Executive Summary

Urban Planning Studio: Climate Vulnerability, Aging, and Managed Retreat in Coastal Massachusetts

This Urban Planning Studio engaged graduate students in an intensive, applied research project examining the intersection of climate risk, housing vulnerability, and aging populations across coastal communities in Massachusetts. Centered on the challenge of flood-induced managed retreat among older adults in subsidized housing, the studio combined spatial, policy, and community-based approaches to develop grounded, equity-focused planning insights.

Studio Approach and Analytical Framework

The studio was structured around a three-stage analytical process that moved from system-level assessment to community-informed planning and actionable recommendations.

In the first stage, students produced detailed Community Climate and Vulnerability Profiles for multiple municipalities, including Chelsea, Lynn, Quincy, and others. These assessments synthesized federal, state, and local datasets to identify key climate hazards—particularly coastal flooding, stormwater inundation, and extreme heat—and examined how these hazards intersect with housing conditions, mobility systems, and socioeconomic vulnerability. For example, analyses highlighted how dense urban form, aging multifamily housing, and environmental justice conditions compound risk for older adults in communities such as Chelsea and Lynn .

The second stage centered on primary data collection and community engagement. Students recruited participants and conducted focus groups and surveys across six locations in coastal Massachusetts, working directly with older adults in subsidized housing. This fieldwork generated a rich dataset capturing lived experiences of climate risk, including challenges related to mobility, health, housing conditions, service access, and social isolation. Students were responsible not only for data collection but also for coding, analyzing, and interpreting

survey and focus group data, translating qualitative insights into structured analytical findings.

The final stage integrated these quantitative and qualitative insights into comprehensive planning recommendations. Students synthesized hazard exposure data with lived experience to identify critical gaps in existing planning frameworks and to propose interventions across housing, transportation, health systems, and social infrastructure. For instance, the Medford analysis demonstrates how extreme heat and flooding interact with aging housing stock, chronic health conditions, and limited mobility to produce layered vulnerability, requiring coordinated, cross-sector responses .

Experiential Learning and Applied Research

A defining feature of the studio was its emphasis on hands-on, community-engaged research. Students actively participated in the full research process—from recruitment and data collection to analysis and synthesis—gaining direct experience in participatory planning methods and human-subject research protocols. Engagement across six sites enabled students to understand how climate risks are experienced differently across geographic and social contexts, while also developing skills in stakeholder interaction, facilitation, and applied policy analysis.

This approach ensured that the studio moved beyond abstract modeling to incorporate community voice as a central component of planning knowledge, reinforcing the importance of integrating lived experience into climate adaptation and resilience planning.

Key Insights

Across all study sites, several consistent findings emerged:

- Climate vulnerability is structurally produced and unevenly distributed, with older adults in subsidized housing facing compounded risks due to housing quality, income constraints, and limited mobility.

- Built environment conditions amplify exposure, particularly in areas with aging infrastructure, high impervious surface coverage, and limited climate-responsive design.
- Social and relational factors are critical determinants of resilience, including informal care networks, language access, and trust in institutions.
- Existing planning and environmental justice frameworks incompletely capture aging-related vulnerability, underscoring the need for more inclusive and human-centered approaches.

Conclusion

This studio advances a systems-based and equity-centered approach to climate adaptation, demonstrating that effective responses to climate risk must integrate physical infrastructure, social systems, and governance structures. By combining rigorous analysis with community-engaged research, the studio produced a suite of professional-quality reports that contribute to both academic scholarship and ongoing policy discussions on climate resilience, aging, and managed retreat.

Collectively, this work highlights the role of planning as a practice that bridges data, lived experience, and institutional action, preparing students to address complex, real-world challenges in climate adaptation and community development.