Columbia University
Graduate School Of Architecture, Planning & Preservation
Urban Planning Program

PLA6065 **Environmental Impact Assessment** Fridays 9-11
Graham L. Trelstad, AICP Spring 2017

COURSE SYLLABUS

A. Purpose and Objectives of the Course

The National Environmental Policy Act (NEPA) and the several state or local regulations requiring environmental impact assessment – including the New York State Environmental Quality Review Act (SEQRA) and the New York City Environmental Quality Review (CEQR) process – require public decision-makers to consider potential short-term and long-term environmental effects of projects or actions. These regulations and processes set forth specific procedures or methodologies to follow in the preparation of environmental assessments or environmental impact statements. The regulations also require incorporation of public participation and agency coordination at several steps in the process.

This course will explore the key procedural elements of NEPA, SEQRA, and CEQR; the key analytic techniques used in impact assessment; and investigate how application of environmental impact assessment affects project outcome. Lectures will introduce students to the statutory requirements of the laws, important judicial decisions interpreting the laws, and standard methodologies for conducting environmental assessments. Case studies will be used to illustrate the effect of the environmental impact assessment on design and implementation of projects or governmental actions. Practical assignments will give students an introduction to the state of practice and the range of analytic techniques used in environmental impact assessment.

B. Course Schedule

Classes will meet on Fridays from 9 AM to 11 AM.

1. 01/20/17 Background and context of environmental impact assessment
2. 01/27/17 Project Initiation I: Framing the Project & Identifying Potential Impacts
3. 02/03/17 Project Initiation II: Framing the Project & Identifying Potential Impacts
4. 02/10/17 Natural Resources: Terrestrial Systems
5. 02/17/17 Natural Resources: Aquatic Systems
6. 02/24/17 Land Use and Neighborhood Character
7. 03/03/17 Demographic, Economic & Fiscal Impacts
8. 03/10/17 Community Services and Open Space
   03/17/17 **No class**. Spring Break.
9. 03/24/17 Mid-Course Reflection: Critiques of the EIA Process
10. 03/31/17 Historic and Archaeological Resources
11. 04/07/17 Aesthetic Resources
12. 04/14/17 Traffic and Transit
13. 04/21/17 Public Health: Air Quality, Noise, and Hazardous Materials
14. 04/28/17 Climate Change & Greenhouse Gas Emissions
15. 05/05/17 Final Exam

C. Course Readings

The New York City *CEQR Technical Manual* will serve as the primary text for this course. The *CEQR Technical Manual* contains descriptions of impact assessment methodologies and impact thresholds. Students should have a good understanding of the readings to allow for discussion in class. Additional readings will be provided on Courseworks.

Students are expected to read from the various environmental impact statements available on the Internet to become familiar with the range of issues and the range of methods for analyzing impacts. Additional technical or procedural guidance from state and federal agencies are also available to round-out your understanding of environmental impact assessment.

Note on reading assignments:

* = Available on Courseworks
@ = Available on Internet. Consult Reference List for URL.

D. Course Outline and Reading Assignments

1. Background and Context of Environmental Impact Assessment

National Environmental Policy Act (NEPA) and its Context
New York State Environmental Quality Review Act (SEQRA)
New York City Environmental Quality Review (CEQR)
Environmental Impact Assessment Process
Issues

Readings

* The Practice of Local Government Planning, Chapter 5, "Environmental Analysis."
* National Environmental Policy Act (NEPA)
@ Council on Environmental Quality Regulations
* NYS State Environmental Quality Review Act (SEQRA)
@ Rules of Procedure for City Environmental Quality Review (CEQR), CEQR Technical Manual Appendices 1-3.
* Gerrard et al., "What is Environment?" §2.05, Environmental Impact Review in New York (EIR).

2. Project Initiation I: Framing the Project & Identifying Potential Impacts

Projects and Actions
Purpose and Need
The Build Year
Segmentation
Alternatives

Readings

* Gerrard et al., "Description of Action" §5.06, EIR
* Gerrard et al., "Environmental Setting" §5.07, EIR
* Gerrard et al., "Future Conditions Without Project" §5.09, EIR
* Page, John. "Make it easy on your readers: ideas on environmental impact document focus, organization, and style." Impact Assessment and Project Appraisal, volume 24, number 3, September 2006, pages 235–245.

3. Project Initiation II: Framing the Project & Identifying Potential Impacts

Cumulative Impacts
No Build versus No Action
The Environmental Assessment Form
Determining Significance

Readings

* Gerrard et at., "Impacts" §5.10, EIR
* Gerrard et al., "Technical Considerations in Impact Analysis" §5.11, EIR
@ NYSDEC Full EAF Workbook -- http://www.dec.ny.gov/permits/91614.html

4. Natural Resources: Terrestrial Systems

Geology, Soils, and Topography
Vegetation and Habitat
Assessment Methodologies
Including consideration of biodiversity in project review

Readings

@ CEQR Technical Manual, Chapter 11, "Natural Resources"–focus your reading on the upland resources (not on water and wetlands)
* Four Seasons of Hamptonburgh EIS – chapters on geology and vegetation and wildlife
* Tuxedo Reserve EIS – chapters on geology and natural resources
* Johnson & Klemens, "Nature in Fragments: The Legacy of Sprawl," chapter 2, "The Impacts of Sprawl on Biodiversity," and chapter 16, "Creating a Framework for Change.

5. Natural Resources: Hydrologic Systems

Watershed Structure and Function
Wetland Structure and Function
Water, Sewer, and Stormwater Infrastructure Systems

Readings

@ CEQR Technical Manual, Chapter 11, "Natural Resources"–focus your reading on the water resources
@ CEQR Technical Manual, Chapter 13, "Water and Sewer Infrastructure"
* Four Seasons of Hamptonburgh EIS – chapter on wetland resources
@ French-American School of New York EIS

Additional Resources

Clean Water Act: http://www.epa.gov/watertrain/cwa/index.htm
NYSDEC Protection of Waters Permit Program: http://www.dec.ny.gov/permits/6042.html
NYSDEC Freshwater Wetlands Permits: http://www.dec.ny.gov/permits/6058.html
NYSDEC State Pollutant Discharge Elimination System (SPDES):
http://www.dec.ny.gov/chemical/8468.html

USACE Nationwide Permit Program:
http://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/

6. Land Use and Neighborhood Character

Land Use, Zoning, and Public Policy
Neighborhood Character / Community Character

Readings

@ CEQR Technical Manual, Chapter 4, "Land Use, Zoning, and Public Policy"
@ CEQR Technical Manual, Chapter 21, "Neighborhood Character"
* IKEA Red Hook EIS -- Chapter 2, "Land Use, Zoning, and Public Policy"
* Atlantic Yards EIS -- Chapter 16, "Neighborhood Character"

7. Demographic, Economic, and Fiscal Impacts

Socioeconomics Impacts
Economic and Fiscal Impacts
Environmental Justice

Readings

@ CEQR Technical Manual, Chapter 5, "Socioeconomic Conditions"
* Columbia Manhattanville EIS -- Chapter 4, "Socioeconomics"
* Second Avenue Subway EIS -- Chapter 18, "Environmental Justice"
* Edwards, Mary M. and Huddleston, Jack R. (2010) "Prospects and Perils of Fiscal Impact Analysis," Journal of the American Planning Association, 76: 1, 25-41.

Additional Resources

NYSDEC Environmental Justice: http://www.dec.ny.gov/regulations/36951.html
USDOT Environmental Justice:
http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/

8. Community Services and Open Space

Per Capita Multipliers, Level of Service, and Case Study Analysis
Open Space: Section 4(f), Section 6(f)

Readings

@ CEQR Technical Manual, Chapter 6, "Community Facilities and Services"
@ CEQR Technical Manual, Chapter 7, "Open Space"
* LeCount Square EIS -- Chapter III-H, "Community Facilities and Services"
* Yankee Stadium EIS -- Chapter 4, "Open Space and Recreation"

9. Critiques of the EIA Process

Readings

To come.

10. Historic and Archaeological Resources

Readings

@ CEQR Technical Manual, Chapter 9, "Historic and Cultural Resources"
* Atlantic Yards EIS -- Chapter 7, "Historic and Cultural Resources"
* Dover Knolls EIS -- Chapter III.H, "Cultural Resources"

11. Aesthetic Resources

Readings

@ CEQR Technical Manual, Chapter 10, "Urban Design and Visual Resources"
@ CEQR Technical Manual, Chapter 8, "Shadows"
* NYSDEC "Assessing and Mitigating Visual Impacts"
* Cape Wind EIS -- Chapter 5.3.3.4, "Visual Resources"

12. Traffic and Transit

Readings

@ CEQR Technical Manual, Chapter 16, "Transportation"

13. Public Health: Air Quality, Noise, and Hazardous Materials

Readings

@ CEQR Technical Manual, Chapter 17, "Air Quality"
@ CEQR Technical Manual, Chapter 19, "Noise"
@ CEQR Technical Manual, Chapter 12, "Hazardous Materials"
@ CEQR Technical Manual, Chapter 20, "Public Health"
* NYSDEC "Assessing Noise Impacts"
* West Nile Virus EIS, Chapter 3a, "Framework of Analysis"
* West Nile Virus EIS, Chapter 3c, "Public Health"

14. Climate Change and Greenhouse Gas Emissions

Readings

@ CEQR Technical Manual, Chapter 18, "Greenhouse Gas Emissions"
* NYSDEC "Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements"
* Municipal Arts Society, "SEQRA and Climate Change," April 2009.
* Gerrard, Michael, "Greenhouse Gases: Emerging Standards for Impact Review," New York Law Journal, vol. 241, no. 58, March 27, 2009.
* Gerrard, Michael, "SEQRA and Climate Change," New York State Bar Association Government, Law and Policy Journal, vol. 10, no. 1, Summer 2008.
* Jones & Stokes, Climate Change Focus Group, "Addressing Climate Change in NEPA and CEQA Documents," August 2007.

D. Student Assignments

1. Prepare a Project Description

Students must write a Project Description of Alfred Lerner Hall (the student center) on the Columbia campus. The Project Description shall be formatted as if it were to appear in an EIS and shall describe the major physical and operational features of the building in a way that frames more detailed analysis that would appear in the EIS.

(See http://lernerhall.columbia.edu/about-lerner-hall-- note the "History & Architecture" link in the table of contents in the left bar of the screen).

Due Date: March 10, 2017

2. Term Paper (7 to 10 pages)

Students have three options for this assignment:

1) Prepare a Land Use and Neighborhood Character Chapter; **or**

Students opting to prepare a land use and community character chapter will follow the CEQR Technical Manual methodologies to prepare a combined "Land Use and Neighborhood Character" chapter describing the context of Alfred Lerner Hall and the Columbia campus and assessing potential impacts. This exercise will provide the student with experience gathering information and presenting it in a concise and logical format in the manner of a technical report.

2) Prepare a critique of an environmental impact statement; **or**

Students may select any environmental impact statement for any project and prepare a cogent analysis of the information presented. This analysis can benefit from post-construction or post-implementation observations of the project or area or may focus on the manner in which information is presented in the EIS.

3) Prepare a more academic piece on a topic relevant to environmental impact assessment.

Students selecting this option should discuss the selected topic with me early in the semester. It is expected that the student will conduct research in appropriate scholarly or trade journals or conduct original research to support discussions and conclusions within the paper. This cannot simply be an opinion piece.

Due Date: April 21, 2017

3. Final Exam

There will be an in-class Final Exam comprising a combination of multiple-choice questions and short answer questions.

Final Exam: May 5, 2017