any questions about academic honesty or plagiarism regulations, please contact the instructor. For more information, see the UCI Academic Senate Policy on Academic Honesty (http://www.senate.uci.edu/senateweb/default2.asp?active_page_id=754).

Topics and Readings (see course schedule for the days each topic will be covered in class)

Topic 1– Course Introduction and Overview

Overview of course; definitions and key concepts; introduction to environmental and health impacts of transportation systems; a broader definition of environmental health and community well-being

Core Readings

Bae, Chang-Hee Christine. (2004). "Transportation and the Environment" (pp.356-381) in *The Geography of Urban Transportation, Third Edition,* Susan Hanson and Genevieve Giuliano, Eds. New York, NY: The Guilford Press.

Bell, Judith and Larry Cohen (2008). Chapter 1 "Health Effects of Transportation Policy" (pp.22-26) in *Healthy, Equitable Transportation Policy; Recommendations and Research,* Shireen Malekafzali, Ed. PolicyLink, Prevention Institute, and Convergence partnership. Available: http://www.convergencepartnership.org

Topic 2 – Frameworks, Processes, and Sustainability

The elements and contradictions of sustainable development; theories of transportation-land use interaction; implications of transport cost on location choice and urban structure; spatial patterns of uneven development and urban inequality and segregation; city planning processes and human health impacts

Core Readings

Campbell, Scott (1996). Green Cities, Growing Cities, Just Cities? Urban Planning and the Contradictions of Sustainable Development. *Journal of the American Planning Association* (62)3:296-312.

Corburn, J. (2009). "Urban Governance and Human Health" (pp. 61-81), Chapter 3 in Towards the Healthy City; People, Places, and the Politics of Urban Planning.

Giuliano, Genevieve. (2004). Excerpt from "Land Use Impacts of Transportation Investments: Highways and Transit" (pp.242-273) in *The Geography of Urban Transportation, Third Edition*, Susan Hanson and Genevieve Giuliano, Eds. New York, NY: The Guilford Press.

Supplemental Reading

Anas, Alex, Richard Arnott and Kenneth A. Small. (1998). Urban Spatial Structure. *Journal of Economic Literature* 36(3): 1426-1464.

Northridge, Mary E. and Elliott Sclar (2003). A Joint Urban Planning and Public Health Framework: Contributions to Health Impact Assessment. *American Journal of Public Health* 93(1):118-121.

Srinivasan, Shobha, Liam R. O'Fallon, and Allen Dearry (2003). Creating Healthy Communities, Healthy Homes, Healthy People: Initiating a Research Agenda on the Built Environment and Public Health. *American Journal of Public Health* 93(9):1446-1450.

Williams, David R., and Chiquita Collins. (2001). *Racial Residential Segregation: A Fundamental Cause of Racial Disparities in Health.* Public Health Reports, 116:404-416.

Topic 3– History Part 1: City Planning, Transportation and Urban Form

Overview of the historical role of transportation systems and technology on the size, form, and internal structure of cities and development patterns; overview of the history and common roots of the planning and public health professions; review of planning traditions and how they relate to healthy cities

Core Readings

Corburn, J. (2009). "Retracing the Roots of City Planning and Public Health" (pp. 25-60), Chapter 2 in Towards the Healthy City; People, Places, and the Politics of Urban Planning.

Muller, P. O. (2004). "Transportation and Urban Form: Stages in the Evolution of the American Metropolis" (pp.59-85) in *The Geography of Urban Transportation, Third Edition*, Susan Hanson and Genevieve Giuliano, Eds. New York, NY: The Guilford Press.

Topic 4 – History Part 2: The Automobile, Freeways and Sprawl

Origins of freeways systems and auto-oriented urban form; decentralization, planning and public health; debates regarding determinants, benefits, and costs of sprawl

Core Readings

Brown, Jeffrey R., Morris, Eric A. and Taylor, Brian D. (2009). Planning with Good Intentions; Fiscal Politics, Freeways, and the 20th Century American City. ACCESS (35):30-37

Frumkin, Howard, Lawrence Frank, and Richard Jackson (2004). Chapter 1 "What is Sprawl? What Does it Have to Do with Public Health?" (pp.1-25) in Urban Sprawl and Public Health. Washington, DC: island Press.

Sloane, David Charles. (2006). "Longer View: From Congestion to Sprawl: Planning and Health in Historical Context," *Journal of the American Planning Association*, 72(1):10-18.

Supplemental Reading

Brown, Jeffrey R., Morris, Eric A. and Taylor, Brian D. (2009). Planning for Cars in Cities: Planners, Engineers, and Freeways in the 20th Century. *Journal of the American Planning Association*, 75(2):1-17. [This is the more detailed version of the Brown article above]

Topic 5 – History Part 3: Master Planned Communities

Review of 'new town' developments of 1960s and 1970s (including Irvine) which were touted as the "end of sprawl"; what works and doesn't in these master planned communities

Core Readings

Forsyth, Ann. (2002). Planning Lessons from Three U.S. New Towns of the 1960s and 1970s; Irvine, Columbia, and The Woodlands. *Journal of the American Planning Association*, 68(4): 387-415.

Forsyth, Ann. (2005). Grading the Irvine Ranch. *Planning.* American Planning Association, pp. 36-39.

Supplemental Reading

Schiesl, Ann. (1991). "Designing the Model Community: The Irvine Company and Suburban Development 1950-88" (pp. 55-91), Chapter 3 in Postsuburban California; The Transformation of Orange County since World War II. Eds., Rob Kling, Spencer Olin, Mark Poster. Berkeley, CA: University of California Press.

Topic 6 – Air Pollution Basics & Overview of Activity/Exposure

Source and dispersion patterns of vehicle-related air pollution; lifetime and fate framework for understanding the horizontal and vertical sphere of influence and temporal scale; frameworks and methods for assessing pollution exposure and health effects; the impacts of criteria pollutants and regulatory strategies; overview of potential remedies including land use restrictions, housing market notifications, public awareness

Core Readings

Barth, Matthew and Kanok Boriboonsomin. (2009). Traffic Congestion and Greenhouse Gases. ACCESS, (35):2-9.

California Air Resources Board (2012) Status of Research on Potential Mitigation Concepts to Reduce Exposure to Nearby Traffic Pollution. August 23, 2012.

Künzli, Nino, Rob McConnell, David Bates, Tracy Bastain, Andrea Hricko, Fred Lurmann, Ed Avol, Frank Gilliland, and John Peters (2003). Breathless in Los Angeles: The Exhausting Search for Clean Air. *American Journal of Public Health*, 93(9):1494-1499.

South Coast Air Quality Management District (2012) Chapter 2 "Air Quality and Health Effects" (34 pages) of the 2012 Draft Air Quality Management Plan. Diamond Bar, CA: South Coast Air Quality Management District. http://www.aqmd.gov/aqmp/2012aqmp

Winer, A. 2004. "Air Pollution Exposure," Southern California Environmental Report Card, UCLA Institute of the Environment, pp.12-21.

Supplemental Readings

California Air Resources Board (2004) Executive Summary (pp.ES-1 – ES-2) and Section 1 (pp.1-34) of "Air Quality and Land Use Handbook: A Community Health Perspective" http://www.arb.ca.gov/ch/landuse.htm.

Delfino, R. J. (2006). Think globally, breathe locally. *Thorax*, 61:184-185

Fruin, S., D. Westerdahl, T. Sax, C. Sioutas, and P.M. Fine. (2008). Measurements and predictors of on-road ultrafine particle concentrations and associated pollutants in Los Angeles. *Atmospheric Environment* 42:207–219.

Lipfert, F.W., Wyzga, R.E., 2008. On exposure and response relationships for health effects associated with exposure to vehicular traffic. Journal of Exposure Analysis and Environmental Epidemiology 18, 588-599.

Ott, W.R., 1985. Total Human Exposure. Environmental Science and Technology 19, 880-886

Topic 7 – The Transportation and Air Quality Planning Framework

History of air pollution regulation in US and in California; The Clean Air Act, criteria pollutants and federal regulatory structure, State Implementation Plans, Regional Transportation/Air Quality governance; NEPA/CEQA project review, Framework for AB32 and SB375 to address greenhouse gas emissions through land use and transportation planning.

Core Readings

Howitt, A. M. and A. Alsthuler. (1999). "The Politics of Controlling Auto Air Pollution" (pp.223-255) in *The Geography of Urban Transportation, Third Edition,* Gomez-Ibanez, William B. Tye, and Clifford Winston, Eds. Washington, D.C.: Brookings Institution Press, 1999.

Johnston, Robert A. (2004). "The Urban Transportation Planning Process" (pp.115-140) in *The Geography of Urban Transportation, Third Edition,* Susan Hanson and Genevieve Giuliano, Eds. New York, NY: The Guilford Press.

Natural Resources Defense Council. (2012). A Bold Plan for Sustainable California Communities: A Report on the Implementation of Senate Bill 375. (35 pages)

Southern California Association of Governments (SCAG). (2012). "Executive Summary" (pp.) and "Chapter 1. Vision" (pp.) in the *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future*. http://rtpscs.scag.ca.gov

Winer, Arthur. 2004. "Air quality in Southern California – Time for a paradigm shift," *State of the Region,* Southern California Association of Governments. pp.84-97.

Supplemental Reading

Van Vorst, WM. D. and R. S. George (1997). The Impact of the California Clean Air Act. International Journal of Hydrogen Energy, 22(1):31-38.

Wachs, Martin. (2004). Excerpt from "Reflections on the Planning Process" (pp.154-162) in *The Geography of Urban Transportation, Third Edition,* Susan Hanson and Genevieve Giuliano, Eds. New York, NY: The Guilford Press.

Topic 8 – Travel Behavior Analysis in Transportation and Air Quality Planning

Methods for collecting travel and activity data for transportation planning and environmental health assessment. Trends in travel behavior and technology.

Core Readings

Boarnet, Marlon G. (2011). A Broader Context for Land Use and Travel Behavior, and a Research Agenda. *Journal of the American Planning Association*, 77:3, 197-213.

Pucher, John, Ralph Buehler, Dafna Merom, and Adrian Bauman (2011). Walking and Cycling in the United States, 2001–2009: Evidence From the National Household Travel Surveys. *American Journal of Public Health*, 8 pages.

Stopher, Peter, Stephen P. Greaves (2007). Household travel surveys: Where are we going? *Transportation Research Part A*, 41: 367–381.

Topic 9 – Environmental and Social Justice and Health Disparities

Social, economic, and institutional forces that influence the distribution of environmental hazards and exposures; Foundations and history of the environmental justice movement; Addressing outcomes (documentation of disparate outcomes) vs. processes (underlying causes of inequalities); Institutionalization of environmental justice and public participation requirements into the planning process

Core Readings

Cairns, Shannon, Greig, Jessica, & Wachs, Martin. (2003). Environmental Justice & Transportation: A Citizen's Handbook. (16 pages) UC Berkeley: Institute of Transportation Studies. Retrieved from: http://escholarship.org/uc/item/66t4n94b

Deka, Devajyoti. (2004). "Social and Environmental Justice Issues in Urban Transportation" (pp.332-355) in *The Geography of Urban Transportation, Third Edition,* Susan Hanson and Genevieve Giuliano, Eds. New York, NY: The Guilford Press.

Houston, Douglas, Jun Wu, Paul Ong, and Arthur Winer. (2004). Structural Disparities of Urban Traffic in Southern California: Implications for Vehicle-Related Air Pollution Exposure in Minority and High-Poverty Neighborhoods. *Journal of Urban Affairs*, 25(5):565-92.

Morello-Frosch, Rachel and Russ Lopez. (2006). The riskscape and the color line: Examining the role of segregation in environmental health disparities. *Environmental Research* 102:181-196.

Supplemental Reading

Buonocore, Jonathan J., Harrison J. Lee, and Jonathan I. Levy. (2009). The Influence of Traffic on Air Quality in an Urban Neighborhood: A Community–University Partnership. *American Journal of Public Health*. 99:S629–S635.

Houston, Douglas, Jun Wu, Paul Ong, and Arthur Winer. (2006) Down to the Meter: Localized Vehicle Pollution matters. ACCESS, (29):22-27. [This is an abbreviated version of the Houston article above]

Marshall, Julian D. 2008. Environmental inequality: Air pollution exposures in California's South Coast Air Basin Atmospheric Environment 42 (2008) 5499–5503.

Schweitzer, Lisa and Abel Valenzuela, Jr. (2004) "Environmental Injustice and Transportation: The Claims and the Evidence," *Journal of Planning Literature*, 18:383-398.

Wier, Megan, Charlie Sciammas, Edmund Seto, Rajiv Bhatia, and Tom Rivard, (2009). Health, Traffic, and Environmental Justice: Collaborative Research and Community Action in San Francisco, California. *American Journal of Public Health*, 99:S499–S504.

Topic 10 – Traffic, Urban Design, Complete Streets, and Walkable Cities

Overview of design principles of complete streets and walkable cities; the importance and potential of sidewalks and alleys; social justice implications of active living initiatives

Core Readings

Appleyard, Donald and Mark Lintell (1972) The Environmental Quality of City Streets: The Residents' Viewpoint. AIP Journal, March 1971:84-101.

Day, Kristen. (2006). Active Living and Social Justice. *Journal of the American Planning Association*, 72(1):88-99.

Dumbaugh, Eric and Gattis, J. L. (2005). Safe Streets, Livable Streets. *Journal of the American Planning Association*, 71(3): 283- 300.

Frank, Lawrence D., and Peter Engelke. (2005). Multiple Impacts of the Built Environment on Public Health: Walkable Places and the Exposure to Air Pollution. International Regional Science Review 28(2):193-216.

Laplante, John and Barbara McCann (2008). Complete Streets: We Can Get There from Here, ITE Journal, May 2008, 24-28.

Loukaitou-Sideris, Anastasia and Renia Ehrenfeucht. (2002) Vibrant Sidewalks in the United States; Re-integrating Walking and a Quintessential Social Realm. ACCESS, (36):22-29.

Model Street Design Manual for Living Streets, Los Angeles County (2011) http://www.modelstreetdesignmanual.com/

Southworth, Michael. (2005). Designing the Walkable City. *Journal of Urban Planning and Development*, 131(4):246-257.

Taylor, Brian. (2002). Rethinking Traffic Congestion. ACCESS, (21):8-16.

Wolch, Jennifer. (2010). The forgotten and the future: reclaiming back alleys for a sustainable city. *Environment and Planning A*, 42:2874-2896.

Supplemental Reading

Everett, Michael D.(1974) Roadside Air Pollution Hazards in Recreational Land Use Planning *Journal of the American Planning Association*, 40(2):83-89.

Marshall, Julian D., Michael Brauer, and Lawrence D. Frank. (2009). Healthy Neighborhoods: Walkability and Air Pollution. Environmental Health Perspectives, 117(11): 1752- 1759.

McCann, Barbara and Suzanne Rynne (2010). "Making the Transition: Planning for Change and Addressing Problems" (pp. 45-64), Chapter 5 in Complete Streets: Best Policy and Implementation Practices, American Planning Association Planning Advisory Service Report Number 559.

Shoup, Donald . (2002) Fixing Broken Sidewalks. ACCESS, (36):30-36.

Topic 11 – Impacts of the Built Environment on Walking and Biking

How and in what ways does the built environment impact non-motorized travel; strategies for reducing auto travel and promoting active living; implications of active living strategies for disadvantaged communities; safety and traffic accidents

Core Readings

Handy, Susan L., Marlon G. Boarnet, Reid Ewing and Richard E. Killingsworth. (2002). How the Built Environment Affects Physical Activity Views from Urban Planning, *American Journal of Preventive Medicine*, 23(2S):64-73.

Handy, Susan (2008). Chapter 4 "Walking, Bicycling, and Health" (pp. 63-77) in *Healthy, Equitable Transportation Policy; Recommendations and Research,* Shireen Malekafzali, Ed. PolicyLink, Prevention Institute, and Convergence partnership. Available: http://www.convergencepartnership.org

Pucher, John and Lewis Dijkstra (2003). Promoting Safe Walking and Cycling to Improve Public Health: Lessons From The Netherlands and Germany. *American Journal of Public Health* 93(9):1509-1516.

Supplemental Reading

Krizek, K.J., S L Handy, A Forsyth (2009). Explaining changes in walking and bicycling behavior: challenges for transportation research. Environment and Planning B: Planning and Design, 36:725-740.

Pucher, John, Jennifer Dill, and Susan Handy (2009). Infrastructure, programs, and policies to increase bicycling: An international review, *Preventive Medicine,* in press (20 pages). doi:10.1016/j.ypmed.2009.07.028

Reynolds, Conor C.O., M. Anne Harris, Kay Teschke, Peter A. Cripton, and Meghan Winters. (2009). The impact of transportation infrastructure on bicycling injuries and crashes: a review of the literature. *Environmental Health*, 8 (19 pages).

Topic 12 – GHGs, Compact Development, and Smart Growth

Guiding principles of smart growth and sustainability; compact development strategies for reducing vehicle miles traveled (VMT) and green-house gas (GHG) emissions from passenger vehicles; air pollution implications of dense and infill development and mixed use development

Core Readings

Frank, Lawrence and Sarah Kavage with Todd Litman. (2006). Promoting public health through Smart Growth Building healthier communities through transportation and land use policies and practices. (52 pages). Prepared for SmartGrowthBC.

Schweitzer, Lisa and Zhou, Jiangping (2010) 'Neighborhood Air Quality, Respiratory Health, and Vulnerable Populations in Compact and Sprawled Regions', Journal of the American Planning Association, 76: 3, 363-371.

Transportation Research Board. (2009). *Driving and the Built Environment: The Effects of Compact Development on Motorized Travel, Energy Use, and CO_2 – Report in Brief***.** (4 pages). Washington, DC: Transportation Research Board (www.trb.org).

Supplemental Reading

Girling, Cynthia L.(2010) 'Smart Growth meets low impact development: a case study of UniverCity, Vancouver, Canada', Journal of Urbanism: International Research on Placemaking and Urban Sustainability, 3: 1, 69- 93

Smart Growth Network (2006). This is Smart Growth. (32 pages).

Topic 13 – Transit, Transit Oriented Development, and Housing

Public transportation usage patterns; patterns of auto dependency; Public transportation's ability to promote mobility and implications for community health

Core Readings

Center for Transit-Oriented Development (2009). Mixed-Income Housing Near Transit; Increasing Affordability With Location Efficiency. 26 pages.

Litman, Todd (2008). Chapter 6 "Public Transportation and Health" (pp. 37-61) in *Healthy, Equitable Transportation Policy; Recommendations and Research,* Shireen Malekafzali, Ed. PolicyLink, Prevention Institute, and Convergence partnership. Available: http://www.convergencepartnership.org

Loukaitou-Sideris, Anastasia. 2007. "TODs for Southern California: Challenges and Prospects," *State of the Region,* Southern California Association of Governments. pp. 56-65.

U.S. Department of Transportation Federal Transit Administration. 2009. Public Transportation's Role in Responding to Climate Change. pp. 1-6.

Supplemental Reading

Blumenberg, Evelyn, and Alexandra Norton. 2010. Falling Immigration Rates Mean Falling Transit Ridership. Access 37: 10-16.

Federal Reserve Bank of San Francisco (2010). Transit-Oriented Development.

Guiliano, Genevieve (2005). Low Income, Public Transit, and Mobility. *Transportation Research Record: Journal of the Transportation Research Board*, No 1927, Transportation Research Board of the National Academies, Washington, D.C., pp. 63-70.

Loukaitou-Sideris, Anastasia. (2010). A New-found Popularity for Transit-oriented Developments? Lessons from Southern California, *Journal of Urban Design*, 15(1): 49-68.

National Housing Trust (2010). Preserving Affordable Housing Near Transit.Case Studies from Atlanta, Denver, Seattle and Washington, D.C.

Ong, Paul and Douglas Houston (2002). Transit, Employment, and Women on Welfare. *Urban Geography*, 23(4):344-364.

US HUD, DOT and EPA (2009). HUD, DOT and EPA Partnership: Sustainable Communities. (2 pages). Statement of Cooperation, June 16, 2009.

Topic 14 – Energy, Efficiency and Alternative Fuels/Technology

Energy and emission impacts of vehicle travel; Alternative vehicle technology and energy/fuels; strategies for low-carbon transportation and energy systems; the limits of technological fixes

Core Readings

Greene, David L. (2004). "Transportation and Energy" (pp.274-293) in *the Geography of Urban Transportation, Third Edition,* Susan Hanson and Genevieve Giuliano, Eds. New York, NY: The Guilford Press.

Schipper, Lee. (2009) "Fuel Economy Standards." ACCESS, (34):11-19.

Supplemental Reading

Kammen, Daniel M., Samuel M. Arons, Derek M. Lemoine, and Holmes Hummel. (2009) "Saving Fuel, Reducing Emissions Making Plug-In Hybrid Electric Vehicles Cost-Effective." ACCESS, (34):2-10.

Sperling, Daniel and Sonia Yeh. (2009) "Transforming the Oil Industry into the Energy Industry." ACCESS, (34):2-10.

Topic 15 – Impacts of Goods Movement

The challenges of understanding/addressing the local, regional, and global impacts of the goods movement transportation sector; impacts of ports and strategies to mitigate impacts; Case study of 2007 clean diesel truck regulations and the Clean Truck Programs at Southern California ports

Core Readings

Hricko, Andrea. (2008). Global Trade Comes Home; Community Impacts of Goods Movement. *Environmental Health Perspectives* 116(2):A78-A81.

Natural Resources Defense Council. (2004). Overview and Port of LA and Port of LB Rankings (pp.1-23) and Recommendations (pp.59-63) of "Harboring Pollution; The Dirty Truth about U.S. Ports." Natural Resources Defense Council.

Ports of Los Angeles and Port of Long Beach (2006). Overview of San Pedro Bay Clean Air Action Plan. (44 pages).

Supplemental Reading

Boarnet, Marlon G., Lindell Marsh, Chris Lunghino, and Lucy Olmos (2009). "Sustainable Goods Movement in Southern California: The Promise of Collaborative Planning," Chapter 4.3 in *Transportation Infrastructure: The Challenges of Rebuilding America,* Marlon G. Boarnet, Ed., American Planning Association Planning Advisory Service, Report Number 557. pp. 59-68.

National Environmental Justice Advisory Committee (2009). Reducing Air Emissions Associated With Goods Movement: Working Towards Environmental Justice. (41 pages). A Report of Advice and Recommendations of the National Environmental Justice Advisory Council, A Federal Advisory Committee to the U.S. Environmental Protection Agency.

Natural Resources Defense Council. (2007). Truck Drivers Face Elevated Health Risks from Diesel Pollution. 20 pages.

Perez, Laura, Nino Kunzli, Ed Avol, Andrea M. Hricko, Fred Lurmann, Elisa Nicholas, Frank Gilliland, John Peters, and Rob McConnell (2009). Global Goods Movement and the Local Burden of Childhood Asthma in Southern California. *American Journal of Public Health,* 99:S622–S628.

Topic 16 – Accessibility, Spatial Mismatch, and Food Security

Distribution of residential locations of disadvantaged communities, economic opportunities/constraints and transportation resources; the "mismatch" between where poor people live and where jobs are available; racial segregation and health disparities; linkages between segregation, transportation and access to healthy foods and services.

Core Readings

Blumenberg, Evelyn and Michael Manville. (2004). Beyond the Spatial Mismatch: Welfare Recipients and Transportation Policy, *Journal of Planning Literature,* 19:182-205.

Larson, Nicole I., Mary T. Story and Melissa C. Nelson (2009). Neighborhood Environments; Disparities in Access to Healthy Foods in the U.S. *American Journal of Preventative Medicine,* 36(1):74-81.

Supplemental Reading

Ong, Paul and Douglas Miller (2005). Spatial and Transportation Mismatch in Los Angeles *Journal of Planning Education and Research,* 25:43-56.

Powell, Lisa M., Sandy Slater, Donka Mirtcheva, Yanjun Bao, and Frank J. Chaloupka (2007). Food store availability and neighborhood characteristics in the United States. *Preventive Medicine* 44:189–195.

Sanchez, Thomas W. (1999). The Connection Between Public Transit and Employment; The Case of Portland and Atlanta. *Journal of the American Planning Association,* 65(3):284-296.