


A Proposal to the:
National Oceanic and Atmospheric Administration
Office for Coastal Management
2022-2024 Digital Coast Fellowship Program

Project Title:
**Shifting Property Lines: Ecological, policy, legal, and economic implications of
acquired or vacated coastal property and infrastructure**

Submitted by:
Coastal States Organization
&
Association of State Floodplain Managers

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1. Background and Introduction

A growing number of coastal communities across the United States are already confronting the policy challenges of planning for and managing coastal properties with structures that face removal due to increased erosion, inundation, or flooding driven by the impacts of climate change, including sea level rise and Great Lakes lake level changes.¹ The prevalence of communities facing these challenges, along with the floodplain management issues associated with shifting property lines, is anticipated to expand dramatically in the coming decades due to climate change.² Consequently, many impacted communities will have to be prepared to manage both planned and unplanned coastal retreat.

The Coastal States Organization (CSO) and Association of State Floodplain Managers (ASFPM) propose a fellowship project that leverages the expertise of a two-year Digital Coast Fellow to develop technical guidance resources to support local communities in planning for and managing residential coastal properties acquired or vacated due to erosion, inundation, and flooding worsened by climate change. The high economic and environmental costs of uninhabitable coastal property that has been acquired or vacated represent one of the areas of greatest need for new understanding of common law, statutory, and regulatory constraints on policy options for state and local climate adaptation planning. This project will strengthen and broaden the suite of climate adaptation data and planning resources provided through the Digital Coast platform by building on existing tools to address this growing need.

When a property in the coastal zone is inundated and becomes uninhabitable, is subject to repeated erosion or flooding impacts from coastal storms, or becomes economically unsustainable from fluctuations in real estate and insurance markets, property owners may increasingly seek (or be forced) to relocate through sale, foreclosure, use of a buyout program, or abandonment. These decisions are often made in the post-disaster context, when resident and government resources are stretched thinnest. Local communities increasingly face the challenge of managing the economic, ecological, and legal impacts of acquired or vacated properties in entire sea (or Great Lake) level rise-exposed neighborhoods; often in neighborhoods that house the community's most socially vulnerable residents. Additionally, these communities must plan for the management or discontinuation of the infrastructure that supports these exposed neighborhoods (water, sewer, power, gas, telecommunications, roads, and public access).

Many coastal communities cannot afford to pay the costs associated with property abandonment or vacancy. It is estimated that a 0.5-m sea level rise by 2100 could cause cumulative impacts to U.S. coastal property ranging from \$20 billion to more than \$150 billion.³ These challenges disproportionately impact rural, small, isolated, and low-income communities confronting parallel and cumulative environmental justice challenges.⁴ In addition, abandoned coastal property is environmentally costly, exacerbating coastal erosion, impacting wildlife habitat, and polluting local waters⁵.

¹ Flavelle, Christopher. 2018. "The Fighting Has Begun Over Who Owns Land Drowned by Climate Change." Bloomberg Businessweek.

² Rodziewicz, David, et al. 2020. "Housing Market Value Impairment from Future Sea-level Rise Inundation." Federal Reserve Bank of Kansas City, Research Working Paper no. 20-05, July. <https://doi.org/10.18651/RWP2020-05>

³ Yohe, G., Neumann, J. E., & Marshall, P. (1999). The economic damage induced by sea level rise in the United States. *Sea*, 3, 4.

⁴ Collins, T.W., Grineski, S.E. & Chakraborty, J. Environmental injustice and flood risk: a conceptual model and case comparison of metropolitan Miami and Houston, USA. *Reg Environ Change* 18, 311–323 (2018). <https://doi.org/10.1007/s10113-017-1121-9>

⁵ Carrero, R., Malvárez, G., Navas, F., & Tejada, M. (2009). Negative impacts of abandoned urbanisation projects in the Spanish coast and its regulation in the Law. *Journal of Coastal Research*, 1120-1124.

Technical and planning guidance resources exist for communities to manage properties acquired through open space buyout programs,⁶ protect ecosystems⁷ and infrastructure⁸ in highly erosive or flood-exposed coastal areas, or mitigate ecological impacts from damaged or abandoned property in the disaster response and recovery context.⁹ Planning guidance is also available for communities planning buyout or managed retreat strategies, such as economic support for residents seeking to relocate.¹⁰

However, feedback from CSO and ASFPF members indicates that a comprehensive resource for neighborhood-scale planning and management of acquired or vacated properties, tailored to local compliance and liability concerns, is not available, and local communities face an overwhelming prospect of exploring existing resources to find actionable answers. Moreover, there is a gap in support and solutions for rural, small, isolated, and low-income communities. CSO and ASFPF recognize that the answer is not more tools, but instead coordination and support across federal, state, and NGO partners through platforms like Digital Coast to make existing resources more accessible to state programs and community end-users.

CSO and ASFPF are member-based national nonprofits that work in partnership with their memberships - state and local coastal managers and floodplain administrators - to identify needs on the ground and meet them with national resources, data, tools, and expertise. Our members provide coastal communities with expertise in coastal data, planning, stakeholder engagement, engineering, and mitigation project implementation through technical assistance, funding, permitting, and coordination with landowners, business owners, community stakeholders, academia, industry, non-profit groups, and federal, state, and local agencies.

The Fellow will work with experts within and outside of the Digital Coast Partnership to compile and synthesize existing resources and fill the gap in guidance for specific neighborhood-scale planning and management solutions. Effective planning requires communities to systematically gather and assess risk-exposure and vulnerability data, integrating future conditions modeling (including sea level rise, precipitation patterns, and development patterns), and use these data in consultation with stakeholders to prioritize specific policy actions and mitigation projects. Management of acquired or vacated properties requires communities to have infrastructure maintenance obligations, funding and land management plans, ecosystem remediation, monitoring of water quality impacts (marine debris, septic systems, etc.), an understanding of and plans for erosion and geomorphological impacts, plans for working with holdouts and isolated properties, and mitigation of liability exposure.

⁶ e.g. FEMA's 1998 Property Acquisition Handbook for Local Communities (<https://www.fema.gov/pdf/government/grant/resources/hbfullpak.pdf>), ELI 's floodplain buyout guidance (<https://www.eli.org/sites/default/files/eli-pubs/actionguide-web.pdf>), New Jersey's Green Acres planning guidance (https://www.nj.gov/dep/greenacres/pdf/osrpg_2019.pdf)

⁷ e.g. FEMA nature based solutions for hazard mitigation guidance (https://www.fema.gov/sites/default/files/documents/fema_riskmap-nature-based-solutions-guide_2021.pdf)

⁸ e.g. FHWS nature based solutions for coastal highways guidance (https://www.fhwa.dot.gov/environment/sustainability/resilience/ongoing_and_current_research/green_infrastructure/nature_based_solutions/)

⁹ e.g. the Local Government Environmental Assistance Network guidance for emergency management (<https://www.lgean.net/publicsafety.php>)

¹⁰ e.g. Georgetown Climate Center Managed Retreat Toolkit (<https://www.georgetownclimate.org/adaptation/toolkits/managed-retreat-toolkit/introduction.html>)

2. Goals and Objectives

Many communities are not prepared to manage planned and unplanned retreat and thereby adapt to climate hazards due to a gap in guidance for neighborhood-scale planning and management solutions for acquired or vacated properties. Therefore, the overarching goal of this multidisciplinary project is to fill this gap by developing a comprehensive resource and technical guidance to help state and local coastal and floodplain planners, managers, and permittees plan for and manage properties acquired or vacated due to the impacts of sea level rise and lake level change on erosion, inundation, and flood hazards. CSO and ASFPM, as members of the Digital Coast partnership, play the role of connecting local, county, and state managers to the technical resources and support necessary to implement change on the ground. This project seeks to advance CSO's and ASFPM's work in that area while providing the Fellow with experience planning, coordinating, and implementing major policy analysis and technical assistance projects with national and local stakeholders.

Goal 1: Support community management of current and future acquired and/or vacated property, thereby enhancing coastal resilience to climate hazards.

Objective 1.1: Vulnerable coastal communities will use technical guidance created out of this project to implement best practices for managing acquired and/or vacated property based on environmental, policy, legal, and/or economic implications, with consideration of systemic socioeconomic factors.

Objective 1.2: Resources and guidance that come out of this project will meet technical and policy needs of floodplain and coastal managers - especially those of rural, small, isolated, racially minoritized, and low-income communities - and provide actionable information on overcoming barriers to funding, capacity, and community engagement.

Objective 1.3: Communities with similar needs and characteristics will be able to connect and learn from each other on managing acquired and/or vacated property through the online resource developed from this project.

Goal 2: Develop sustainable, well-integrated, and adaptable technical guidance and resources for coastal and floodplain managers that build on the progress made by CSO and ASFPM in ongoing collaborative projects and on the partnership resources available through Digital Coast.

Objective 2.1: This project will inspire future coastal resilience projects that build off of this work. For example, a follow-up project could investigate shifts in migration patterns due to relocation of acquired and/or vacated property owners.

Objective 2.2: CSO's and ASFPM's technical assistance services will be integrated with the Digital Coast platform as part of a comprehensive suite of resources for climate change adaptation.

3. Milestones, Outcomes, and Project Description

The Fellow will lead CSO's and ASFPM's partnership to enhance coastal resilience by providing technical assistance and guidance on best practices for managing property acquired and/or vacated due to climate hazards. The Fellow will do this both through conducting a comprehensive needs assessment and through leveraging the resources of CSO, ASFPM, and Digital Coast to deliver technical assistance services to coastal communities in need.

Based on a needs assessment and literature review, the Fellow will develop technical guidance and resources that will effectively prepare communities to address and manage acquired or vacated coastal properties, with a focus area contingent on the expertise and professional interests of the Fellow, the shared mission priorities of CSO and ASFPM, and coastal communities' highest priority needs. The Fellow will work with community end-users to develop an online resource that synthesizes existing

datasets, tools, case studies, and guidance documents to provide actionable steps for implementing best practices. The technical guidance will be applicable to both the communities currently confronting this management challenge as well as for the wide range of communities preparing to face these impacts in the future -- with a particular focus on rural, small, isolated, racially minoritized, and low-income communities confronting parallel and cumulative environmental justice challenges.

Task 1 - Orientation and Work Plan

Timeline: Fall 2022

In the initial phase, the Fellow will focus on working with CSO and ASFPM mentors to build expertise in the specializations of both host offices and develop their professional network among coastal and floodplain management practitioners. The Fellow will be introduced to key partners and personnel; become involved in CSO and ASFPM subcommittees, such as the Coastal Hazards Planning and Adaptation Work Group, as well as national partnerships; and investigate opportunities for collaborative projects with other Digital Coast fellows. Based on these efforts, the Fellow will design an adaptive two-year work plan, refining the goals of this proposal into a specific timeline with planned deliverables based on the Fellow's particular interests, expertise, and career goals. The work plan will clarify the Fellow's role in CSO and ASFPM work streams and identify priorities for professional networking and skill development.

Outcomes/Milestones:

- August 2022 - December 2022: Network with coastal management contacts; gather feedback on research plans through presentations at relevant meetings and workshops convened by partners.
- October 2022: Participate in the CSO Member Meeting.
- December 2022: Complete a two-year work plan, including research plan for main project, areas of responsibility in CSO and ASFPM operations, and priorities for professional development.

Task 2 - Research Needs and Best Practices for Managing Vacated Properties

Timeline: Fall 2022 to Summer 2023

During the first year of the project, the Fellow will focus on assessing the present state of the art on planning for and managing acquired or vacated properties affected by natural hazards (from sea level rise and lake level change to flooding, wildfire, landslide, tsunami, earthquake, and other hazards). The Fellow will develop a literature review and annotated bibliography, including a review of grey literature and technical guidance for communities. Using this desktop research as a foundation, the Fellow will connect with community practitioners and subject matter experts through surveys, interviews, professional conferences, or other methods as appropriate, in partnership with CSO and ASFPM member organizations and national partner networks. The Fellow will develop an outreach strategy, including methods and partners to prioritize connecting with rural, small, isolated, racially minoritized and low-income communities confronting parallel and cumulative environmental justice challenges.

The Fellow will identify three or more communities dealing with multiple-property acquisition or vacancy to develop case studies that document barriers to and best practices for managing and planning in the clear skies and post-disaster contexts, modeled on the case study format in the ASFPM/CSO CRS for Community Resilience Green Guide. The case studies will focus on highlighting effective planning and public engagement initiatives, policy changes, mitigation projects, funding sources, and regional and national partnerships. The Fellow will seek to develop studies for a diverse range of regions, strategies, and community physical and socioeconomic contexts, with at least one case study highlighting a rural, small, isolated, and/or low-income community.

Throughout this process, the Fellow will work with CSO and ASFPM to regularly consult with an advisory committee of state and local coastal and floodplain managers to ensure that the outcomes of the project remain relevant and actionable for on-the-ground practitioners. In addition, CSO and ASFPM will support the Fellow in submitting abstracts to present at relevant academic and industry conferences, such as Coastal GeoTools and the Columbia University Earth Institute Managed Retreat Conference, to contribute to the climate adaptation academic discourse and cultivate practitioner feedback.

Outcomes/Milestones:

- October 2022 - February 2023: Complete a literature review of existing research and grey literature, including an annotated bibliography of state and local resources.
- December 2022 - February 2023: Develop an Outreach Strategy to connect with a diverse range of coastal community partners and compile an internal project team list of potential case studies.
- February 2023: Provide a summary memo identifying best practices, needs, and recommendations.
- February - July 2023: Implement the Outreach Strategy through appropriate interview and survey methods.
- February - May 2023: Present findings at Coastal GeoTools conference, CSO D.C. Meeting, ASFPM Annual Conference, and other relevant events to gather practitioner feedback.
- July 2023: Complete at least two of a targeted three case studies.
- October 2023: Present proposed outline of the guidance resource at CSO Member Meeting and gather practitioner feedback.

Task 3 - Lead Development of Planning Guidance for Managing Acquired or Vacated Properties

Timeline: Fall 2023 to Summer 2024

Based on the knowledge developed and needs identified in Year 1, the Fellow will work in consultation with the advisory committee and NOAA Digital Coast to design online technical guidance resources compiling solutions for local communities to plan for and manage acquired or vacated properties at the neighborhood scale. The final product will include a toolset of resources to support communities in conducting public outreach and stakeholder engagement. CSO and ASFPM will work with the Fellow to scope the final guidance resource around the optimum intersection of 1) the expertise and professional interests of the Fellow, 2) the shared mission priorities of CSO and ASFPM, and 3) the highest priority needs identified through the Task 2 needs assessment. Depending on the Fellow's expertise, the resource may synthesize one or more interdisciplinary topic areas:

- **Design/Engineering**: property remediation and maintenance; infrastructure management; synthesizing shoreline change modeling with geographic, economic, and legal information to plan for land use changes, infrastructure impacts, and liability exposure
- **Ecological**: water quality impacts (marine debris, septic systems), habitat enhancement and open space management, erosion and geomorphology
- **Economic**: sustaining local tax revenue, funding mitigation projects, modeling property owner decision-making
- **Policy**: infrastructure planning and management, stakeholder engagement, working with holdouts and isolated properties, public access
- **Legal**: minimizing municipal liability, takings claims, moving property lines, meeting infrastructure maintenance obligations

Throughout the development process, the Fellow will leverage the advisory committee, the CSO Coastal Hazards Planning and Adaptation Work Group, CSO Legal Council, ASFPM Coastal Committee, and CSO's and ASFPM's networks of national partners to answer questions, fill gaps, and gather feedback on draft material. The Fellow will lead coordination with CSO and ASFPM members as well as non-profit partners to highlight outcomes nationally and provide a toolset of communications resources for coastal and floodplain managers to effectively inform community members about mitigation options.

The Fellow and CSO and ASFPM mentors will work with NOAA to integrate the guidance resource, including training curricula and messaging materials, into the Digital Coast platform, as part of a comprehensive suite of resources for climate change adaptation. The Fellow will work with mentors to plan for the future of the resource beyond the Fellow's two-year tenure, providing a memo on next steps to evolve the state of practice of this work beyond the fellowship. CSO and ASFPM will also explore other relevant platforms and partnerships, including the U.S. Climate Resilience Toolkit, the Georgetown Climate Center Adaptation Clearinghouse, the Climate Adaptation Knowledge Exchange, American Society of Adaptation Professionals, Sea Grant extension programs, and the Climigration Network.

Outcomes/Milestones:

- October 2023 - May 2024: Develop guidance resource.
- February - March 2024: Hold policy practitioner engagement events at CSO D.C. Meeting and Social Coast Forum 2024, including presentation of the final slate of case studies.
- May 2024: Complete full draft of guidance resource and hold expert seminar or pilot training session at ASFPM Annual Conference.
- August 2024: Complete fellowship project and lead public outreach strategy kickoff.

4. Diversity, Equity, Inclusion, and Justice

Rural, small, isolated, racially minoritized, and low-income communities are disproportionately impacted by climate hazards and struggle to bounce back after a natural disaster. CSO and ASFPM strive to incorporate the principles of Diversity, Equity, Inclusion, and Justice (DEIJ) into every aspect of their work. This project was created in response to a need to make better planning guidance available to local practitioners to confront an economically, politically, and socially challenging issue, identified by the CSO and ASFPM members who work on the ground to deliver technical assistance and funding to coastal communities. A project that is equitable, inclusive, and just in its process and products will have a meaningful impact on diverse groups of people. This project aims to meet that description and advance DEIJ by inviting diverse groups to conversations around management of abandoned or vacated property and ensure that project outcomes are accessible and useful to all end-users - especially those most vulnerable to climate hazards.

Conducting needs assessments: The Fellow will begin the project with a needs assessment focused on connecting with end-users - coastal communities - to scope project outcomes and ensure their work is applicable and accessible on the ground. The assessment will prioritize analyzing and addressing the needs of underserved or vulnerable populations in rural, small, isolated, and/or low-income communities confronting parallel and cumulative environmental justice challenges. The Fellow will work with coastal programs and floodplain managers through existing technical assistance programs to identify and connect with communities.

Developing project outcomes and scope: Project outcomes will be developed in ongoing consultation with community end-users. CSO and ASFPM will provide guidance and support to the Fellow to ensure

that the project effectively addresses compound challenges unique to historic, poor, and/or politically disenfranchised waterfront communities that have less access to state and federal adaptation resources, including back bay communities, risk-exposed communities that face redevelopment pressure, and communities that rely on working waterfronts to sustain local economies and basic public services.

Engaging project partners and working with stakeholders and targeted communities: CSO and ASFPM will build off of existing, effective partner efforts to engage community end-users. Engagements will be designed to ensure that they are inclusive and not a burden to attend, by integrating into existing trainings, meetings, etc., and by bringing value to participants by helping promote community needs and successes, disseminate project results, or connect communities to resources and funding.

Conducting outreach: To maximize the accessibility of the guidance resource to the full range of municipal end-users, it will be produced as a richly interactive web-based resource, designed to directly connect users to Digital Coast resources and national/regional/state datasets. A static PDF version will also be made available, and CSO will explore other options to enhance accessibility, including translation into other languages.

5. Fellow Mentoring

CSO and ASFPM are committed to providing the Fellow with independent responsibility, professional development support, and access to national professional networks to advance their career goals through their fellowship work. The Fellow will be based out of CSO's Washington, D.C. staff offices. Their primary mentor and project supervisor at CSO will be Policy Analyst John Ryan-Henry; they will also receive mentorship from Executive Director Derek Brockbank and work closely with all CSO staff members. Research Manager Jeff Stone will be the Fellow's primary mentor and point of contact at ASFPM. The Fellow will have primary responsibility for this major joint CSO and ASFPM project, and will therefore work closely with ASFPM staff based out of Madison, WI, remotely and at in-person meetings.

The Fellow will be a full member of the CSO staff office, working with five full-time staff and typically two to three other policy fellows, and will be expected to take responsibility for a portion of the organization's programmatic portfolio that capitalizes on the Fellow's expertise and advances their professional development in areas supporting their long-term career goals. The Fellow will have opportunities to coordinate CSO work groups such as the Coastal Hazards Planning and Adaptation Work Group or Coastal Non-Point Source Pollution Work Group, contribute to projects across all coastal issue areas, support CSO's communications strategy, and collaborate directly with CSO members in state coastal programs. They will also attend, facilitate, and/or lead CSO meetings, including two annual member meetings and other public events, and represent CSO to federal agencies and national partners. The Fellow will also have the opportunity to participate in ASFPM's projects and conferences and to work with their cohort of Coastal Management and Digital Coast Fellows to develop and implement joint projects. The Fellow's mentors will support the Fellow to achieve these responsibilities through on-the-job experience and guidance, regular fellowship and project check-ins, and access to training and professional development opportunities.

6. Office Environment

CSO follows federal and District of Columbia COVID-19 guidelines regarding health precautions and expects all staff to be fully vaccinated for in-person work. When safe and feasible, all CSO staff will work in the office full-time with an option for remote work 1-2 days per week. If/when working remotely, CSO staff, including the Fellow and mentor, will remain in contact through staff-wide and project-specific team meetings, typically over GoToMeeting but with options for other platforms, as well as one-to-one

consultation through meetings and calls. The Fellow will have a desk at the CSO staff office in Washington, D.C, and receive all workplace support: desk phone, computer and required peripherals and software, printers, and office supplies. CSO will coordinate with the Fellow to ensure they receive necessary computer equipment, software, and peripherals if/when working remotely.

7. Project Partners

CSO and ASFPM will work closely with Digital Coast Partners, CSO member coastal programs, and ASFPM member state and local floodplain managers to connect with local communities and expert practitioners. This project will build on past and ongoing efforts, including the ASFPM/CSO Multiple Loss Properties Mitigation Guide, Training & Seminar Series project, led by our current Digital Coast Fellow, the ASFPM No Adverse Impact Legal Guide for Flood Risk Management [anticipated release 2022], and the ASFPM / American Planning Institute Planning Information Exchange.

The Fellow will collaborate with national non-profit and academic partners and subject matter experts to build on and extend existing research and technical assistance products, including the Georgetown Climate Center Managed Retreat Toolkit, by addressing an open need for information on how communities can work proactively to prepare for and manage acquired or vacated coastal properties. Through existing CSO and ASFPM coordination efforts, the Fellow will also work with key contacts in federal agencies including NOAA, FEMA, and the U.S. Army Corps of Engineers to provide specific, actionable details on using federal funding programs, data, and technical resources to meet the challenge as well as to integrate new resources developed through the project into existing training and assistance efforts.

8. Cost-Share Description

CSO will provide the \$15,000 match required for the Digital Coast Fellowship (\$7,500 for each year). The source of the match will be non-federal CSO operating funds. At a minimum, CSO will cover travel and associated expenses for the Fellow to attend two CSO annual meetings in a coastal state or territory as well as two ASFPM annual conferences.

9. Strategic Focus Areas

In alignment with the strategic focus areas of the 2021 Digital Coast Fellowship Program, the following areas will be addressed through the fellowship project:

- *Healthy Coastal Ecosystems*: The project will deliver integrated data, tools, and information to guide proactive local management of ecologically sensitive, climate risk-exposed coastal properties that pass into public ownership, in partnership with federal, state, non-profit, and private partners, by mitigating debris and water system impacts, rehabilitating coastal ecosystems, and managing natural coastline processes in a legally and fiscally responsible manner.
- *Resilient Coastal Communities*: The project will provide coastal hazard- and climate change-related data, tools, guidance, training, and technical assistance for communities to approach neighborhood-scale managed and unmanaged coastal retreat in an equitable, sustainable, and proactive manner.
- *Vibrant and Sustainable Coastal Economies*: The project will promote and inform investment in planning and management strategies that reduce vulnerability and preserve community and culture in the most highly exposed coastal neighborhoods while sustaining local fiscal stability as climate change impacts local economies and government operating revenue.