

GSD 5469 ENVIRONMENTAL PLANNING AND SUSTAINABLE DEVELOPMENT: WHAT MAKES A GREEN METROPOLIS? 2017 SYLLABUS DRAFT



Beijing, China

Spring 2017, Location: 517 Gund; Time: Tu/Th 10-11:30
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1. BASIC TIMETABLE

		Potential weekly paper	Longer paper deadlines/homeworks
Frameworks			
Jan 24/26	1: Definitions and histories		
Situations			
Jan			
31/Feb 2	2: Environmental concerns	✓	
Feb 7/9	3: Social issues	✓	Feb 9: Project/case proposal
Feb 14/16	4: Future scenarios	✓	HW: Footprint (paper + Canvas)
Solutions: Urban Patterns and Types			
Feb 21/23	5: Metropolitan densification	✓	HW: Costs/benefits sprawl (PPT)
Feb			
28/Mar 2	6: Green areas	✓	
Mar 7/9	7: New towns and new neighborhoods	✓	HW: Changes in green policies/programs
Solutions: Hot Topics			
Mar 21/23	8: Mobility and access	✓	
Mar 28/30	9: Healthy cities	✓	March 30: Draft paper
Apr 4/6	10: Resiliency	✓	HW: Local implications of climate change skepticism
Reflections			
Apr 11/13	11: Student choice	✓	
Apr 18/20	12: Presentations		
Apr 25	13: Measures	✓	May 5: Final papers due 5pm

2. COURSE AIMS

OVERVIEW

This class is centrally concerned with two questions: What makes a green metropolis and how can planners effectively intervene? Environmental and social sustainability are key areas of contemporary concern. Solution-oriented, this class focuses on key areas where physical planning and associated programs and policies can make a difference to the future of cities and regions. **As such it focuses on rather more on big ideas, key debates, and broad types of policies and tools, and rather less on developing skills in particular techniques that can be picked up elsewhere.**

The course is in five parts:

- Frameworks—examining key definitions and concepts as they have evolved over time.
- Situations—engaging environmental and social aspects of sustainability—the current situation and future scenarios.
- Solutions: Urban Patterns and Types—exploring and critiquing major domains of work in creating sustainable urban area creating more compact urban forms, retrofitting existing areas, and building better development from scratch.
- Solutions: Hot Topics—investigating some current popular debates on mobility and access, healthy cities including food, and resiliency.

- Reflections—involving student selected readings, presentations, and the idea of measuring sustainability.

LEARNING OBJECTIVES

By the end of the course students will:

- Appreciate how ideas about the natural environment have evolved over time in planning and beyond.
- Understand how several overlapping forms of green planning are practiced including environmental planning, sustainable urban development, metropolitan densification, resiliency, and low impact/conservation styles of development.
- Be able to critique the major styles and methods of planning green cities considering both social and environmental sustainability.
- Understand the strengths and weaknesses of several well-known cases of green planning.

3. LOGISTICS

READINGS

The **main text for the class** is available at the Coop and at the library:

- Wheeler, S. and T. Beatley eds. 2014. *Sustainable Urban Development Reader*. Third edition. New York: Routledge.

There are many more readings **online via Canvas or on reserve in the library**.

Two more general books are **recommended**. They are available online in second hand and in eBook editions for about \$5 each and are worth it as investments:

- Booth, Wayne, Gregory G. Colomb, and Joseph M. Williams. 2008. *The Craft of Research*. Chicago: University of Chicago Press. Recommended.
- Turabian, Kate. 2007. *A Manual for Writers of Research Papers, Theses, and Dissertations*. Chicago: University of Chicago Press. Recommended.

OTHER

CONTACTING THE INSTRUCTOR

I have lots of office hours in 309 Gund—about -3-4 times as many as is typical. To sign up for office hours go to <http://annforsyth.net/>, click on the office hours link on the top right, and follow the instructions. You can also just turn up at office hours but may need to wait. If you just pop by outside office hours I'm typically busy with other work and will just ask you to sign up for the next available slot.

There is a great deal of advice for students at <http://annforsyth.net/for-students/>. It may answer your question.

ACADEMIC INTEGRITY

You are expected to adhere to high standards of academic integrity as outlined in university policy: <http://courses.dce.harvard.edu/~phils4/honesty.html>. Pay particular attention to the resources on plagiarism at the bottom.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Students needing academic adjustments or accommodations because of a documented disability must present their Faculty Letter from the Accessible Education Office (AEO) and speak with me (Ann) by the end of the second week of the term. Failure to do so may result in my inability to respond in a timely

manner. All discussions will remain confidential, although faculty members are invited to contact AEO to discuss appropriate implementation.

TECHNOLOGY IN THE CLASSROOM

I do not grade participation, only outputs, but when you are in the classroom you are expected to be fully present. For that reason anyone who wishes to use an electronic device during class time will need to meet with me outside of class and explain why it is absolutely necessary. Such devices include phones, laptops, tablets, and other gadgets capable of connecting to the internet or phone system. Unless you have explicit permission from me you will need to turn off and store such devices.

To learn more about why this is useful please see Professor Stephen Chew's five terrific short videos on metacognition: <http://www.samford.edu/how-to-study/>. This article is also useful: <http://m.theatlantic.com/technology/archive/2014/05/to-remember-a-lecture-better-take-notes-by-hand/361478/>

4. COURSE REQUIREMENTS SUMMARY

ASSIGNMENTS

There are three sorts of assignments. All are described in some detail later in the syllabus.

- Short Homework Assignments 10%
- Response Papers 50%
- Paper and Informal Presentation 40 %

Students are also expected to do the readings before class.

TIMELINESS

Late short papers paper are not accepted. Short illnesses, family events, etc. should be dealt with using the flexibility of being able to drop paper grades for short assignments. That is, assume you will be sick some time; an illness of a day or two is not an excuse for a late paper. Those with religious holidays that make it impossible to hand in something need to inform Ann Forsyth in writing at least a week in advance. If you do have a significant illness that incapacitates you for **several weeks** you need to inform Ann Forsyth ASAP.

For the **paper/project** late submissions are docked marks on the following schedule: 1 hour late -5%; up to 5 hours late -10%; up to 24 hours late -15%; up to 48 hours late -20%; and 10% for every day or part of a day after that.

WHAT ANN PROMISES IN RETURN

If students do the work described in this syllabus in a timely manner, I promise return work promptly with comments, or rather I will return marked up grade sheets. I will also give you opportunities for feedback about the course including a mid-semester evaluation. I will share the results of the evaluation with you.

5. TENTATIVE COURSE SCHEDULE

Note: * means that you will only need to focus on part of the reading—with instructions in class.

FRAMEWORKS

WEEK 1: DEFINITIONS AND HISTORIES

Outline:

- Course overview—how to think about the issues, beyond specific techniques
- Definitions—environmental planning, sustainable development, and ecologies
- Historical development of the idea of environment in planning
- Forms of environmental planning
- Planning tools—collaborations, assessments, policies and plans, built projects, programs
- Are cities sustainable?
- **GUEST:** Richard Forman

Background reading for day 2:

- Forman, R. T. T. 2016. Urban ecology principles: Are urban ecology and natural area ecology really different? *Landscape Ecology* 31: 1653-1662.
- World Commission on Environment and Development. 1987. Towards Sustainable Development from *Our Common Future*, in Wheeler and Beatley, 2014.

SITUATIONS

WEEK 2: ENVIRONMENTAL CONCERNS

Outline:

- Issues: Air, water, soil, habitat, wildlife, climate, waste, energy: Recap from Forman
- Green systems in urban planning: alternative perspectives
- Roles: government, private, activist, and professional
- What environmental planners do—procedures; places; problems; styles
- Urban ecology patterns, processes, and change

Other readings:

- Berke, P.R. 2008. The evolution of green community planning, scholarship, and practice. *Journal of the American Planning Association* 74, 4: 393-407.
- McHarg, I. 1969. Plight and Prospect from *Design With Nature*, in Wheeler and Beatley, 2014.
- Spirn, A. 1984. City and Nature from *The Granite Garden: Urban Nature and Human Design*, in Wheeler and Beatley, 2014.
- Beatley, T. 2011. Biophilic Cities from *Biophilic Cities* (2011), in Wheeler and Beatley, 2014.

WEEK 3: SOCIAL ISSUES

Outline:

- Definitions: Social sustainability, environmental justice, survival, flourishing, and related concepts
- Vulnerability—people vs. places
- Techniques for social sustainability
- Social costs of environmental planning—just green enough
- Social opposition to green planning—the Tea Party and beyond

Practice readings:

- United Nations 1992 and 2002. The Rio Declaration on Environment and Development and Introduction to Chapter 7 from *Agenda 21* (United Nations Conference on Environment and Development) (1992), Millennium Development Goals and Millennium Declaration (2002), in Wheeler and Beatley, 2014. **[skim]**
- United Nations. 2015. Sustainable Development Goals.
<http://www.undp.org/content/undp/en/home/mdgoverview/post-2015-development-agenda.html>
[skim]

- Republican Platform. 2016. [https://prod-cdn-static.gop.com/media/documents/DRAFT_12_FINAL\[1\]-ben_1468872234.pdf](https://prod-cdn-static.gop.com/media/documents/DRAFT_12_FINAL[1]-ben_1468872234.pdf) [skim]
- Democratic Platform. 2016. <https://www.demconvention.com/wp-content/uploads/2016/07/Democratic-Party-Platform-7.21.16-no-lines.pdf> [skim]

Other readings:

- Agyeman J., D. Schlosberg, L. Craven, and C. Matthews. 2016. Trends and Directions in Environmental Justice: From Inequity to Everyday Life, Community, and Just Sustainabilities. *Annual Review of Environment and Resources*, 41: 321 -340. [skim]
- Szibbo, N. 2016. Lessons for LEED for Neighborhood Development, Social Equity, and Affordable Housing. *Journal of the American Planning Association* 82, 1: 37-49.

WEEK 4: FUTURE SCENARIOS

Outline:

- Visions—what someone would like to occur, tend to be static blueprints
- Predictions, projections, and forecasts—what is likely, can deal with processes
- Scenarios—what is possible, good/bad vs. plausible
- Workshop-- developing a scenario

Homework: Ecological footprint of your final assignment case due

Practice reading:

- Cork, S., G. Peterson, G. Petschel-Held et al. 2005 Four scenarios. In Scenarios Working Group, *Scenarios Assessment*. <http://www.millenniumassessment.org/documents/document.332.aspx.pdf> (skim).

Other readings:

- Uno Svedin, U., T. O’Riordan, and A. Jordan. 2001. Multilevel Governance for the Sustainability Transition from *Globalism, Localism and Identity: Fresh Perspectives on the Transition to Sustainability*, in Wheeler and Beatley, 2014.
- Wackernagel, M. and W. Rees 1996. What Is an Ecological Footprint? from *Our Ecological Footprint*, in Wheeler and Beatley, 2014.
- Beatley, T. 2003, updated 2013. Planning for Sustainability in European Cities: A Review of Practice in Leading Cities, in Wheeler and Beatley, 2014.
- Raskin, P. et al. 2005. Global scenarios in historical perspective. In Scenarios Working Group, *Scenarios Assessment*. <http://www.millenniumassessment.org/documents/document.326.aspx.pdf>

SOLUTIONS: URBAN PATTERNS AND TYPES

WEEK 5: METROPOLITAN DENSIFICATION

Outline:

- Density: Measuring what at which scale?
- Compact city idea vs. alternatives: benefits and expenses
- Metropolitan densification and growth management strategies
- Retrofitting centers, housing, infrastructure, and green space

Homework: Images of costs and benefits of sprawl

Practice reading:

- Partnership for Sustainable Communities (HUD/DOT/EPA). 2013. Livability principles. <http://www.sustainablecommunities.gov/mission/livability-principles>
- Forsyth A., C. Brennan, N. Escobedo, and M. Scott. *Revitalizing Places: Improving Housing and Neighborhoods from Block to Metropolis/Revitalizando Ciudades: Mejorando Viviendas y Barrios desde la Cuadra a la Metr polis*. Cambridge, MA: Harvard Graduate School of Design. In English and

Spanish. <http://research.gsd.harvard.edu/socialhousingmexico/planning-guidelines/> [Skim at a very high level Part 1 Densifying Existing Areas and Part 3: Retrofitting Places]

Other readings:

- Ewing, R. and S. Hamidi. 2015. Compactness versus Sprawl: A Review of Recent Evidence from the United States. *Journal of Planning Literature* 30, 4: 413-432
- Crewe, K. and A. Forsyth. 2011. Compactness and Connection in Environmental Design: Insights from Ecoburbs and Ecocities for Design with Nature. *Environment and Planning B* 38, 2: 267-288.
- Chapin, T. 2012. Introduction: From Growth Controls, to Comprehensive Planning, to Smart Growth: Planning's Emerging Fourth Wave. *Journal of the American Planning Association* 78, 1: 5-15.

WEEK 6: GREEN AREAS

Outline:

- Green infrastructure, low-impact design, and ecovillages
- Space: Parks
- Tool: Environmental assessment
- Design: Conservation subdivisions
- Dilemma: Social and ecological perspectives on green space

GUEST: Mitch Silver

Practice reading:

- NC State University. No Date. Conservation Subdivision Handbook. North Carolina: North Carolina Cooperative Extension Service <http://content.ces.ncsu.edu/conservation-subdivision-handbook>
- Forsyth A., C. Brennan, N. Escobedo, and M. Scott. *Revitalizing Places: Improving Housing and Neighborhoods from Block to Metropolis/Revitalizando Ciudades: Mejorando Viviendas y Barrios desde la Cuadra a la Metrópolis*. Cambridge, MA: Harvard Graduate School of Design. In English and Spanish. <http://research.gsd.harvard.edu/socialhousingmexico/planning-guidelines/> [Skim Part 2.2 Sustainable Design for New Developments]

Other readings:

- Carter, T. 2009. Developing conservation subdivisions: Ecological constraints, regulatory barriers, and market incentives. *Landscape and Urban Planning* 92: 117-124.
<http://www.tetonwyo.org/compplan/LDRUpdate/RuralAreas/Additional%20Resources/Carter%20009.pdf>

WEEK 7: NEW TOWNS AND NEW NEIGHBORHOODS

Outline:

- The garden city tradition
- Range of planning: new towns, master planned developments, well-serviced growth
- Pros and cons of new development
- Are new towns and new neighborhoods sustainable?
Discuss homework on changes in green policies and programs

Practice readings:

- Wheeler and Beatley. 2014. Cases.
 - Urban sustainability at the neighborhood or district scale
 - Hammarby Sjöstad, Stockholm, Sweden
 - Kronsberg Ecological District, Hannover, Germany
 - Greenwich Millennium Village, London
 - Nieuwland (Solar Suburb), Amersfoort, Netherlands
 - Village Homes, Davis, California
 - U.C. Davis West Village, Davis, California
- Urban sustainability at the city and regional scale

- Auroville, India
- Masdar, United Arab Emirates
- Songdo, South Korea
- Singapore

SOLUTIONS: HOT TOPICS

WEEK 8: MOBILITY AND ACCESS

Outline:

- Basic concepts
- Transportation & environment
- Motorized vs. non-motorized—urban form etc.
- Complete streets and beyond
- Debate: Costs and benefits of driverless cars
- Vote on readings for week 11

Other readings:

- Pucher, J. and R. Buehler. 2008. Cycling for Everyone: Lessons from Europe from *Transportation Research Record*, in Wheeler and Beatley, 2014.
- Gehl, J. 1980. Outdoor Space and Outdoor Activities from *Life Between Buildings*, in Wheeler and Beatley, 2014.
- Litman, T. and D. Burwell. 2016. Autonomous Vehicle implementation Predictions. <http://www.vtpi.org/avip.pdf>. (skim)
- Zavestosky, S. and J. Argyman. 2015. Complete streets: What's missing? In Zavestosky, S. and J. Argyman eds. *Incomplete Streets*. New York: Routledge.

WEEK 9: HEALTHY CITIES

Outline:

- Environmental conditions and health: exposures, connections, supports
- Health, environment, and inequality
- Key topics
- Health assessment tools and beyond

Case: Health impact assessments

Exercise: Review draft papers in class

Other readings:

- Sloan, D.C. 2006. From congestion to sprawl: Planning and health in historical context. *Journal of the American Planning Association* 72, 1: 10-18.
- *Wolch, J., J. Byrne, 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.
- *Morello-Frosch, R., et al. 2011. Understanding the cumulative impacts of inequalities in environmental health: implications for policy. *Health Affairs* 30, 5:879-887.

WEEK 10: RESILIENCY

Outline:

- Disturbance, disaster, and resiliency
- Urban Climate change: from local to global
- Resiliency and inequality
- Planning analysis for resiliency

- Responses to climate change: from mitigation to disaster response
- Homework discussion:** Local implications of climate change skepticism

Practice reading:

- Rotterdam Climate Initiative. 2010. *Rotterdam Climate City*.
<http://www.rotterdamclimateinitiative.nl/documents/ENG-mitigation-annual-plan2010.pdf>
- NOAA NOAA and EPA. 2011. Achieving Hazard-Resilient Coastal and Waterfront Smart Growth.
<http://coastalsmartgrowth.noaa.gov/resilience.html> (has link to download report)

Other readings (we will provide direction about what to emphasize later in the semester):

- Pacala, S. and R. Socolow. 2004. Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies from *Science magazine*, in Wheeler and Beatley, 2014.
- Godschalk, David R. 2003. Urban Hazard Mitigation: Creating Resilient Cities. *Natural Hazards Review* 4, 3: 136-143. http://www.tc.umn.edu/~blume013/Godschalk_urb_haz_mit2003.pdf
- Cross, A. 2001. Megacities and Small Towns: Different Perspectives on Hazard Vulnerability. *Environmental Hazards* 3: 63-80.
- Hope, K.R. Sr. 2011. Climate Change in the Context of Urban Development in Africa from *Climate Change and Sustainable Urban Development in Africa and Asia*, in Wheeler and Beatley, 2014.
- Intergovernmental Panel on Climate Change (IPCC). 2012. Summary for Policymakers. In *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*, edited by C. B. Field, V. Barros, T. F. Stocker, Q. Dahe, et al., 1–19. Cambridge, UK: Cambridge University Press.

REFLECTIONS

WEEK 11: STUDENT CHOICE

Outline:

- Students will select the readings during semester.

WEEK 12: PRESENTATIONS

Outline:

- Students will present their cases/projects for discussion/

WEEK 13: MEASURES

Outline:

- Types of sustainability measurement
- Creating Indicators
- Example for active transport
- Sustainability indicators exercise (in class)

Practice readings:

- STAR Communities. 2015. STAR Community Rating system. Version 1.2.
<http://www.starcommunities.org/the-rating-system/download/> (**skim**)
- Godschalk, D. and D. Rouse. 2015. Sustaining Places: Best Practices for Comprehensive Plans PAS Report 578. <http://www.fairfaxva.gov/home/showdocument?id=7220> (**Skim**)

Other readings:

- Maclaren, V. 1996. Urban Sustainability Reporting from *Journal of the American Planning Association*, in Wheeler and Beatley, 2014.
- * Gahin, R., Veleva, V. and Hart, M. 2003. Do Indicators help create sustainable communities? *Local Environment* 8, 6: 661-666.

6. ASSIGNMENTS

Everything should be handed in online on Canvas.

PART 1: SHORT HOMEWORK ASSIGNMENTS 10%

In some classes you will be asked to do short homework assignments e.g. finding an image to demonstrate a theme, investigating a statistic, reading and preparing to discuss a case. These will be very roughly graded—HP, P, LP. Please compress images. I imagine them taking an hour or two—they are just intended to get you started in terms of your thinking.

Homeworks will include **at least** the following due **at the start of class on the Tuesday** (though we may not discuss until Thursday): They are all due on Canvas, some have additional submissions.

Week 4: Ecological footprint of your final assignment case (in paper as well as Canvas). Use an ecological footprint calculator—we will look at some in class-- to calculate the footprint of a typical person or range of persons in your cases. Also do your own footprint. Submit your assumptions and final footprint.

Week 5: Images of costs and benefits of sprawl (PPT). Find 2 images—one showing the costs and the other the benefits of sprawl. They can be photos, charts, graphs. Use PowerPoint. Put your name on every slide and also annotate briefly whether it is a cost or a benefit and why.

Week 8: Identify likely changes in green policies and programs due to recent elections won by those opposing business as usual (U.S. president, Brexit, India, etc.). Write a paragraph. Provide links and/or attach a key article to the PDF submission. **Note, people's positions can be complex with pros and cons.**

Week 10: Local implications of climate change skepticism. Find a case where climate change (or similar) skepticism is changing local planning (e.g. protests, ballot initiatives, discussions in public meetings). Write a paragraph. Provide links and/or attach a key article to the PDF submission.

PART 2: RESPONSE PAPERS 50%

On five or six or seven weeks you will hand in a short paper on that week's readings. I will only count the grades for five; that is I will drop the worst grade(s) if you do more.

The papers are *due at the beginning of the first class of the week, uploaded* to the course site and I will generally hand them back graded and with comments the following week. Taking out the first and presentation week of class there are 11 weeks left in the semester with readings meaning that you will have several weeks when you need to do readings but do not need to hand in a paper on them. You may select which weeks you hand in papers for, but you need to hand them all in and on time. Occasional illnesses (that incapacitate for up to two weeks), religious holidays, family events, etc. should be dealt with using the flexibility inherent in the assignments. **Please assume you will be sick some time and don't wait until the end to hand papers in. Late papers are not accepted.**

I have set a one page limit—this means it will fit on a page in 12 point font Times Roman, 11 point Arial, 11 point Calibri, or similar. Do not use smaller fonts.

The papers for each week will:

- (1) Outline the basic message of **each** reading (e.g. **each chapter**). This is not a summary of the entire chapter--I want to know what the main points of the reading are. (50% of grade).
- (2) Give a more personal reflection on *one* of the questions below although the response **should** refer to the readings. It is perfectly fine to disagree with the reading—just give reasons. (50% of grade)

(3) Stick within the **page limit** and be clearly marked with your **name**, the **question to be answered** (If there is no name you will not get a grade; if you are over the word limit or have missing questions, your grade will drop up to 10%).

In answering the questions below I will be grading papers in terms of how well you have (a) understood and (b) engaged with the literature in terms of points 1 through 3 above, and on (c) how well you have argued your positions (e.g. giving evidence etc.) as described later in the rubric. I will not grade on how closely you have mirrored my opinions.

1: Definitions and histories (no paper)

2: Environmental concerns (Feb 2)

- How natural are urban areas?
- Where might urban planners with various specialties (transport, environment, housing, etc) most effectively intervene to improve conditions for the natural environment?

3: Social issues (Feb 9)

- What can urban planners do to promote social sustainability?
- The UN has created a number of rounds of sustainable development goals with a social focus. How useful is this? Why?

4: Future scenarios (Feb 16)

- How would planning change if it more seriously considered alternative plausible futures? Would it change much?
- Briefly outline two very different but plausible global urban futures.

5: Metropolitan densification (Feb 23)

- How important is adopting a compact city approach for urban sustainability?
- How relevant is smart growth for places beyond the U.S.?
- What are the key roles of the private sector to achieve smart/sustainable growth? Discuss one or two points.

6: Retrofitting places (Mar 2)

- What are the key barriers to retrofitting existing areas for sustainability?
- Some places such as exurban developments of McMansions seem very difficult to retrofit. Is that really the case? What can be done with McMansions and other difficult styles of development?

7: New towns and new neighborhoods (Mar 9)

- What does the experience of planning for new towns and new neighborhoods contribute to sustainable planning and design?
- Look at the cases of relatively substantial new towns and new neighborhoods in Wheeler and Beatley part 6 (Hammarby Sjostad, Kronsberg Ecological District, Greenwich Millennium Village, Niewland, Village Homes, Davis West village, Weilai City, Shenzhen OCT, Gaviotas, Auroville, Masdar, Songdo, and Singapore (really a cluster of new towns and villages). Pick one or two and reflect on what their lessons are and how transferrable they are. (FYI, a couple of these at least have not been very successful).

8: Mobility and access (Mar 23)

- Is finding alternatives to the car a key part of sustainable planning and design or might technologies (including driverless and electric cars) mitigate their problems?
- What strategies can best promote walking and cycling? How many are within the domain of urban planning?

9: Healthy cities (Mar 30)

- How might strategies for creating healthy cities and sustainable cities differ?
- Is planning for health just another name for good urban planning, that is does it add anything to the planning toolkit? Explain your answer.

10: Resiliency (Apr 6)

- Climate change has captured a lot of public attention but can be controversial in some parts of the United States. What arguments can be made for climate sensitive planning—from adaptation to resilience—without specifically referring to climate change?
- CO2 emission reduction can be achieved largely without planning interventions but rather through technological changes, changes in agricultural practices, and the like. Discuss.
- Often in reality, large cities tend to get priority in terms of disaster prevention/response resource provision, compared to small cities and rural areas. What can be done to resolve this issue? Or if you do not think this is a problem, how do you justify that position?

11: Student choice (Apr 13)

- Compare and contrast the main arguments in the readings selected.

12: Presentations (no paper)

13: Measures (Apr 25)

- What are the pros and cons of expert-led vs. participatory sustainability indicators?
- Can urban sustainability be measured?

CASE/PROJECT AND INFORMAL PRESENTATION 40 %

There are two tracks for the final assignment—a case study or a practical project. Both need to be presented to the class.

Case Study

Write a case study of a place, project, policy, plan, or program that has tried to make districts and/or cities and/or regions more sustainable—describing it and analyzing it in relation to some theme from the class. The case should have been implemented, not just a proposal. It should be bigger than a building, preferably substantially so. There will need to be enough materials available to enable a case to be written—such as policy documents, archives, oral histories, maps, and statistics. It would be handy to visit it but not essential, and I do hope at least some students pick cases outside of the United States. The paper should have the following characteristics:

- Single spaced it should be 4,000-6,000 words (put the word count on the cover).
- It should have a significant number of illustrations—photos, charts, graphs, and similar. This is why I have not provided a page limit.
- In addition to a reference list there should be a bibliographic note at the end describing key sources including web documents, original policy documents, and visual materials. This note needs to say where you found materials and assess their strengths.

- You must cite and seriously engage with at least five class readings in your paper; you can, of course, engage with more.
- You can re-use parts of the shorter writing assignments in this paper but the more of that you do, the more polished I'll expect the paper to be.

In addition in the second last week, students should share their findings with a brief, informal, PowerPoint presentation of 5-10 slides—a map if relevant, a slide of basic questions, another of basic findings, and two to three of key illustrations of these points. This is not going to be a very formal presentation but rather a quick start for a conversation to share what will hopefully be interesting findings.

I've written this assignment with great flexibility because I'd like people to find interesting cases. If students want to change the assignment I am happy to do so but agreement needs to be made in writing. Better cases will:

- Conform to the requirements above: word limit (state word count), illustrations, reference list, bibliographic note, engage with five or more readings.
- Make a clear argument for the importance of the particular place, policy, program, or project (though it may be important because it is very typical). **This should have an evaluative component—how well does it perform?**
- Include both general information about the case and a clear theme related to the themes of the course (sustainability, environmental planning).
- Be focused enough—this will be particularly tricky with a place that may be the result of a number of policies, programs, and plans.
- Use carefully selected and composed matrices, charts, statistical tables, and images. These should have clear captions and cite their sources.
- Draw on a variety of primary and secondary sources about the cases—e.g. policy documents, social media, statistics, oral histories, media, formal histories, maps, images etc. Not all will be available and such availability or lack of it should be discussed in the bibliographic note.
- Provide thoughtful commentaries clearly linked to class subject matter and readings (i.e. citing class readings).
- Cite other readings related to the theme or case showing that the student has looked, for example, at sources cited in class readings.
- Use sources in a sophisticated way e.g. demonstrating understanding of their strengths and weaknesses related to methods and data.
- Overall, provide a clear argument (with evidence for claims including illustrations and narrative, countering reasonable objections), showing a richness and depth of understanding both of the case itself and the theme being explored.

Ideas for cases can be found in Part 6 of the Wheeler and Beatley text (however remember the scale needs to be larger than a single building).

Project Alternative

An alternative to the case is to do a practical project for a client. The draft and final versions should conform closely to the requirements for the case above with any departures agreed upon in writing with Ann. This will allow you to receive project-based course credit for the MUP.

Deadlines

- Feb 9: Project/case proposal—a one-page outline of approach/idea due at the start of class.
- March 31: Draft paper due for workshop in class. **Upload on the course site before class but ALSO bring 2 paper copies to class.**

- April 18/20: Presentations in class.
- May 5: Final case study papers/projects due at 5pm.

The final paper will receive the grade but if you have a late proposal, workshop paper, and/or informal presentation it will reduce the final grade up to 10%. For timeliness see earlier section of syllabus.

CRUCIAL ADVICE ON GRADES AND PRODUCING QUALITY WORK

GRADING NUMBERS

The GSD uses an unusual grading approach: The grade of Pass is the standard mark for recognizing satisfactory work. Distinction and High Pass are reserved for work of clearly exceptional merit. Low Pass indicates a performance that, although deficient in some respects, meets minimal course standards (<http://www.gsd.harvard.edu/#/gsd-resources/registrar/grading/grades.html>). To make it easier for students to track their progress I will assign numerical grades that can then be converted to the GSD system.

- High pass 90%+
- Pass 75%+
- Low pass 65%+

Remember you drop your worst grades.

GRADING CRITERIA

I typically grade in two ways. First I check you did all parts of the assignment using criteria taken directly from the assignment descriptions—if **it's a bullet, it will be an item I look for though I may combine some bullets in actual grading (some are really steps along the way to a larger product)**.

Second I assess how well you completed the work using the matrix below.

	Very good (High Pass)	Good (Pass)	OK (Low Pass)	Needs Work (Not passing)
Overall	Hits on almost all of basic content (what this is depends on the assignment) + Memorable	Hits on almost all of the basic content + Writing Interesting to read	Hits on some basic content	Hits on a small amount of basic content (one item) and/or Numerous digressions/errors
Argument	Argument is coherent, well organized, interesting, well qualified, with adequate evidence, and memorable—engages the reader with a lively mind	Argument is coherent, well organized, interesting, well qualified, with adequate evidence	Argument is fairly coherent and well organized with some evidence and qualifications	Some confusion/vagueness/parts that don't make sense/missed the point
Sources	Sources are cited (using author/date page); used critically*	Sources are cited; some are used critically	Some sources are missing	Sources are not cited
Writing	Writing/graphics largely free from errors	Perhaps some writing errors, but none critical for comprehension	More than a few writing errors that may impede comprehension	Many careless writing errors that may impede comprehension

	Very good (High Pass)	Good (Pass)	OK (Low Pass)	Needs Work (Not passing)
Graphics and layout	Easy to read fonts. Graphics that are legible and convey information well. Layout that is striking and imaginative	Easy to read fonts. Graphics that are legible and convey information well.	Adequate font size or shape. Adequate graphics though there may be weaknesses in content and/or execution	Tiny and hard to read fonts; graphics that are either difficult to understand or do not convey useful information

*Critical use of sources reflects consciousness of the sources of evidence and methods used in the source and whether they can answer a question appropriately.

This link is also helpful in providing a more global view of grading:
<http://isites.harvard.edu/fs/html/icb.topic58474/GradingPapers.html>

FONTS AND LAYOUT

I have set page limits not word limits for this class. I don't care about the line spacing but text should typically be no smaller than Arial 10pt or Times Roman 11pt. You might use something smaller for a label. You need to provide adequate margins to allow easy comprehension and to provide space for comments in grading. Do not put too many characters on a line. Typically comprehension is easier with ragged layouts—that is don't line up both sides of text but let the spacing between characters fall more naturally. Also, remember that faculty are typically older than you and our eyesight is often worse—it's a real strain to read tiny fonts and your materials will be treated much less sympathetically if they are hard to read.

WRITING INSTRUCTIONS

I advise students to do one of the following activities before handing in any project: (a) put the piece aside for at least a few hours and then go back and edit it for clarity, or (b) get a sympathetic friend to edit it for clarity, or (c) read it out loud and change any sentences that don't make sense. I do this in my own work as a consideration to those who are reading it (and a few things still slip through)!

Where you cite sources you should use the author-date-page or parenthetical reference/reference list style of citation generally used in the social sciences. For example in the text you list only the author, date and page e.g. (Goldsmith 1994, 3). You then list the full details for the source alphabetically by author's name in a reference list at the end. If you cite a web site in a short paper, I need the full URL.

All quotes quoted directly should include the page number in the citation e.g. (Goldsmith 1994, 3). Also cite with a page number all ideas not quoted directly but coming from a specific part of a document. Only when you refer very generally to an entire work should you merely cite the author and date, for example, (Marris 1987).

For more information see a style manual such as Kate Turabian's (2007) *A Manual for Writers of Research Papers, Theses, and Dissertations* (Chicago: University of Chicago Press) although you should note that she shows two kinds of citation (footnote and bibliography, and parenthetical reference/reference list) and it is the second of these that I prefer.

I am very concerned that findings are based explicitly on evidence. You will receive a low grade if you fail to cite sources or if they are not listed systematically in the reference list. More about evidence is explained in Booth et al.'s (2008) *Craft of Research* (Chicago: University of Chicago Press).

ACADEMIC HONESTY

Please be familiar with Harvard's web site on plagiarism:

<http://isites.harvard.edu/icb/icb.do?keyword=k70847&pageid=icb.page342054>. It is inappropriate to use any form of plagiarism. The GSD's own library has a useful web site as well:

<http://guides.library.harvard.edu/gsd/write>

In addition if you wish to use work that overlaps with another class you can do so only if you have **written** permission from me. This will reflect an **in-person discussion** where we figure out how your work can reflect an equivalent effort to other students doing the same assignment.

If you need to use a copy editor to improve your writing, that is fine. However, they should be copy editing not writing the paper. Please let me know if you are using such a service. I won't grade you down for it but it will help my understanding of your work.

7. ADDITIONAL READINGS

1: Definitions and histories

Chapin, T.S. 2012. From growth controls, to comprehensive planning, to smart growth: planning's emerging fourth wave. *Journal of the American Planning Association* 78, 1: 5-15.

Gunder, M. 2006. Sustainability: Planning's saving grace or road to perdition? *Journal of Planning Education and Research* 26, 208-221.

Howard, E. 1898. The Three Magnets and The Town-Country Magnet from *Garden Cities of To-morrow*, in Wheeler and Beatley, 2014.

Leopold, A. 1949. The Land Ethic from *A Sand County Almanac*, in Wheeler and Beatley, 2014.

Rydin, Y. 2003. Discourse and environmental planning. In *Conflict, Consensus and Rationality in Environmental Planning: An Institutional Discourse Approach*. Oxford: Oxford University Press.

2: Environmental concerns

Alberti M. 1999. Urban patterns and environmental performance: what do we know? *Journal of Planning Education and Research* 19: 151-163.

Brown, L. 2011. Harnessing Wind, Solar, and Geothermal Energy from *World on the Edge* in Wheeler and Beatley, 2014.

Forman, T. 2014. *Urban Ecology: Science of Cities*. Cambridge, UK: Cambridge University Press. Chapters 2 and 3: Spatial Patterns and Mosaics and Flows, movement, change (pages 31-90)

Girardet, H. 1999. The Metabolism of Cities from *Creating Sustainable Cities* in Wheeler and Beatley, 2014.

Gleick, P.H. 2000. The Changing Water Paradigm: A Look at Twenty-First Century Water Resources Development from *Water International* in Wheeler and Beatley, 2014.

Lyle, J. 1994. Waste as a Resource from *Regenerative Design for Sustainable Development*, in Wheeler and Beatley, 2014.

Randolph, J. 2012. *Environmental Land Use Planning and Management*. Second Edition. Washington DC: Island Press. . C

Wu, J. 2008. Making the case for landscape ecology: an effective approach to urban sustainability. *Landscape Journal* 27: 41-50.

3: Social issues

Campbell, S. 1996. Green Cities, Growing Cities, Just Cities? *Journal of the American Planning Association* 62, 3: 296-312.

Community Planning. 2015. Methods. http://www.communityplanning.net/methods/methods_a-z.php

Cranz, G. 1982. *The Politics of Park Design*. Cambridge, MA: MIT Press.

Forsyth, A. and L. Musacchio. 2005. *Designing Small Parks: A Manual for Addressing Social and Ecological Concerns*. New York: Wiley.

Jacobs, J. 1961. Orthodox Planning and The North End from *The Death and Life of Great American Cities*, in Wheeler and Beatley, 2014.

Kaperson, R. And K. Dow. 2005. Vulnerable people and places. In Scenarios Working Group, *Scenarios Assessment*. <http://www.millenniumassessment.org/documents/document.275.aspx.pdf>

Participation Compass. 2015. <http://participationcompass.org/>

Perlman, J. with M. O'Meara Sheehan. 2007. Fighting Poverty and Environmental Injustice in Cities from *State of the World 2007: Our Urban Future*. In Wheeler and Beatley, 2014.

Pillemer, K, N. Wells, L. Wagenent, R. Meador, and J. Parise. 2011. Environmental sustainability and an aging society: a research agenda. *Journal of Aging and Health* 23, 3, 433-453.

Randolph, J. 2012. Environmental Land Use Planning and Management. Second Edition. Washington DC: Island Press. Participation (**pages 101-104**).

U.N Habitat. 2010. *State of the World's Cities 2010/2011: Cities for All: Bridging the Urban Divide*. Nairobi: UN. Habitat.

U.N. Department of Economic and Social Affairs. 2010. *World Urbanization Prospects: The 2009 Revisions, Highlights*. New York: United Nations.

Vallance, S., Perkins, H., and Dixon, J. 2011. What is Social Sustainability? A clarification of concepts *Geoforum* 42, 3: 342-348. http://users.metu.edu.tr/ioguz/Vallance_2011.pdf

4: Future scenarios

Daly, H. 1973. The Steady-State Economy from *Toward a Steady-State Economy*, in Wheeler and Beatley, 2014.

Forsyth, A. 2014. Global suburbs and the transition century: physical suburbs in the long term. *Urban Design International* 19, 4: 259-273.

Fox, s. 2012. Urbanization as a Global Historic Process: Theory & Evidence from Sub-Saharan Africa. *Population & Development Review* 38, 2: 285-310.

HIA Connect. 2007. Health Impact Assessment: A Practical Guide. http://hiaconnect.edu.au/wp-content/uploads/2012/05/Health_Impact_Assessment_A_Practical_Guide.pdf.

Myers, D., & Kitsuse, A. 2000. Constructing the future in planning: A survey of theories and tools. *Journal of Planning Education and Research* 19: 221–231.

Newman, P. T. Beatley, and H. Boyer. 2009. *Resilient Cities: Responding to Peak Oil and Climate Change*. Washington, DC: Island Press.

Satterthwaite, D. 2007. The transition to a predominantly urban world and its underpinnings. IIED Human Settlements Discussion Paper. <http://www.iied.org/pubs/display.php?o=10550IIED>

Shell. 2015. *Shell Scenarios*. <http://www.shell.com/energy-and-innovation/the-energy-future/shell-scenarios.html> (look at the new lens scenarios).

Smil V. 2000. Perils of long-range energy forecasting: reflections on looking far ahead. *Technological Forecasting and Social Change* 65, 3: 251-264.

Tellus Institute, Boston. 2010. *Global Scenarios for the Century Ahead: Searching for Sustainability* http://www.gtinitiative.org/documents/IssuePerspectives/Global_Scenarios_for_the_Century_Ahead%5B1%5D.pdf

Wack, P. 1985. Scenarios: uncharted waters ahead. *Harvard Business Review* 63, 5), 73–89.

5: Metropolitan densification

Angel, S. 2012. Planet of Cities. Chapter 1. Cambridge, MA: Lincoln Institute for Land Policy. https://www.lincolnst.edu/pubs/dl/2094_1466_POC_Web_Chapter.pdf

Calthorpe, P. 1993. The Next American Metropolis from *The Next American Metropolis: Ecology, Community, and the American Dream*, in Wheeler and Beatley, 2014.

Clark, T. 2013. Metropolitan density, energy efficiency and carbon emissions: Multi-attribute tradeoffs and their policy implications. *Energy Policy* 53: 413-428.

Duany, A and J. Speck. 2010. *The Smart Growth Manual*. New York: McGraw Hill.

- Echenique M. H., Hargreaves A.H., Michel G. and Namdeo A. 2012. Does urban form really matter? *Journal of American Planning Association*, 78, 2: , 121-137:
<http://www.tandfonline.com/doi/pdf/10.1080/01944363.2012.666731>
- Ewing, R., K. Bartholomew, and .C. Nelson. 2011. Compactness vs. Sprawl from *Companion to Urban Design*, in Wheeler and Beatley, 2014.
- Ewing, R. 1997. Is Los Angeles-Style Sprawl Desirable? *Journal of American Planning Association* 63, 1: 107-126.
- Gordon, P and H. W. Richardson. 1997. Are Compact Cities a Desirable Planning Goal? *Journal of American Planning Association* 63, 1: 95-106.
- Forsyth, A. 2012. Defining Suburbs. *Journal of Planning Literature* 27, 3: 270-281.
- Randolph, J. 2012. *Environmental Land Use Planning and Management*. Second Edition. Washington DC: Island Press. Chapters 3 and 4, land use and collaboration (skim **pages 54-104**); Part of chapter 17 on smart growth (**pages 601-605**).
- Wheeler, S. 2002. Infill Development from *Smart Infill*, in Wheeler and Beatley, 2014.
- Wu, K.I. 2013. Sustainable Urban Development in China, in Wheeler and Beatley, 2014.

6: Green areas

- Barton, Jo and Jules Pretty. 2010. What is the Best Dose of Nature and Green Exercise for Improving Mental Health? A Multi-Study Analysis. *Environmental Science and Technology* 44, 10: 3947–55
- City of Vancouver. 2011? 2014? *Greenest City 2020 Action Plan*. <http://vancouver.ca/files/cov/greenest-city-2020-action-plan-2015-2020.pdf> and <http://vancouver.ca/files/cov/greenest-city-action-plan-implementation-update-2014-2015.pdf>
- Forsyth, A. and L. Musacchio. 2005. Designing Small Parks. Chapters 2, 3, 4, and 11: Connections and Edges, Appearance..., Naturalness, and Management. New York: Wiley.
- Girling, C. and R. Kellett. 2005. *Skinny Streets and Green Neighborhoods*. Washington DC: Island Press.
- Hostetler, M., W. Allen, C. Meurk. 2011. Conserving urban biodiversity? Creating green infrastructure is only the first step. *Landscape and Urban Planning*.
https://www.researchgate.net/profile/Mark_Hostetler/publication/229123989_Conserving_urban_biodiversity_Creating_green_infrastructure_is_only_the_first_step/links/02e7e52b4a0a5d1f4a000000.pdf
- Kaplan, R. and S. Kaplan. 1989. *The Experience of Nature: A Psychological Perspective*. Cambridge, UK: Cambridge University Press.
- Lee, A.C.K. and R. Maheswaran. 2010. The Health Benefits of Urban Green Space: A Review of the Evidence. *Journal of Public Health* 33, 2: 212–222.
- Low Impact Development (LID) Urban Design Tools Website. 2015. <http://www.lid-stormwater.net/>

7: New towns and new neighborhoods

- Biddulph, M. 2000. Villages Don't Make a City. *Journal of Urban Design* 5, 1: 65-82.
- Forsyth, A. 2011. Planned Communities and New Towns. In *Urban Design: Roots, Influences, and Trends: The Routledge Companion to Urban Design*. T. Banerjee and A. Loukaitou-Sideris eds. New York: Routledge.
- Forsyth, A. and K. Crewe. 2009. A Typology of Comprehensive Designed Communities Since the Second World War. *Landscape Journal* 28, 1: 56-78.
- Forsyth, A. 2002. Planning Lessons from Three US New Towns of the 1960s and 1970s: Irvine, Columbia, and The Woodlands. *Journal of the American Planning Association* 68, 4: 387-415.
- Randolph, J. 2012. *Environmental Land Use Planning and Management*. Second Edition. Washington DC: Island Press. Chapter 16 on Design (**pages 564-597, skim the cases**).

8: Mobility and access

- Cervero, R. 1998. Transit and the Metropolis: Finding Harmony from *The Transit Metropolis: A Global Inquiry*, in Wheeler and Beatley, 2014.

- Forsyth, A. 2015. What is a Walkable Place? The Walkability Debate in Urban Design. *Urban Design International* 20, 4: 274-292.
- Forsyth, A., Krizek, K. 2010. Promoting walking and bicycling: assessing the evidence to assist planners. *Built Environment* 36, 4: 429-446. <http://kevinjkrizek.org/wp-content/uploads/2012/04/Bltenv.pdf>
- Forsyth, A., K. Krizek, D. Rodriguez. 2009. Non-motorized Travel Research and Contemporary Planning Initiatives. *Progress in Planning* 71: 170-184.
- Krizek, K., S. Handy, and A. Forsyth. 2009. Explaining Changes in Walking and Bicycling Behavior: Challenges for Transportation Research. *Environment and Planning B* 36: 725-740.
- Newman, P. and J. Kenworthy. 1999. Traffic Calming from *Sustainability and Cities: Overcoming Automobile Dependence*, in Wheeler and Beatley, 2014.
- Jun, M.-J. 2008. Are Portland's Smart Growth Policies Related to Reduced Automobile Dependence? *Journal of Planning Education and Research* 28, 1: 100-107. <http://www.china-up.com:8080/international/case/case/1563.pdf>

9: Healthy cities

- American Planning Association and National Association of County and City Health Officials. 2012. *Planning for Healthy Places with Health Impact Assessments*. <http://advance.captus.com/planning/hia2/home.aspx>.
- APA Planning and Community Health Research Center: <https://www.planning.org/nationalcenters/health/>
- CDC. 1999. Achievements in Public Health, 1900-1999: Changes in the Public Health System. *Morbidity and Mortality Weekly Report* http://www.mchd.com/data_reports/ph_top10.htm.
- CDC. 2015. Healthy Community Design Topics. <http://www.cdc.gov/healthyplaces/default.htm>
- NSW Health. 2009. Healthy Urban Development Checklist. <http://www.health.nsw.gov.au/urbanhealth/Publications/healthy-urban-dev-check.pdf><http://www.health.nsw.gov.au/urbanhealth/Publications/healthy-urban-dev-check.pdf%20>
- Cunningham R., Signal L, and Bowers S. 2010. *Evaluating Health Impact Assessments in New Zealand*. A report for the Ministry of health: <https://www.health.govt.nz/system/files/documents/publications/evaluating-hias.pdf>
- Forsyth, A., Salomon, E., and Smead, L. 2017. *Creating Healthy Neighborhoods*. Chicago: APA Planners Press.
- Forsyth, A. Schively Slotterback, C. and Krizek, K. 2010. Health impact assessment for planners: what tools are useful? *Journal of Planning Literature* 24, 3: 231-245.
- Hancock T. 2000. Healthy Communities Must Also Be Sustainable Communities. *Public Health Reports*. 115, 2-3: 151-156. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1308704/pdf/pubhealthrep00022-0049.pdf>
- Health and Places Initiative. 2015. Research Briefs: <http://research.gsd.harvard.edu/hapi/research-briefs/> **(skim)**
- Kemm, J. 2013. *Health Impact Assessment: Past Achievement, Current Understanding, and Future Progress*. Oxford: Oxford University Press.
- Krizek K., Forsyth A., Shively Slotterback C. 2009. Is There a Role for Evidence-Based Practice in Urban Planning and Policy? *Journal of Planning Theory and Practice* 10, 4: 455-474.
- National Crime Prevention Council (Singapore). 2003. Crime Prevention through Environmental Design <http://www.ncpc.gov.sg/pdf/CPTED%20Guidebook.pdf>
- NSW Health. 2009. Healthy Urban Development Checklist. <http://www.health.nsw.gov.au/urbanhealth/Publications/healthy-urban-dev-check.pdf><http://www.health.nsw.gov.au/urbanhealth/Publications/healthy-urban-dev-check.pdf%20>**(skim)**

- Ricklin, A., et al. 2012. Healthy Planning. Chicago: American Planning Association.
<https://www.planning.org/research/publichealth/pdf/evaluationreport.pdf>
- U.S. Environmental Protection Agency. 2013. A Review of Health Impact Assessments in the U.S.
<http://www2.epa.gov/sites/production/files/2015-03/documents/review-hia.pdf>
- Urban Land Institute. 2015. *Building Healthy Places Toolkit*. Washington DC: ULI.
- Vlahov, D., Bouford, J.I., Pearson, C., Norris, L. eds. 2010. *Urban Health: Global Perspectives*. San Francisco: Jossey-Bass.

10: Resiliency

- Klinenberg, E. 2013 Adaptation. *The New Yorker*.
<http://www.newyorker.com/magazine/2013/01/07/adaptation-2>
- McKibbin, B. 1989. The End of Nature from *The End of Nature*, in Wheeler and Beatley, 2014.
- Meerow, S., J. P. Newell, and M. Stults. Defining Urban Resilience: A Review. *Landscape and Urban Planning*. 147:38-49.
- Newman, P. T. Beatley, and H. Boyer. 2009. *Resilient Cities: Responding to Peak Oil and Climate Change*. Washington, DC: Island Press.
- Pickett, S. T. A., M. L. Cadenasso, and J. M. Grove. 2004. Resilient Cities: Meaning, Models, and Metaphor for Integrating the Ecological, Socio-economic, and Planning Realms. *Landscape and Urban Planning*. 69: 369-384.
- The World Bank. 2012. *Urban Risk Assessment – An Approach for Understanding Climate & Disaster Risk in Cities*. Washington, DC: The World Bank.
<http://elibrary.worldbank.org/content/book/9780821389621>
- World Bank 2010. Representative GHG Baselines for Cities and their Respective Countries.
http://siteresources.worldbank.org/INTUWM/Resources/GHG_Index_Mar_9_2011.pdf

11: Student choice

NA

12: Presentations

NA

13: Measures

- Harvard University Sustainability. 2015. Harvard Sustainability Plan.
<http://green.harvard.edu/commitment/our-plan>
- Randolph, J. 2012. Environmental Land Use Planning and Management. Second Edition. Washington DC: Island Press. Part of chapter 14 on methods and metrics (**pages 487-498, 505-526**).