Cornell University
College of Architecture, Art, and Planning
Department of City and Regional Planning

Spring 2025

CRP 5530 Land Use and Spatial Planning Methods

Drone photograph of downtown Ithaca and South Hill by Jenni Minner.

January 22 - May 5, 2025 + Final exam
Lecture: MW 11:40 am - 12:55 pm **Sibley Hall 101**
Lab: Fridays at 2:30pm - 3:20pm in the **3rd floor computer lab.**
4 credits, Graded
Instructor: Jenni Minner, PhD
E-mail j.minner@cornell.edu
Thursdays 2:00 – 4:00 (book using https://calendly.com/j-minner/30-minute-meeting) or email for an appointment. Available to meet in Sibley 204 or via Zoom.
Teaching Assistant: Ash Kopetzky, alk278@cornell.edu
Graduate Teaching and Research Specialist: Trevor Jensen, tkj26@cornell.edu

Course Overview

City and regional planning must grapple with community equity, sustainability, and well-being and their interconnections to spatial patterns in land use, built environment, and ecological systems. This course provides an introduction to land use and spatial planning methods, especially those that are employed

by local and regional governments. The course surveys analytical and participatory methods to shape urban form and the built environment to achieve more equitable and sustainable communities. Methods include the application of scenario planning tools and methods, drafting and applying zoning regulations; creation of comprehensive plans, neighborhood, district, and corridor plans; conducting inventories of natural and cultural resources, building vacant and buildable lands, and community greenhouse gas inventories; performing suitability and susceptibility to change analyses, among other methods. The course incorporates methods of community engagement, as well as methods of analysis. Methods are presented in the context of learning about topics related to contemporary city and regional planning.

Land use and spatial planning methods are particularly relevant to the fields of historic preservation, real estate, landscape architecture, and public administration, as well as city and regional planning. The class fulfills the requirements as a methods course for the Master of Regional Planning program. Students from any field are welcome.

Course Format

Combination of lectures, seminar-style discussion, and labs.

Prerequisites

Proficiency with geographic information systems (GIS) is valued and many methods build from or are related to GIS skills; however, prior experience is not required.

Departmental Learning Goals

The following are Departmental learning goals that are emphasized in this course:

- Use critical thinking to examine, understand, and arrive at judgments about cities and regions, and planning issues in the contexts they work.
- Be an employable professional.
- Understand and act on a code of professional ethics for planning professionals and uphold ethical standards more broadly in the field of city and regional planning.
- Act as an environmental steward and incorporate issues of environmental quality and sustainability into planning practice.
- Incorporate diversity and social justice into planning practice within the US and globally.
- Understand the importance of economic growth, efficiency, and equity to communities in diverse settings.
- Demonstrate adequate research skills, including the ability to ask the right questions, to conduct an analysis using appropriate quantitative and qualitative research methods to understand, analyze, and lead to procedures and eventual solutions to planning problems.
- Demonstrate effective oral, visual, and written communication skills.
- Understand plans and different plan components and be able to create plans at different scales and in different institutional contexts from comprehensive plans to neighborhood-level plans.

- Work in different situations that require collaboration, negotiation, and mediation between diverse, sometimes conflicting interests within organizations and with the communities that planning serves.
- Health and Built Environment: planning's implications on individual and community health in the places where people live, work, play, and learn.

These map to the Planning Accreditation Board learning outcomes.

Textbooks and Software

There are two required textbooks, which are available from the Cornell Bookstore. All other readings are provided via Canvas. Access to UrbanFootprint, a specialized scenario planning tool is provided to students in the class.

Evaluation

Deliverables: Memos	25%
Class and Lab Attendance and Participation	10%
Submit Discussion Questions + Activity and Faciliate	15%
Lab Exercises	25%
Final Exam	25%

Class Policies

Academic Integrity

Each student in this course is expected to abide by the Cornell University Code of Academic Integrity. Any work submitted in this course for academic credit must be your own work. When you use a map, photograph, or diagram from another source or when you quote text, you must provide a reference to the source. Do not repurpose material and represent it as your own. All of your work should be consistent with Cornell's Code of Academic Integrity.

TurnItIn

TurnItIn.com is a resource in my class. This helps us to identify issues with plagiarism. Students agree that by taking this course, all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

Statement of Use of Generative AI

We will discuss the appropriate use of AI in this class and come to a class agreement. All artwork and text must be your own. AI may be used to check your grammar and make iterative suggestions for improvement. Assignments such as the reflection and research paper must be written and researched by you.

Note to Students with Disabilities -- I encourage you to contact me early on if you have concerns or if there is anything I can do to accommodate and support you in this class. If you have a disability-related need for reasonable academic adjustments in this course, please provide an accommodation notification letter from Student Disability Services as soon as possible. I invite you to set up a meeting with me to discuss needed accommodations in a confidential environment. If you have not done so already, I encourage you to meet with Student Disability Services for disability verification and determination of reasonable accommodations

Assignments

Attendance and Active Participation

Students are expected to be on time and actively engage in all class discussions and labs.

Class Activities

There will be a series of in-class individual and team activities. Some of these activities will be graded.

Lab Exercises

Graded lab exercises to help you to build analytical skills. Many of these skills will help with the deliverables.

Deliverables: Memos

This is a series of assignments that involve land use analysis and drafting of memos. The assignments have been crafted to give you experience applying land use planning methods and scenario planning tools and techniques. In class, you will share the conclusions in your memo.

Final Exam

The class will have an online final exam at the end of the semester.

Course Schedule – Spring 2025

The contents of this syllabus may shift throughout the semester to enhance learning objectives and outcomes and respond to unforeseen circumstances. If changes are made in the readings or assignments, this information will be communicated as early as possible.

Week 1 – Introduction to Class + Lab

Due by Wednesday, January 22:

- Read the syllabus.
- Sign up on Canvas to pose questions to the class. **Sign up by next Monday end of day.**
- Metternicht, Graciela. (2018). Excerpts from Land Use and Spatial Planning. Cham, Switzerland: Springer.

Attend Lab: Friday, January 24:

- Meet in the Sibley 3rd floor computer lab.
- Lab outcomes
    - Sign up for UrbanFootprint.
    - Sign up for Poll Everywhere.
    - Review mapping best practices in the lab and creating polls.
    - Go through a worksheet to learn how to create a Project for a city in UrbanFootprint.

Week 2 – Scales, Frameworks, Patterns, and Scenarios of Land Use Planning/ Comprehensive Plans – Purpose and Process / Introduction to a Planning Support and Scenario Planning Tool - UrbanFootprint

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Readings due by Monday, January 27:

- Goodspeed, Robert. (2020) *Scenario Planning for Cities and Regions.* Chapter 1: pages 3-20.
- Rouse and Piro (2022) *The Comprehensive Plan.* Pages. 1-14.

Readings due Wednesday, January 29:

- Read over 'What is Urban Footprint.'
- Rouse and Piro (2022) *The Comprehensive Plan.* Chapters 2-4, pages 15-50.
- Directions for Assignment 1 distributed.

Guest Speaker: Duncan Kay or Nick Branch, UrbanFootprint

Optional, supplemental:

- Godschalk, David and Rouse, David. (2015) PAS Report 578: Sustaining Places Best Practices for Comprehensive Plans. Chicago, IL: American Planning Association.
- The 21st Century Comprehensive Plan. *Planning Magazine.*
- See Daniel Burnham Award recipients from here: https://www.planning.org/awards/recipients/
- PAS Memo: Integrating Capital Improvements Planning with the Comprehensive Plan.

Attend Lab: Friday, January 31.

- Lab outcomes: Add and examine data layers in UrbanFootprint. Consider how GIS data and scenario planning tools can support comprehensive planning.

Week 3 – Inventory of Natural Systems / Demographic Analysis

Readings due Monday, February 3

- Rouse and Piro (2022) *The Comprehensive Plan.* Chapter 5, pages 51-62.
- Rouse and Piro (2022) *The Comprehensive Plan.* Chapter 6. Pages 63-89.
- Skim through Chapters 1, 4-6 of *Creating a Natural Resources Inventory. A Guide for Communities in the Hudson River Estuary Watershed.*

Optional, recommended: Read excerpts from Lincoln Institute of Land Policy's (2022) *Integrating Land Use and Water Management.*

Readings due Wednesday, February 5:

- Jepson, Jr., E.J., & Weitz, J. (2020). Fundamentals of Plan Making: Methods and Techniques (2nd ed.). Routledge. https://doi.org/10.4324/9781003089971 Chapter 3: Demographic Analysis.

Attend Lab: February 7.

Week 4 –Economic Analysis / Visualizing and Shaping Urban Form / Analyzing Spatial Patterns

Readings due by Monday, February 10:

- Jepson, Jr., E.J., & Weitz, J. (2020). Fundamentals of Plan Making: Methods and Techniques (2nd ed.). Routledge. https://doi.org/10.4324/9781003089971 Economic Analysis
- Rouse and Piro (2022) *The Comprehensive Plan.* Chapter 10. Pages 149-165

Readings due by Wednesday, February 12:

- Dovey, Kim and Elek Pafka. Densities. In Dovey, Kim, Pafka, Elek, and Ristic, Mirjana. (2018) Mapping Urbanities: Morphologies, Flows, Possibilities. New York, NY: Routledge, p. 62-81.
- Rouse and Piro (2022) *The Comprehensive Plan.* Chapter 7.

Attend Lab: February 14.

Week 5 – Zoning and Code Reform

FEBRUARY BREAK – No class on Monday, February 17

Readings due by Wednesday, February 19

- Read What is Zoning Reform and Why Do We Need It? https://www.planning.org/planning/2023/winter/what-is-zoning-reform-and-why-do-we-need-it/
- Excerpts from Nolan Gray. (2022) *Arbitrary Lines: How Zoning Broke the American City and How to Fix.* Page 31-65.
- What is Equity in Zoning? Pages 10-50.

Attend lab Friday, February 23.

Week 6 –Transportation and Community Infrastructure / Quasi-Judicial Planning: Evaluating Development Proposals

Readings due Monday, February 24

- Rouse and Piro (2022) *The Comprehensive Plan.* Chapter 8.
- Jepson chapter. Transportation System Analysis.

Tuesday, February 25 6 pm – Attend City of Ithaca Planning and Development Board meeting in person.

Readings due Wednesday, February 26:

- MUST HAVE ATTENDED MEETING TUESDAY
- Chapter 6 "Property Rights: The Owner as Planner" Platt R.H. (2014) In: *Land Use and Society.* Washington DC: Island Press. Pages 151-172.

Attend Lab: February 28

Week 7 – Social Systems and Housing Analysis / Scenario Planning and Public Engagement

Readings due Monday, March 3:

- Rouse and Piro (2022) *The Comprehensive Plan.* Chapter 9.
- Goodspeed (2020). *Scenario Planning for Cities and Regions. Chapters 2-3.*
- Jepson, Housing Analysis Chapter

Optional:

- Loh, C. G., & Kim, R. (2020). Are We Planning for Equity?: Equity Goals and Recommendations in Local Comprehensive Plans. *Journal of the American Planning Association,* 1–16. https://doi.org/10.1080/01944363.2020.1829498
- John Randolph. (2012) "Collaborative Environmental Planning for Sustainability." In *Environmental Land Use Planning and Management*. P. 80-104.

Directions for Memo Assignment 2 distributed.

Readings due Wednesday, March 5:

- Goodspeed (2020) *Scenario Planning for Cities and Regions. Chapter 4.*
- Excerpts from *Stapleton, Jeremy (2020) How to Use Exploratory Scenario Planning (XSP) Navigating an Uncertain Future.* Cambridge, MA: Lincoln Institute of Land Policy.

Optional, Deep dive:

- Pittsburg Public Engagement Guide.

Friday, March 7: Meet at 3 pm at Southworks on South Hill. (Instead of Lab)

Sunday, March 9: Memo 1 due.

Week 8 – Indigenous Knowledges + Climate Mitigation and Adaptation/Hazard Mitigation, Scenario planning continued

Readings due Monday, March 10:

- Brondízio, E. S., Aumeeruddy-Thomas, Y., Bates, P., Carino, J., Fernández-Llamazares, Á., Ferrari, M. F., Galvin, K., Reyes-García, V., McElwee, P., Molnár, Z., Samakov, A., & Shrestha, U. B. (2021). Locally Based, Regionally Manifested, and Globally Relevant: Indigenous and Local Knowledge, Values, and Practices for Nature. Annual Review of Environment and Resources, 46(1), 481–509. https://doi.org/10.1146/annurev-environ-012220-012127
- Alaska Native organizations to the National Science Foundation. Letter dated March 19, 2020.

Readings for Wednesday, March 12:

- Goodspeed (2020) Chapter 5.

Attend lab: Friday, March 14.

Week 9 – Feasibility / ROI Analysis of Mixed Use / Planning Retail

Readings due Monday, March 17:

- Peiser and Hamilton (2023) Professional Real Estate Development. Chapter on Multifamily Residential Development, Pages 143-214.

Readings due Wednesday, March 19:

- PAS report Planning for a Resilient Retail Landscape.
- Read the About page of the National Zoning Atlas website
- Skim the How-To guide
- Use the Tips to be able to navigate the Atlas itself.

Optional: Protecting Historically Disadvantaged and Vulnerable Neighborhoods and Business Districts.

Guest Speaker: Sara Bronin, National Zoning Atlas

Attend Lab: Friday, March 21

Week 10 –Susceptibility to Change / Vulnerability

Readings due Monday, March 24:

- Goodspeed (2020) Chapter 6.
- Review Build Out examples and student-written Suitability Memos.
- Mitchell, Andy. The ESRI Guide to GIS Analysis. Volume 3. Redlands, CA: ESRI Press, 2012. Chapters 2 and Chapter 3 to page 128.

Readings due Thursday, March 26.

- Excerpts from *Smart Land-Use Analysis. The LUCIS Model.*
- Using suitability analysis to select and prioritize naturalization efforts in legacy cities: An example from Flint, Michigan.

Optional: Chapple, K., & Zuk, M. (2016). Forewarned: The Use of Neighborhood Early Warning Systems for Gentrification and Displacement. *Cityscape*, 18(3), 109-130. Retrieved from http://www.jstor.org.proxy.library.cornell.edu/stable/26328275.

Guest Speaker Jayme Breschard, AICP, CFM, Senior Managing Community Planner, Barton & Loguidice.

No lab this Friday.

Spring Break – March 29- April 6

Week 11 – Planning for Industrial Uses and Planning to Adapt Industrial Sites for New Mixed Uses / Healthy Community and Regional Connections

Readings due Monday, April 7:

- Chapple, K. (2015) *Planning Sustainable Cities and Regions*. Chapter 9: The Challenge of Mixing Uses and the Secret Sauce of Urban Industrial Land.

Readings due Wednesday, April 9:

- Rouse and Piro (2022) Chapter 11, 12

Optional, deep dive:

- PAS on Community Food Assessments..

Assignment 2 due Sunday, April 13.

Week 12 – Geodesign Training

Monday, April 14:

- Reading due: Goodspeed (2020) Chapter 10.
- Dr. Hrishikesh Ballal leading Geodesignhub exercise in class.
- Geodesignhub assignment distributed.

Wednesday, April 16:

- Dr. Hrishikesh Ballal leading Geodesignhub exercise in class.

Attend lab: Friday, April 18. Meet in Sibley 101 to finish up the Geodesignhub exercise.

Week 13 –Circular Cities and Carbon Neutrality

Monday, April 21: Geodesignhub Memo 3 due from Teams.

NO CLASS ON APRIL 21

Readings due Wednesday, April 23

- Minner, Jennifer; Poe, Jocelyn; Heisel, Felix; Kopetzky, Ash; Porath, Maya; and Worth, Gretchen. (2024) Embodying Justice in the Built Environment: Circularity in Practice. Ithaca, NY: Cornell University.
- Heisel, F., Hebel, D. E., & Webster, K. (2022). *Building better-less-different: Circular construction and circular economy: fundamentals, case studies, strategies* (1st ed.). Birkhäuser. Pages 10-25 and chapter on the Case for Deconstruction: How Cities Can Stop Wasting Buildings.

Optional, deeper dive:

- Chapters 2 and 10 from Bruce King and Chris Magwood. (2022) *Building Beyond Zero.* Island Press. Girard, L. F. (1,2), & Nocca, F. (1). (2019). Moving towards the circular economy/city model: Which tools for operationalizing this model? Sustainability (Switzerland), 11(22). https://doi.org/10.3390/su11226253
- Arup, Ellen MacArthur Foundation. (2020) From Principles to Practices: Realising The Value of Circular Economy in Real Estate.
- Wainwright, Oliver. (2020). The case for never demolishing another building. https://www.theguardian.com/cities/2020/jan/13/the-case-for-never-demolishing-another-building

Attend lab: Friday, April 25.

Week 14 – Methods in studying Tourism, Land Use, and Gentrification / Using Drone Imagery / Agent-based Modeling

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Readings due Monday, April 28:

- Oskam, J. (2022). Understanding the Airbnb community and its community impact: The use of scenarios to build resilience. In A. Farmaki, D. Ioannides, & S. Kladou (Eds.), Peer-to-peer accommodation and community resilience: Implications for sustainable development (pp. 133–143). CABI. https://doi.org/10.1079/9781789246605.0011

Optional:

- Rabiei-Dastjerdi, H., McArdle, G., & Hynes, W. (2022). Which came first, the gentrification or the Airbnb? Identifying spatial patterns of neighbourhood change using Airbnb data. Habitat International, 125, 102582. https://doi.org/10.1016/j.habitatint.2022.102582
- Kleinschroth, Fritz, et al. "Drone Imagery to Create a Common Understanding of Landscapes." Landscape and Urban Planning, vol. 228, Dec. 2022, p. 104571. DOI.org (Crossref), https://doi.org/10.1016/j.landurbplan.2022.104571.

Readings due Wednesday, April 30:

- Hassani-Mahmooei, Behrooz, and Brett W. Parris. "Climate Change and Internal Migration Patterns in Bangladesh: An Agent-Based Model." Environment and Development Economics, vol. 17, no. 6, Dec. 2012, pp. 763–80. DOI.org (Crossref), https://doi.org/10.1017/S1355770X12000290

Week 15 – Final discussion

Readings due Monday, May 5:

- No readings due

FINAL EXAM: Sunday, May 11 at 2 pm. The exam will be posted online and due by the end of day.

OPTION: There is an option to finish a Return on Investment Memo, which is due by the end of the day.

It is recommended to pick one or the other and not both. However, If both are completed, the highest of the two scores will be used for the final grade.