

Sustainability Seminar, Fall 2015

GEOG 6000/8000, ARCH6050, INES 8090

Instructor: Robert Boyer, Assistant Professor [rboyer1@uncc.edu]

Meeting Time: Thursday 3:30-6:15. Room 441 McEniry.

In the past twenty years, the concept of sustainability and its policy corollary “sustainable development” have stimulated important debates about the role of city planning and local policy making in response to global, twenty-first century environmental issues. This course launches graduates students—of multiple disciplines—into this exciting scholarly conversation.

A Brief History of City Planning

Until about 100 years ago, cities were perilous places. Only after decades of gridlock, violent crime, disease outbreaks, fires, and riots did city leaders begin to enforce new rules to improve urban squalor. In the late 1800s innovations in transportation technology, energy extraction, and electrification increased human mobility, allowing individuals to live comfortably and safely in large urban regions. New regulatory mechanisms prevented factories from opening up in the middle of neighborhoods, and facilitated the convenient and orderly installation of urban infrastructure. Urban places had never been so efficient, safe, and comfortable.

Too much of a good thing?

Fast-forward to 2014, and many of these modern marvels have proven maladaptive. The USA and other nations have grown dependent upon personal automobiles and the scarce energy required to fuel them. Our auto-oriented cities and regions confront issues of air pollution, traffic, accidents, and a veritable addiction to petroleum imported from thousands of miles away. The consumption of fossil fuels in homes and automobiles has begun to alter the earth’s carbon cycle, contributing to global climate change and its many unpredictable local consequences. Human activity on earth has resulted in extinction rates unseen since the fall of the dinosaurs, and threatens the long-term well being of humanity. Furthermore, the benefits of modern city planning have not extended to all corners of the population: modern American cities have been designed around the needs of white working men, often marginalizing low-income residents, people of color, and women.

More challenges ahead.

It is growing clear that cities are unsustainable in their current form, but we cannot simply dismantle them and ‘start over’: cities are home to over half the world’s human population and 80 percent of the population in the USA. This proportion is expected to increase in coming decades. How can we meet the needs of urban populations without compromising the ability of future generations to meet their own needs?

This course will explore the causes and consequences of un-sustainable cities, the innovations emerging as alternatives, and theoretical frameworks to understand the social and technological changes necessary to move in a sustainable direction. While few would deny that global urban development in its current form is un-sustainable, the extent of the

necessary change, and the theoretical models through which social and environmental change should proceed remain an exciting and ever-evolving topic of debate.

This Sustainability Seminar will engage graduate students in reading, discussion, and guided research on the dilemmas of urban sustainability and planning approaches to address these dilemmas. We will examine the concept of sustainability critically, comparing its diverse applications and meanings as a guide for decisions in the built environment. We will explore the social and physical structures that make radical change difficult. We will explore innovations in city planning like ecological footprinting, climate action planning, smart growth, bus rapid transit, energy-efficient technologies, and the growing ecovillage movement. Although we will engage scholarship from all over the world, and explore innovations in Latin American and some European cities, most of our discussion will focus on problems and solutions specific to the United States.

This is a reading and discussion-based course. Students are required to read and outline several (usually 2-3) readings prior to Thursday's class and come to class prepared to contribute to conversation. Each reading will be assigned a classroom "shepherd" to help initiate discussion. By the end of the semester these reading outlines will form a useful annotated bibliography.

Evaluation:

Annotated Bibliography (due at the midpoint and end of the semester)...30%

Synthesis Paper...50%

In-class presentation...10%

Paper part 1...10%

Paper part 2...10%

Paper part 3...10%

Final paper...10%

Mecklenburg County Land Use Inventory...10%

Participation in classroom discussion...10%

Annotated Bibliography (30 percent of grade)

Students must submit an annotated bibliography with entries for all required readings. Each reading should have a one-page entry with a complete citation, an original summary of the author's argument, discussion of key findings, critiques, and questions. Students should come to class each day with the appropriate annotations, but bibliographies will only be collected and evaluated at two points: in the middle of the semester (due date October 8) and at the end of the semester (due date December 3). Annotated bibliographies must be submitted as a single PDF and e-mailed to rboyer1@uncc.edu.

Synthesis Paper and Presentation (50 percent of grade)

By week 4 of the course, students must choose a synthesis paper topic. Students are encouraged to discuss their topic with the professor. Students are responsible for "owning" the material, and initiating our classroom session with a concise, 15-minute presentation. The presentation should conclude with more questions—logical, ethical,

and political dilemmas with no obvious answer— for the class to contemplate as we discuss the assigned readings.

Students must also submit a synthesis paper corresponding to their presentation. The paper should be the length of an academic journal article (6,000-8,000 words) and draw from multiple sources beyond the required readings. The research paper will be written in three stages: (1) a review of existing research around the topic (due October 29); (2) a discussion of research gaps, dilemmas, and un-answered questions (due November 12); and (3) a discussion of practical, social, and/or policy implications (due December 3). Each section should be approximately 2,000 words. The final draft of the paper, which combines all three sections is due the date of the final exam.

Here is a list of potential topics:

- The use of ecological footprinting as a tool for policy makers
- The origins of ‘sprawl’ in the United States
- The advantages and disadvantages of compact development
- Smart growth or other growth management policies
- Growth politics—the political challenges to addressing sprawl or sustainable development in the USA
- Climate action planning
- Environmental justice (in a specific region, or related to a specific policy context)
- Transportation and climate change
- Bus rapid transit and innovations in transit approaches
- Cohousing, ecovillages, or other types of neighborhood-scale approaches to sustainable community
- Water conservation
- The sharing economy and its relationship to sustainability
- Other topics, pending instructor approval

Mecklenburg County Land Use Inventory (10 percent of grade)

On October 8th we will spend the day in the computer lab building a land use inventory for Mecklenburg County. This exercise will involve the use of ArcGIS, but does not require any foreknowledge of the tool. Students will be provided land cover data and a tutorial, which they will use to create a land cover inventory of the county and a short report about how land cover has changed in the last decade. A completed land cover inventory report is due October 22nd at the beginning of class.

Classroom participation (10 percent of grade)

It is expected that students attend class each week, and make substantial contributions to conversation. Students that attend class and contribute to conversations with questions informed by the readings will receive full participation credit.

Course Schedule

- ← a solid black bullet point signifies that the article can be accessed through the UNC Charlotte library website or through the listed URL.
- ❖ ← a diamond bullet point signifies that the article will be made available on the course's Moodle page
- ← a hollow bullet point signifies a supplementary reading

August 27. Introduction. *How can the same problem be seen as both 'tame' and 'wicked'? What implications does seeing a problem as 'wicked' have on the actions of planners and public policy makers. In other words, if a problem is 'wicked' what do planners do differently than if it were 'tame'?*

- Rittel, Horst W. J., and Melvin M. Webber. "Dilemmas in a General Theory of Planning." *Policy Sciences* 4, no. 2 (June 1973): 155–69. doi:10.1007/BF01405730.

September 3. *If sustainability is everything, then maybe it is nothing. Without choosing a side, be able to articulate the different assumptions about different sides in debates about the meaning of sustainability and sustainable development.*

- Rees, William E. "Achieving Sustainability: Reform or Transformation?" *Journal of Planning Literature* 9, no. 4 (May 1, 1995): 343–61. doi:10.1177/088541229500900402.
- Swyngedouw, Erik. "Impossible 'Sustainability' and the Postpolitical Condition." In *The Sustainable Development Paradox: Urban Political Economy in the United States and Europe*, edited by Rob Krueger and David Gibbs, 13–40. Guilford Press, 2007.
- Robinson, John. "Squaring the Circle? Some Thoughts on the Idea of Sustainable Development." *Ecological Economics* 48, no. 4 (April 20, 2004): 369–84. doi:10.1016/j.ecolecon.2003.10.017.
- Orr, David W. "Two Meanings of Sustainability (1988)." In *Hope Is an Imperative*, 93–111. Island Press/Center for Resource Economics, 2011. http://link.springer.com.librarylink.uncc.edu/chapter/10.5822/978-1-61091-017-0_11.
- Krueger, Rob, and Julian Agyeman. "Sustainability Schizophrenia or 'actually Existing Sustainabilities?' toward a Broader Understanding of the Politics and Promise of Local Sustainability in the US." *Geoforum* 36, no. 4 (July 2005): 410–17. doi:10.1016/j.geoforum.2004.07.005.

September 10. Sustainability as balancing contradicting values. *What compromises and tensions does the agenda for sustainability imply? How can local governments operationalize these theoretical tensions in attempts to achieve sustainable development?*

- Campbell, Scott. "Green Cities, Growing Cities, Just Cities?: Urban Planning and the Contradictions of Sustainable Development." *Journal of the American Planning Association* 62, no. 3 (1996): 296–312. doi:10.1080/01944369608975696.
- Saha, Devashree, and R. G. Paterson. "Local Government Efforts to Promote the 'Three Es' of Sustainable Development: Survey in Medium to Large Cities in the United States." *Journal of Planning Education and Research* 28, no. 1 (May 12, 2008): 21–37. doi:10.1177/0739456X08321803.
- Wheeler, Stephen M. "The Evolution of Urban Form in Portland and Toronto: Implications for Sustainability Planning." *Local Environment* 8, no. 3 (June 1, 2003): 317–36. doi:10.1080/13549830306656.

- Berke, Philip R, and Maria Manta Conroy. “Are We Planning for Sustainable Development?” *Journal of the American Planning Association* 66, no. 1 (2000): 21–33. doi:10.1080/01944360008976081.

September 17. Applying and measuring sustainability. *How can we measure and report sustainable development? Rees and Wackernagel claim that urban living both unsustainable and ‘the key to sustainability’. Explain this argument, and explain what must change if we are to achieve sustainable cities? How is sustainability footprinting different than ecological footprinting?*

- Rees, William E., and Mathis Wackernagel. “Urban Ecological Footprints: Why Cities Cannot Be Sustainable -- And Why They Are a Key to Sustainability.” *Environmental Impact Assessment Review*. 16, no. 4–6 (1996): 223.
- Living Planet Report (2014), pages 32-43. Can be accessed here: http://assets.worldwildlife.org/publications/723/files/original/WWF-LPR2014-low_res.pdf?1413912230&_ga=1.112473421.857138193.1435789546.
- Amekudzi, Adjo A., Meleckidzedek Khayesi, and Jotin C. Khisty. “Sustainable Development Footprint: A Framework for Assessing Sustainable Development Risks and Opportunities in Time and Space.” *International Journal of Sustainable Development* 18, no. 1–2 (January 1, 2015): 9–40. doi:10.1504/IJSD.2015.066786.

September 24. Climate change: causes and consequences

TERM PAPER PROPOSALS DUE.

- ❖ Data presentation contest!
- Energy Information Administration (eia.gov)
- Exploring CO2 emissions with the Housing & Transportation Index (<http://htaindex.cnt.org/>)

October 1. Causes of Sprawl. What is ‘sprawl’ and why does it dominate residential landscapes in the United States? CHALLENGE: Create an infographic that explains the causes of sprawl in the USA. Convert your infographic into a single powerpoint slide. We will vote as a class on the winning entry.

- Harris, Richard. “The Birth of the Housing Consumer in the United States, 1918–1960.” *International Journal of Consumer Studies* 33, no. 5 (September 1, 2009): 525–32. doi:10.1111/j.1470-6431.2009.00797.x.
- ❖ Checkoway, Barry. “Large Builders, Federal Housing Programmes, and Postwar Suburbanization.” *International Journal of Urban and Regional Research* 4, no. 1 (1980): 21–45. doi:10.1111/j.1468-2427.1980.tb00350.x.
- ❖ Hayden, Dolores. *Redesigning the American Dream: The Future of Housing, Work, and Family Life*. W. W. Norton & Company, 2002. Chapters 1-2.

October 8. Growth management and Smart Growth. *What are the costs and benefits of more compact cities? What policy approaches can planners and elected officials use to achieve goals of compactness? Are existing approaches working?*

- Neuman, Michael. “The Compact City Fallacy.” *Journal of Planning Education and Research* 25, no. 1 (September 1, 2005): 11–26. doi:10.1177/0739456X04270466.
- Hamidi, Shima, and Reid Ewing. “A Longitudinal Study of Changes in Urban Sprawl between 2000 and 2010 in the United States.” *Landscape and Urban Planning* 128 (August 2014): 72–82. doi:10.1016/j.landurbplan.2014.04.021.
- Carruthers, John I, and Gudmundur F Ulfarsson. “Urban Sprawl and the Cost of Public Services.” *Environment and Planning B: Planning and Design* 30, no. 4 (2003): 503–22. doi:10.1068/b12847.

- Lewis, Rebecca, Gerrit-Jan Knaap, and Jungyul Sohn. “Managing Growth With Priority Funding Areas: A Good Idea Whose Time Has Yet to Come.” *Journal of the American Planning Association* 75, no. 4 (2009): 457–78. doi:10.1080/01944360903192560.
- Song, Yan. “Smart Growth and Urban Development Pattern: A Comparative Study.” *International Regional Science Review* 28, no. 2 (April 1, 2005): 239–65. doi:10.1177/0160017604273854.
- Wilson, Bev, and Arnab Chakraborty. “The Environmental Impacts of Sprawl: Emergent Themes from the Past Decade of Planning Research.” *Sustainability* 5, no. 8 (August 5, 2013): 3302–27. doi:10.3390/su5083302.

October 15. Growth politics. *What obstacles does the agenda for smart growth confront? Why, according to Anthony Downs, is it unlikely that Smart Growth will ever be fully implemented? What approaches can policy makers take overcome these hurdles?*

- Downs, Anthony. “Smart Growth: Why We Discuss It More than We Do It.” *Journal of the American Planning Association* 71, no. 4 (2005): 367–78. doi:10.1080/01944360508976707.
- Hurley, Patrick T, and Peter A Walker. “Whose Vision? Conspiracy Theory and Land-Use Planning in Nevada County, California.” *Environment and Planning A* 36, no. 9 (2004): 1529–47. doi:10.1068/a36186.
- Krueger, Rob, and David Gibbs. “‘Third Wave’ Sustainability? Smart Growth and Regional Development in the USA.” *Regional Studies* 42, no. 9 (November 1, 2008): 1263–74. doi:10.1080/00343400801968403.
- Gordon, Peter, and Harry W. Richardson. “Are Compact Cities a Desirable Planning Goal?” *Journal of the American Planning Association* 63, no. 1 (1997): 95–106. doi:10.1080/01944369708975727.

October 22. Environmental justice. *Do certain groups experience disproportionate consequences of environmental contamination that others? Which groups, and why? What steps can policy makers take to address these problems? How does the concept of environmental justice interact with goals of conservation and economic development?*

LAND COVER INVENTORY DUE

- <http://ejscreen.epa.gov/mapper/index.html>
- Agyeman, Julian, Robert D. Bullard, and Bob Evans. “Exploring the Nexus: Bringing Together Sustainability, Environmental Justice and Equity.” *Space and Polity* 6, no. 1 (2002): 77–90. doi:10.1080/13562570220137907.
- Sweet, Elizabeth L. “Latina Kitchen Table Planning Saving Communities: Intersectionality and Insurgencies in an Anti-Immigrant City.” *Local Environment* 20, no. 6 (June 3, 2015): 728–43. doi:10.1080/13549839.2014.968840.

October 29. Climate action planning. In the last decade cities and regions have begun to draft climate action plans in response to growing national and international pressure to curb GHG emissions. *How do CAPs address these problems? What tools do local policy makers use to lower GHG emissions? What seems to be working? What are some of the shortcoming, and pathways forward in the future?*

TERM PAPER PART 1 DUE.

- Wheeler, Stephen M. “State and Municipal Climate Change Plans: The First Generation.” *Journal of the American Planning Association* 74, no. 4 (2008): 481–96. doi:10.1080/01944360802377973.
- Boyer, Robert. “Sociotechnical Transitions and Urban Planning A Case Study of Eco-Cohousing in Tompkins County, New York.” *Journal of Planning Education and Research* 34, no. 4 (December 1, 2014): 451–64. doi:10.1177/0739456X14554037.

- Krause, Rachel M., Hongtao Yi, and Richard C. Feiock. “Applying Policy Termination Theory to the Abandonment of Climate Protection Initiatives by U.S. Local Governments.” *Policy Studies Journal*, June 1, 2015, n/a – n/a. doi:10.1111/psj.12117.
- Bassett, Ellen, and Vivek Shandas. “Innovation and Climate Action Planning.” *Journal of the American Planning Association* 76, no. 4 (2010): 435–50. doi:10.1080/01944363.2010.509703.
- Tang, Zhenghong, Samuel D. Brody, Courtney Quinn, Liang Chang, and Ting Wei. “Moving from Agenda to Action: Evaluating Local Climate Change Action Plans.” *Journal of Environmental Planning and Management* 53, no. 1 (2010): 41–62. doi:10.1080/09640560903399772.
- Millard-Ball, Adam. “The Limits to Planning Causal Impacts of City Climate Action Plans.” *Journal of Planning Education and Research* 33, no. 1 (March 1, 2013): 5–19. doi:10.1177/0739456X12449742.
- Zahran, Sammy, Samuel D Brody, Arnold Vedlitz, Himanshu Grover, and Caitlyn Miller. “Vulnerability and Capacity: Explaining Local Commitment to Climate-Change Policy.” *Environment and Planning C: Government and Policy* 26, no. 3 (2008): 544–62. doi:10.1068/c2g.

November 5. Transportation and climate change. *Why is systemic transition so challenging? For example, why is it so challenging for cities to transition away from automobile-centered design to pedestrian- and bicycle-friendly design? What is a socio-technical transition, and what do ‘niches’ have to do with transitions to sustainability?*

- ❖ Jackson, Kenneth T. “The Drive-in Culture of Contemporary America.” In *City Reader*, edited by Richard T. LeGates. Taylor & Francis, 1985.
- Kemp, René, Johan Schot, and Remco Hoogma. “Regime Shifts to Sustainability through Processes of Niche Formation: The Approach of Strategic Niche Management.” *Technology Analysis & Strategic Management* 10, no. 2 (1998).
- Geels, Frank W. “The Dynamics of Transitions in Socio-Technical Systems: A Multi-Level Analysis of the Transition Pathway from Horse-Drawn Carriages to Automobiles (1860–1930).” *Technology Analysis & Strategic Management* 17, no. 4 (2005): 445–76. doi:10.1080/09537320500357319.

November 12. Planning for natural disasters and resiliency. *Climate change and the rapid urbanization of the global population leaves cities and regions more vulnerable to systemic shocks and disasters, both natural and man-made. What can planners do to anticipate and respond to disasters? Recent discussions in urban planning have emphasized the importance of “resiliency” and “resilient cities?” What does it mean for a city to be resilient?*

TERM PAPER PART 2 DUE

- Goldstein, Bruce Evan, Anne Taufen Wessells, Raul Lejano, and William Butler. “Narrating Resilience: Transforming Urban Systems Through Collaborative Storytelling.” *Urban Studies*, October 8, 2013. doi:10.1177/0042098013505653.
- Olshansky, Robert B. “Planning After Hurricane Katrina.” *Journal of the American Planning Association* 72, no. 2 (2006): 147–53. doi:10.1080/01944360608976735.
- Bauman, Margaret. “25 Years After Spill, a Resilient Valdez.” *Planning* 80, no. 4 (April 2014): 12–12.
- Klinenberg, Eric. *Heat Wave: A Social Autopsy of Disaster in Chicago*. University of Chicago Press, 2003.

November 18. Cohousing and energy-conserving buildings. What is cohousing, what types of problems does it solve, and what are the challenges to implementing cohousing in the mainstream?

- Boyer, Robert. “Square peg in a round hole: the hurdles to cohousing in US metropolitan regions.” Unpublished manuscript.
- Jarvis, Helen. “Saving Space, Sharing Time: Integrated Infrastructures of Daily Life in Cohousing.” *Environment and Planning A* 43, no. 3 (2011): 560–77. doi:10.1068/a43296.
- Moos, Markus, Jason Whitfield, Laura C. Johnson, and Jean Andrey. “Does Design Matter? The Ecological Footprint as a Planning Tool at the Local Level.” *Journal of Urban Design* 11, no. 2 (2006): 195–224. doi:10.1080/13574800600644381.
- Williams, Jo. “Designing Neighbourhoods for Social Interaction: The Case of Cohousing.” *Journal of Urban Design* 10, no. 2 (June 1, 2005): 195–227. doi:10.1080/13574800500086998.
- Williams, Jo. “Predicting an American Future for Cohousing.” *Futures* 40, no. 3 (April 2008): 268–86. doi:10.1016/j.futures.2007.08.022.
- Sargisson, Lucy. “Second-Wave Cohousing: A Modern Utopia?” *Utopian Studies* 23, no. 1 (2012): 28–56.
- Chatterton, Paul. “Towards an Agenda for Post-Carbon Cities: Lessons from Lilac, the UK’s First Ecological, Affordable Cohousing Community.” *International Journal of Urban and Regional Research* 37, no. 5 (2013): 1654–74. doi:10.1111/1468-2427.12009.

November 26. THANKSGIVING BREAK- NO CLASSES

December 3. If it’s yellow, let it mellow. Transitions in domestic water consumption.

TERM PAPER PART 3 DUE

- Geels, Frank W. “The Hygienic Transition from Cesspools to Sewer Systems (1840–1930): The Dynamics of Regime Transformation.” *Research Policy* 35, no. 7 (September 2006): 1069–82. doi:10.1016/j.respol.2006.06.001.
- Teh, Tse-Hui. “Bypassing the Flush, Creating New Resources: Analysing Alternative Sanitation Futures in London.” *Local Environment* 20, no. 3 (March 4, 2015): 335–49. doi:10.1080/13549839.2013.847409.