

Undergraduate Research Assistantship Report, 2026

Incumbency and infrastructure for climate change adaptation in the coastal US

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This project explored the tenacity of residents in American cities and towns to invest in and build natural hazard-resilient infrastructure in face of the climate crisis. Dr. Rebecca Elliott's sociology of incumbency "captures an often-implicit commitment to preserving present arrangements of people and property as is and retaining the familiar "character" of place, routines of life, and identities" from those arrangements. Existing social theory asserts that social order must be actively produced through social actors, and incumbency reflects both the absence of willingness for change and creates the conditions for this possibility. Specifically, this framework stands both to contribute to the scholarship on resilience, and its potential to reproduce social inequalities, and sociologically explain why people fight seemingly unbeatable odds to "stay put." Physical infrastructure serves as an empirical proxy that constructs and expresses incumbency's potential; similarly, certain infrastructure neglect exposes systemic mistreatment of particular populations. The wording underscores the privilege of entitlement for many coastal populations and cities and enlightens the assumption that certain physical constructions are perpetually responsible for defending the present normalcy.

Research contributions

My specific research contributions primarily take form in populating a census of coastal infrastructure projects, intended to allow cities to adapt to climate changes, to document jurisdiction-specific approaches to climate change adaptation and, thus, qualitatively understand broader patterns regarding societal priorities of preservation-worthy spaces. Differences in political environments, state policies on food adaptation and protection, and within-city and

-neighborhood demographics and property valuation dictated diverging strategies for coastal infrastructure protection. For example, the most prominent case study, the Charleston Peninsula Sea Wall, a 7.8 mile seawall around the perimeter, will protect homes that have been consistently flooded and rebuilt and highlights the salient historical inequity arising across many of the projects. The communities of Rosemont and Bridgeview Village (working class and predominantly Black) in Charleston are excluded from the wall's protection, exposing how the commitment to protecting incumbent land uses represents a historical convergence of property rights, inheritance, and white supremacy. Furthermore, in May 2026, a Nature Sustainability publication found that the wetlands erosion and sea-level rise in New Orleans, Louisiana has reached a "point of no return", strongly recommending a managed retreat approach, unseen in almost every other coastal management plan. Ultimately, these findings allowed me to aggregately evaluate the census data for emerging patterns.

Equally important was identifying potential interviewees for a few select projects and answering some preliminary questions from the Ethics form before outreach for interviews.

Methods

With regards to data collection, updating the census engaged with documentary analysis, downloading and collating source materials from government agency, NGO, and construction developer websites in addition to local news reports and community forums, such as Reddit, Facebook, and public comment transcripts.

This project analysis exemplifies comparative case analysis built on an administrative census, combined with inductive thematic identification across a heterogeneous dataset. The census itself captures a wide spectrum of coastal flood infrastructure projects, representing a complete enumeration rather than a select sample.

Identifying patterns across the original census columns required adding additional columns of property value protection, specifically property value changes before vs. after construction and the ratio of residential to commercial property protected; the primary design philosophy, revealing whose “vision of the future” takes priority; communities/areas explicitly excluded from protection (e.g. Charleston case); historic and cultural sites protected, as seen with the SF Embarcadero project protecting a waterfront; and time delay and financing changes, exposing how a project ranks against other state priorities. These additional columns allowed a project-by-project evaluation of incumbency (in)justice and required a more in-depth search, including contacting municipal project managers and independent contractors.

Furthermore, the project will also include stakeholder interviews. As each project is in different stages of development, methodological examination also included identifying other specific projects to focus on in contrast to the Charleston case.

Findings and recommendations

The census covers approximately 35 coastal flood infrastructure projects across ten US states, representing over \$50 billion in committed or project investment. Projects span levees and seawalls, tidal marsh restoration, hybrid green-grey systems, and more. Each is coded across 26 variables (columns); key empirical patterns that emerge are that 1) costs consistently exceeded initial estimates (South SF Bay rose 194% from 2018-2024) 2) timelines are almost always lengthened 3) managed retreat is effectively absent and 4) federal cost-benefit frameworks do not straightforwardly privilege wealth but are linearly related to race and income.

This project represents an intersection of three bodies of scholarship. First, critical adaptation literature examining how resilience infrastructure reproduces rather than challenges existing inequalities. Second, the sociology of “staying put” (work by Lequeieu on rural place

attachment and Kimbro on flooded Houston communities), which documents the motivational structures behind incumbency claims. Third, urban political economy literature on growth machines and property-tax dependence (Martin), which explains the fiscal incentive behind municipal government protection of real estate over people. Dr. Elliott's theory of incumbency bridges these literatures by providing a unified vocabulary (privilege, prosperity, permanence) for analyzing these arrangements.

With the goal of environmental justice arise the following recommendations:

- 1) Decouple federal interest thresholds from pure cost-benefit analysis: communities with low property values but high social vulnerability score poorly on cost-benefit criteria despite having the greatest need.
- 2) Mandate demographic impact assessments for coastal projects, requiring explicit documentation of which communities fall outside protection alignments and why, with independent review of technical justification for exclusion
- 3) Create sustainable funding streams for managed retreat: currently, almost all coastal funding flows through mechanisms that structurally reward protect-in-place outcomes. A dedicated retreat/relocation fund would give communities a legitimate alternative to permanent infrastructure dependence.

Conclusion and next steps

Building this census has been an exercise in how to read infrastructure as social text. Tracking escalating costs, timelines, and community exclusion through technical language has transformed the theory of incumbency from abstract to empirically grounded. Future research direction includes moving from documents to conversations, where stakeholder interviews will provide visibility on the affective and political dimensions of incumbency.