

Applied Ecology and Environmental Policy in Urbanizing Communities
Autumn 2009
(syllabus subject to revision and updating)

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Meeting time and location: Tuesday 1:30-4:18; **259 Knowlton Hall**

Credits Hours: 5

Course Description: This course engages students in the integration of disciplinary perspectives in studying and finding solutions to problems of rapidly urbanizing areas. Urbanization has significant impacts on environmental quality, on a range of amenities, and on the financial and operational ability of local governments to provide services and maintain environmental quality. This set of issues also engenders significant political friction between residential real estate development interests and a variety of citizen organizations. The point of departure for this course is that crafting effective solutions requires a broad understanding of multiple factors.

The course combines readings, lectures, and discussions led by faculty, students, as well as by stakeholders and government officials from Ohio communities currently grappling with these issues. Topics will include the effects of urbanizing systems on ecosystem services and function, amenity values and values, farmland preservation, water quality protection, organization of local service provision (with an emphasis on resource and environmental services), and managing conflict and cooperative solutions.

Communities attempting to provide solutions and find compromises in managing rapidly urbanizing systems face significant barriers of time and resources in gaining access to the current state of knowledge about managing growth. The purpose of this course is for students from multiple disciplines to work together and provide information to stakeholders that facilitate these solutions and compromises. Students will work with stakeholder groups and local government officials to ascertain and prioritize the information needs – and the areas where groups are working off different scientific and technical assumptions – of the community. They will then work in interdisciplinary teams under faculty supervision to assemble and analyze research results and relevant experiences from other communities with similar circumstances. Results may take the form of draft codes, draft legislation, technical reports, or other outputs as are most appropriate for stakeholders.

Course objectives:

1. Facilitate meaningful dialogue among faculty and students in the natural sciences and policy that addresses: (a) how scientists can improve connections between research and policy and (b) how decision-makers can better incorporate ecological science into the decision-making process.
2. Create interdisciplinary teams to serve real-world needs of regional policy-makers and planners through service-learning and outreach efforts.

3 Accomplish the following learning outcomes: understand (a) how urban development affects environmental, ecological, and social variables, (b) the drivers of urban change and how these drivers interact to produce both positive and negative outcomes, (c) potential policy and planning strategies that can be adopted in urbanizing communities, and (d) how individuals, agencies, and organizations can work together from different perspectives.

Course evaluation: Individual students are expected to participate in weekly discussions of assigned readings and in team projects. Students also will be expected to give presentations in class. Class participation will be evaluated on attendance, familiarity with assigned readings, and contributions to the intellectual progress of the group. Grades will be assigned based on participation in class discussions, presentations, and team projects in the following percentages:

Total Points: 600

Team project (2/3 of your grade)

Alternatives proposal (due 10/9)	25
Status report (due 11/3)	25
Draft report (due 11/17)	50
Presentation (due 12/1)	100
Final report (due 12/4)	200

Participation (1/3 of your grade)

Mid-quarter evaluation by peers	50
Final evaluation by peers	75
Evaluation by instructors	75

Grading Scale:

A	93-100%	B-	79-82%	D+	66-68%
A-	89-92%	C+	76-78%	D	60-65%
B+	86-88%	C	73-75%	E	<60%
B	83-85%	C-	69-72%		

DISABLED STUDENTS: All students with disabilities who need accommodations should make arrangements with the instructor. Special needs must be discussed and arrangements made well in advance (preferably during the first week of the quarter) of when they are required. Special accommodations may be arranged through the OSU Office of Disability Services.

ACADEMIC MISCONDUCT: Submitting plagiarized work to meet academic requirements including the representation of another's works or ideas as one's own; the unacknowledged word for word use of another person's ideas; and/or the falsification, fabrication, or dishonesty in reporting research results shall be grounds for charges of academic misconduct.

Tentative Schedule

Week	Date	Topic
1	9/22	No class meeting. <u>Reading assignments due Week 2</u> 1) Primer about course project. 2) Alberti, M., J. M. Marzluff, E. Shulenberger, G. Bradley, C. Ryan, and C. Zumbrunnen. 2003. Integrating Humans into Ecology: Opportunities and Challenges for Studying Urban Ecosystems. <i>Bioscience</i> 53:1169-1179. 3) Farber, S., R. Costanza, D. L. Childers, J. Erickson, K. Gross, M. Grove, C. S. Hopkinson, J. Kahn, S. Pincetl, A. Troy, P. Warren, and M. Wilson. 2006. Linking ecology and economics for ecosystem management. <i>Bioscience</i> 56:121-133.
2	9/29	Course introduction; Project overview & discussions with visiting stakeholders; Team formation. <u>Assignment due Week 3:</u> 1) continue to familiarize yourself with the project details and the associated socio-ecological issues. 2) Read & be prepared to discuss: Stephenson, R. 2000. Technically Speaking: Planning Theory and the Role of Information in Making Planning Policy. <i>Planning Theory & Practice</i> , Vol. 1, No. 1, 95-110 Turner, N.; Gregory, R.; Brooks, C.; Failing, L.; & Satterfield, T. 2008. From invisibility to transparency: identifying the implications. <i>Ecology and Society</i> 13(2): 7. [online] URL: http://www.ecologyandsociety.org/vol13/iss2/art7/ Bartholomew, K.; & Ewing, R. 2009. Land Use–Transportation Scenarios and Future Vehicle Travel and Land Consumption. <i>Journal of the American Planning Association</i> , Vol. 75, No. 1. 13-27
3	10/6	Discussions about project with visiting stakeholders; problem formation; class discussion about possible alternatives to address the project problem. <u>Assignments:</u> 1) <u>DUE OCT 9TH</u> : Propose two alternatives to the project problem. For each alternative, write a paragraph that describes the alternative, explains the rationale, and briefly speculates about some possible ecological, social, and economic advantages and disadvantages. (25 points) 2) Read & be prepared to discuss next week: Pickett, S. T. A., M. L. Cadenasso, J. M. Grove, C. H. Nilon, R. V. Pouyat, W. C. Zipperer, and R. Costanza. 2001. Urban ecological systems: Linking terrestrial ecological, physical, and socioeconomic components of metropolitan areas. <i>Annual Review of Ecology and Systematics</i> 32:127-157. Trombulak, SC. and CA Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. <i>Conservation Biology</i> 14: 18-30. Chace, J. F. and J. J. Walsh. 2006. Urban effects on native avifauna: a review. <i>Landscape and Urban Planning</i> 74:46-69.
4	10/13	Consequences of urbanization to ecosystems and biodiversity conservation. What are the kinds of landscape changes about which we are most concerned? (AR) Visit with USFWS & Metroparks guests.

Assignments due Week 5

1) Develop (a) a list of information needs & sources and (b) interview schedule. Plan to interview individuals representing political interests (e.g., someone with political or operational responsibilities in the community, such as a planner), economic interests (e.g., developers), environmental interests (e.g., citizens groups, ngos), and business interests (e.g. chamber of commerce representative).

2) Read & be prepared to discuss:

Bengston, David N. *et al.* (2004). "Public Policies for Managing Urban Growth and Protecting Urban Space: Policy Instruments and Lessons Learned in the United States," *Landscape and Urban Planning* 69, pp, 271-286; available on Carmen.

Guidelines for Land Use Planning. 1996. United Nations: FAO Development Series
Available from: <http://www.fao.org/docrep/T0715E/t0715e00.htm>

5 10/20 The Planning Environment (MMC)

Assignments due Week 6

1) Develop (a) a list of information needs & sources and (b) interview schedule.

2) Read & be prepared to discuss:

Amekudzi, A.; & Meyer, M. D. 2006. Considering the Environment in Transportation Planning: A Review of Emerging Paradigms and Practice in the United States. *Journal of Urban Planning and Development.* 132(1): 42-52.

Berke, P. R. 2008. The Evolution of Green Community Planning, Scholarship, and Practice. *Journal of the American Planning Association* 74(4): 393-407.

Brody, S. D.; & Highfield, W. E. 2005. Does Planning Work? *Journal of the American Planning Association* 71(2): 159-175.

Daniels, T. L. 2009. A Trail Across Time: American Environmental Planning from City Beautiful to Sustainability. *Journal of the American Planning Association* 75(2): 178-192.

Keysar, E. 2005. Procedural Integration in Support of Environmental Policy Objectives: Implementing Sustainability. *Journal of Environmental Planning and Management* 48(4):549-569.

Noland, R. B. 2007. Transport Planning and Environmental Assessment: Implications of Induced Travel Effects. *International Journal of Sustainable Transportation* 1:1-28.

Reid, R. L. 2008. INFRASTRUCTURE: Report Warns U.S. Economy Depends on Transportation Infrastructure and Land Use Planning. *Civil Engineering News* August: 28-30.

6 10/27 Social and economic drivers of urbanization . (AK)

Assignments due Week 7:

1) Read & be prepared to discuss:

Galster, George *et al.* (2001). "Wrestling Sprawl to the Ground: Defining and Measuring an Elusive Concept," *Housing Policy Debate* 12(4), pp. 681-717; available at http://www.fanniemaefoundation.org/programs/hpd/pdf/HPD_1204_galster.pdf .

Bruekner, Jan (2001), Urban Sprawl: Lessons from Urban Economics, *Brookings-Wharton Papers on Urban Affairs*.

Dorfman, Jeffrey (2006), "The Fiscal Impacts of Land Use on Local Government"

Burchell, Robert W. *et al.* (2002). *Costs of Sprawl – 2000*, Transportation Research Board – National Research Council, TRCP Report 74, Washington, DC: National Academy Press *This report is a very thorough empirical analysis of sprawl vs. compact growth. The whole report is an excellent resource, and is available on Carmen for download in 3 parts. For class please read The Executive Summary (Pp 1-22, In Part 1), Ch 8 -Local Road Infrastructure In The United States ((Pp. 243 – 260, In Part 3), Ch 11-Travel Miles And Costs In The United States (Pp 313 – 352, In Part 3)*

Levine, Jonathan. 2006. Market Failures and Land Use Planning, ch. 1 in Zoned Out, RFF Press: Washington, DC. Available as mimeo

Miller, Ansje and Brian Parkinson (2001). *Market-based Policies for Reducing Sprawl: A Critical Overview*, Oakland, CA: Redefining Progress; available on Carmen.

2) Prepare a status report (1 per team) on project progress and challenges. This will be submitted to instructors & presented to class (~10 min overview). (25 points)

7 11/3 Zoning – the solution or the problem?

Discussion about readings; team status reports, guest speaker

Assignments due Week 8:

- 1) Teams should continue to prepare draft report that will be due 11/17.
- 2) Read & be prepared to discuss:

Levy. J. M. 2003. The Tools of Land-Use Planning in *Contemporary Urban Planning, Sixth Edition*. Prentice Hall: NJ. Pp. 114-142.

8 11/10 Stakeholder involvement & the decision-making arena.

Guest Speakers

Assignments due Week 9:

- Teams: prepare a draft report from your project for electronic distribution to the class for peer review (via Carmen). (50 points)

9 11/17 Guest speakers

Assignments due Week 10:

- BY FRIDAY 11/20 (5pm), each person should post her/his peer-review comments on Carmen
- Teams should revise reports and incorporate suggestions from peer reviewers

10 11/24 Work on projects in class.

Assignments due Week 11:

Prepare a ~20 minute powerpoint presentation of your team project. Each team member should be involved in the both development and delivery of the presentation. Stakeholders will be invited to the class to provide feedback and to stimulate discussion.

11 12/1 Presentations
Class discussion about tradeoffs among alternatives.

12 12/4 **Final Report due**
