

ENHANCING THE COASTAL ZONE MANAGEMENT ACT BY INTEGRATING ENVIRONMENTAL JUSTICE

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Coastal zone management is critically important for social, environmental, and economic well-being, but successful management practices must consider environmental justice implications. This is particularly important in the face of worsening climate change, especially with sea level rise and intensifying hurricanes. The primary federal statute governing coastal management practices in the United States is the Coastal Zone Management Act (“CZMA”). This article analyzes the coastal management programs of New York, New Jersey, and Massachusetts under the CZMA to determine how the statute can better guide states in incorporating environmental justice. Ultimately, this article finds that although the reports touched on some important considerations, the three states’ coastal management programs lack in-depth environmental considerations. Consequently, the CZMA and its guiding documents can and should be amended to empower states to integrate environmental justice into their coastal management programs.

INTRODUCTION

Evaluating the protection of vulnerable coastal populations against climate-induced sea level rise and storm surges is critical in assessing whether Congress should amend the Coastal Zone Management Act (“CZMA”)¹ to reflect environmental justice implications.² An important component of the CZMA is the Section 309 Enhancement Program, which encourages coastal states and territories to improve their coastal management programs in several “enhancement areas.”³ For purposes of this article, the vulnerable communities under consideration are those identified as low-income as evidenced by affordable housing. Climate Central conducted a study (hereinafter “Buchanan study”) that analyzed the

¹ Coastal Zone Management Act of 1972 §§ 302–319, 16 U.S.C. §§ 1451–1465.

² See Pacific Coastal and Marine Science Center, *Coastal Climate Impacts*, USGS (June 27, 2022),

https://www.usgs.gov/centers/pcmssc/science/coastal-climate-impacts?qt-science_center_objects=0#qt-science_center_objects [<https://perma.cc/M9Z8-QYRZ>].

³ NOAA OFF. FOR COASTAL MGMT., *Coastal Zone management Act Section 309 Program Guidance: 2021 to 2025 Enhancement Cycle 1* (2019),

https://coast.noaa.gov/data/czm/media/Sect-309_Guidance_2021-2025.pdf [<https://perma.cc/3W4U-Q84D>].

threats that coastal flooding poses to affordable housing.⁴ The study highlights that low-income communities tend to live in poor quality structures and are consequently particularly vulnerable to coastal flooding.⁵ The researchers used building footprints and probability distributions to “identify the coastal states and cities where affordable housing . . . is most at risk” of flooding.⁶ The study found that the three states with the largest number of affordable housing units exposed to extreme water levels are New Jersey, New York, and Massachusetts.⁷ Therefore, a critical assessment of these states’ CMPs is necessary for meaningful engagement in advancing environmental justice considerations. Accordingly, this article assesses the intersections between coastal management and environmental justice and correspondingly analyzes the coastal management practices of New York, New Jersey, and Massachusetts under the CZMA.

Coastal issues are progressively pervasive due to the worsening of climate change.⁸ More specifically, sea level rise and storm surges caused by climate-induced hurricanes pose significant dangers to coastal areas, particularly those in low-lying regions.⁹ Each shoreline is characterized by unique physical dynamics and erosion patterns and accordingly requires coastal management practices that cater to the shoreline’s individual needs. However, studies have revealed discrepancies between the science of shoreline dynamics and the methods used to manage them.¹⁰ This in turn leaves coastal communities increasingly vulnerable to climate impacts and therefore implicates important environmental justice considerations.¹¹

This article is divided into seven sections. Part I provides an overview of contemporary notions of environmental justice. Part II will then describe the CZMA and Part III analyzes the CZMA’s intersections with environmental justice. Parts IV through VI will assess the coastal

⁴ Maya K. Buchanan et al., *Sea Level Rise and Coastal Flooding Threaten Affordable Housing*, 15 ENV’T RSCH. LETTERS 1, 10 (2020) [hereinafter Buchanan].

⁵ *Id.*

⁶ *Id.* at 3.

⁷ *Id.* at 10.

⁸ Pacific Coastal and Marine Science Center, *Coastal Climate Impacts*, USGS, (June 27, 2022),

https://www.usgs.gov/centers/pcm/science/coastal-climate-impacts?qt-science_center_objects=0#qt-science_center_objects [<https://perma.cc/M9Z8-QYRZ>].

⁹ *Id.*

¹⁰ See e.g., James F. Tait & Ezgi Akpınar Ferrand, *Observations of the Influence of Regional Beach Dynamics on the Impacts of Storm Waves on the Connecticut Coast During Hurricanes Irene and Sandy*, in LEARNING FROM THE IMPACTS OF SUPERSTORM SANDY 69–88 (J. Bret Bennington & E. Christa Farmer eds., 2014).

¹¹ *Id.*

management programs (“CMP”) of New Jersey, New York, and Massachusetts to determine whether they adequately protect their low-income coastal populations under an environmental justice lens. More specifically, this article evaluates the states’ relevant statutes and their Assessment and Strategy reports under CZMA Section 309 to identify gaps in environmental justice considerations. Finally, Part VII posits suggestions for how the CZMA and its guiding documents can be revised to better integrate environmental justice into coastal management practices.

I. ENVIRONMENTAL JUSTICE OVERVIEW

Environmental justice is a topic of increasing prevalence that continues to permeate environmental discourse. The environmental law community has paid even more attention to environmental justice since President Biden signed Executive Order 13990 on January 20, 2021, which heavily emphasized the use of science to promote environmental justice.¹² The executive order states, in part,

[T]he Federal Government must be guided by the best science and be protected by processes that ensure the integrity of Federal decision-making. It is, therefore, the policy of my Administration to listen to the science . . . and to prioritize both environmental justice and the creation of the well-paying union jobs necessary to deliver on these goals.¹³

The public’s understanding of environmental justice continuously changes with the rise of new societal challenges. The United States Environmental Protection Agency’s Office of Environmental Justice, however, defines environmental justice as, “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.”¹⁴ The Office of Environmental Justice further explains that “[f]air treatment means no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and

¹² Exec. Order No. 13,990, 86 Fed. Reg. 7037 (Jan. 20, 2021) [hereinafter E.O. 13,990].

¹³ *Id.*

¹⁴ *Learn About Environmental Justice*, EPA,

<https://www.epa.gov/environmentaljustice/learn-about-environmental-justice> (last visited Nov. 11, 2021) [<https://perma.cc/Y978-F6YY>].

commercial operations or policies.”¹⁵ The basic premise of environmental justice is that all people should have access to a healthy environment, which highlights the need to address the disproportionate impacts of environmental degradation on vulnerable populations. The most vulnerable communities typically include low-income communities, people of color, and immigrants,¹⁶ though this article focuses on low-income communities.

II. COASTAL ZONE MANAGEMENT ACT OVERVIEW

Congress enacted the CZMA in 1972 to encourage coastal states to develop comprehensive coastal zone management plans. The CZMA emanated from growing concerns for deteriorating shorelines around the United States.¹⁷ Coastal population growth and developing coastal economic sectors added significant pressures to coastlines that warranted increased federal protection.¹⁸ The CZMA states the following as the national policy:

[T]o encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic, and esthetic values as well as the needs for compatible economic development¹⁹

States’ participation in the CZMA programs is voluntary, but states that develop and implement a comprehensive coastal management program are provided with the opportunity to attain grants from the Secretary of Commerce.²⁰ The National Oceanic and Atmospheric Administration (“NOAA”), specifically the Office of Coastal Management, is charged with

¹⁵ *Id.*

¹⁶ *Environmental Justice*, U.S. DEP’T OF HEALTH AND HUM. SERVS., <https://www.hhs.gov/environmental-justice/index.html> [<https://perma.cc/P422-EPLP>] (last visited Mar. 27, 2022).

¹⁷ EVA LIPIEC, CONG. RSCH. SERV., R45460, COASTAL ZONE MANAGEMENT ACT (CZMA): OVERVIEW AND ISSUES FOR CONGRESS 1 (2019) [<https://perma.cc/3936-E5QH>].

¹⁸ *Id.*

¹⁹ 16 U.S.C. § 1452(2).

²⁰ 16 U.S.C. § 1455.

approving states' CMPs.²¹ Once a state's or territory's coastal zone management program is approved, the state or territory becomes eligible for federal grants²² and can review federal agency activities in coastal areas within their jurisdiction.²³

The CZMA created three primary national programs: the National Coastal Zone Management Program ("NCZMP"), the National Estuarine Research Reserve System ("NERRS"), and the Coastal and Estuarine Land Conservation Program ("CELCP").²⁴ NCZMP serves to use state and territorial CMPs to balance water and land issues.²⁵ NERRS functions as field laboratories to provide information on the functionality of estuaries and the impacts humans have on them.²⁶ CELCP provides funding for state and local governments to acquire conservation easements on threatened coastal and estuarine lands.²⁷

A state or territory that wants to participate in the NCZMP must develop a CMP pursuant to section 306 of the CZMA.²⁸ States and territories decide the details of their CMPs but must adhere to relevant statutes and regulations as promulgated by Congress and NOAA.²⁹

The CZMA requires states' CMPs to identify the coastal zone's boundaries that are subject to the management program; define permissible land and water uses; include guidelines on priorities of uses in specified areas; and describe a procedure to assess shoreline erosion, including methods to control, lessen the impact on, or restore those areas impacted by coastal erosion.³⁰

²¹ *Summary of Law - Coastal Zone Management Act*, NOAA OFF. FOR COASTAL MGMT., <https://coast.noaa.gov/data/Documents/OceanLawSearch/Summary%20of%20Law%20-%20Coastal%20Zone%20Management%20Act.pdf> [<https://perma.cc/AM6A-MS43>] (last visited Nov. 12, 2021).

²² 16 U.S.C. § 1455.

²³ 15 C.F.R. § 930 (2022); *see also* 15 C.F.R. § 930.31 (2022) ("The term 'Federal agency activity' includes a range of activities where a federal agency makes a proposal for action initiating an activity or series of activities when coastal effects are reasonably foreseeable, e.g., a Federal agency's proposal to physically alter coastal resources, a plan that is used to direct future agency actions, a proposed rulemaking that alters uses of the coastal zone.").

²⁴ *Coastal Zone Management Act*, NOAA: OFF. FOR COASTAL MGMT., <https://coast.noaa.gov/czm/act/> [<https://perma.cc/R4P9-5EQY>] (last visited Nov. 12, 2021).

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

²⁸ 16 U.S.C. § 1455(a)-(c).

²⁹ LIPIEC, *supra* note 17, at 2.

³⁰ 16 U.S.C. § 1455(d)(2).

Currently, 34 of the 35 coastal states and territories in the United States participate in the NCZMP.³¹ Since the CZMA's enactment in 1972, NOAA has allocated more than \$2 billion in grants to participating coastal states.³² Additionally, “[s]tates have received amounts ranging from \$13 million to over \$106 million in grant funding, depending on factors such as how long the state has been a part of the NCZMP, the state’s size and population, and extent of the state’s applications to grant programs.”³³

Further, Section 309’s Enhancement Program of the CZMA “encourages state and territorial coastal management programs to strengthen and improve their federally approved coastal management programs in one or more of nine areas.”³⁴ These nine areas are known as “enhancement areas” and include: wetlands; coastal hazards; public access; marine debris; cumulative and secondary impacts; special area management plans; ocean and Great Lakes resources; energy and government facility siting; and aquaculture.³⁵ Enhancement Cycles last five years—the current Enhancement Cycle is from 2021 to 2025—and at the end of each cycle the states and territories will be encouraged to assess their current coastal management practices, identify problems related to the enhancement areas, and determine how to address those issues.³⁶

III. COASTAL ZONE MANAGEMENT AND ENVIRONMENTAL JUSTICE

Coastal county populations have continued to experience significant population growth since the 1970s, and in 2018, 40% of the United States’ total population lived in coastal counties.³⁷ NOAA’s Digital Coast service found a coastal county population increase of 34.8 million people between 1970 and 2010.³⁸ Notably, approximately 40% of people living in coastal counties in the United States are vulnerable populations, namely “children,

³¹ *Coastal Zone Management Programs*, NOAA: OFF. FOR COASTAL MGMT., <https://coast.noaa.gov/czm/mystate/#alaska> (last visited Nov. 12, 2021) [<https://perma.cc/BA4L-J97B>] (providing details on the state and territorial participants and explaining that Alaska initially participated in the program but withdrew in 2011).

³² LIPIEC, *supra* note 17, at 2.

³³ *Id.*

³⁴ NOAA OFF. FOR COASTAL MGMT., *supra* note 3.

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Economics and Demographics*, NOAA: OFF. FOR COASTAL MGMT. (last visited Nov. 8, 2021) <https://coast.noaa.gov/states/fast-facts/economics-and-demographics.html> [<https://perma.cc/W3F4-ELZJ>] (last visited Nov. 8, 2021).

³⁸ *Id.*

the elderly, households where English isn't the primary language, and those in poverty.”³⁹

Studies show that sea levels are rising on the east coast of the United States at a rate exceeding the global average.⁴⁰ For instance, Boston and New York may experience double the global mean sea level rise compared to other areas of the world.⁴¹ Such discrepancies are often the result of each region's coastal geography and changes in ocean and wind currents.⁴² Accordingly, local, state, and national governments must enhance coastal resiliency to protect their growing coastal populations.⁴³

Coastal resiliency means “building the ability of a community to ‘bounce back’ after hazardous events such as hurricanes, coastal storms, and flooding—rather than simply reacting to impacts.”⁴⁴ Coastal resiliency is accomplished by adequately informing and preparing communities to both adapt to sea level rise and quickly recover from intense storms and other environmental hazards.⁴⁵ Coastal resiliency is, however, inextricably linked to individual and community capacity to respond to such events, including access to resources like coastal defense mechanisms and financial support for beach restoration projects.

Accordingly, some communities will not have the financial or political resources to build coastal resiliency.⁴⁶ Studies find that many low-income populations live in areas that are vulnerable to flooding and have less capacity to recover after flooding events.⁴⁷ One reason for this disparity is that areas that are prone to flooding tend to have lower property

³⁹ *Id.*

⁴⁰ Jim Morrison, *Flooding Hot Spots: Why Seas Are Rising Faster on the U.S. East Coast*, YALE ENV'T 360 (Apr. 24, 2018), <https://e360.yale.edu/features/flooding-hot-spots-why-seas-are-rising-faster-on-the-u.s.-east-coast> [<https://perma.cc/ZSG7-D79G>].

⁴¹ *Id.*

⁴² *Coasts and Environmental Justice*, RACHEL CARSON COUNCIL, <https://rachelcarsoncouncil.org/rcc-program-on-coasts-and-the-ocean/coasts-and-environmental-justice/> [<https://perma.cc/FD59-NEU7>] (last visited Nov. 12, 2021) [hereinafter CARSON].

⁴³ *Id.*

⁴⁴ *What is resilience?*, NOAA: NAT'L OCEAN SERV. (Feb. 26, 2021), <https://oceanservice.noaa.gov/facts/resilience.html> [<https://perma.cc/ET5M-DYZP>].

⁴⁵ *Id.*

⁴⁶ CARSON, *supra* note 42.

⁴⁷ See Dalbyul Lee & Juchul Jung, *The Growth of Low-Income Population in Floodplains: A Case Study of Austin, TX*, 18 KSCE J. OF CIV. ENG'G 683, 683 (2014) (discussing the vulnerability of low-income populations to flooding in Austin, Texas).

values, which therefore attract populations seeking affordable housing options.⁴⁸ Consequently, flood-prone areas may have a lower economic capacity to recover from environmental hazards.⁴⁹

Broadly, a government might respond to sea level rise in one of two ways: (1) allow their residents to remain in their coastal homes and implement coastal management strategies, or (2) require residents to leave their homes.⁵⁰ The former option requires investments in and construction of coastal defense structures, such as sea walls.⁵¹ The latter option tends to involve the eviction of residents to reduce liability for homes vulnerable to flooding and storm surges.⁵² The first option is preferred, but low-income communities often won't be able to afford such structures and construction. Accordingly, there are important implications for environmental justice in the context of coastal management. Some low-income communities are unable to provide sufficient coastal defense mechanisms, and therefore states must protect their coastal populations from climate-related threats through critical resource allocation.

A variety of considerations are often evaluated to address environmental justice concerns. One of the most prevalent considerations in the context of coastal management is the need to provide specialized services to low-income communities.⁵³ Low-income communities are “more likely to live in floodplains and have limited resources to recover from the impacts of intensifying hurricanes, increasing flooding, and sea level rise,” primarily as the result of systemic racism.⁵⁴ While communities should plan for effective adaptation to climate-induced sea level rise and tropical storms, these events continue to cause flooding that will have disproportionate impacts on low-income communities. In particular, environmental justice communities are especially restricted in their ability to mitigate the impacts and recover afterwards.⁵⁵

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ Michael Boyer & Erica Penn, *Tidal Turmoil: Environmental Justice and Sea Level Rise in Hampton Roads: Norfolk Case Study*, 11 VA COASTAL POL'Y CTR. 1, 4 (2013) (discussing the intersections between environmental justice and sea level rise through a case study of Norfolk, Virginia).

⁵¹ *Id.*

⁵² *Id.*

⁵³ See CARSON, *supra* note 42.

⁵⁴ *Id.*

⁵⁵ See *id.*

Another important aspect of environmental justice is education and engagement.⁵⁶ Members of environmental justice communities are often excluded from the planning processes,⁵⁷ which in turn prevents them from obtaining the requisite perspective and knowledge of available resources.⁵⁸

IV. NEW JERSEY'S COASTAL MANAGEMENT PRACTICES

According to the Buchanan study's projections, New Jersey is the coastal state with the highest number of affordable housing units that will be exposed to coastal flooding based on sea level rise estimates through the year 2050.⁵⁹ In total, the study found that 6,825 affordable housing units in the state will be endangered by coastal flooding.⁶⁰ This number accounts for 3.7% of affordable housing units in New Jersey.⁶¹ Further, the study estimates that 3,066 affordable housing units will be exposed to four or more flood-risk events annually.⁶² Thus, New Jersey faces a looming public crisis should the state fail to find the requisite support for its coastal inhabitants.

A. Overview of New Jersey's Coastal Management Plan

NOAA approved the New Jersey Coastal Management Program ("NJCMP") in 1978, which is now administered by the New Jersey Department of Environmental Protection.⁶³ NOAA approved New Jersey's 2021-2025 Section 309 Assessment and Strategy in September 2020 ("NJ Assessment and Strategy").⁶⁴ Three primary state laws govern the Coastal Management Program: the Coastal Area Facility Review Act, the Wetlands Act of 1970, and the Waterfront Development Law.⁶⁵ The NJCMP is focused on "ensuring that coastal resources and ecosystems are conserved

⁵⁶ Ellen M. Douglas et al., *Coastal Flooding, Climate Change and Environmental Justice: Identifying Obstacles and Incentives for Adaptation in Two Metropolitan Boston Massachusetts Communities*, 17 MITIGATION AND ADAPTATION STRATEGIES GLOB. CHANGE 537, 537 (2012) (evaluating obstacles and incentives for adaptation in the context of coastal flooding and environmental justice).

⁵⁷ *Id.*

⁵⁸ *See id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Section 309 Assessment & Strategy*, STATE OF N.J. DEP'T ENV'T PROT. (Feb. 1, 2021), https://www.state.nj.us/dep/cmp/czm_309.html [<https://perma.cc/6WAA-ZLHJ>].

⁶⁴ *Id.*

⁶⁵ *Id.*

as a vital part of local, state and federal efforts to enhance sustainable coastal communities.”⁶⁶

New Jersey has delineated its coastal zone to encompass about 1,800 miles of coastline and have a width ranging from 100 feet to 16 miles inland.⁶⁷ The coastal zone includes both tidal and non-tidal waters, as well as inland areas and waterfronts.⁶⁸ The coastal zone consists of three different boundaries: inland, seaward, and interstate.⁶⁹

While the NJCMP is primarily administered by the New Jersey Department of Environmental Protection, it is also implemented through the Bureau of Climate Resilience Planning, the Office of Policy Implementation, the Division of Land Use Regulation, and the Office of Dredging and Sediment Technology.⁷⁰ The Bureau of Climate Resilience Planning assists New Jersey’s communities in making informed decisions regarding climate resilience by providing them with planning and technical support.⁷¹ Accordingly, NJCMP is essentially a network of numerous offices that share responsibility in managing the state’s coastline.⁷²

B. Environmental Justice Gaps in New Jersey’s Coastal Management Program

Although New Jersey’s Coastal Zone Management Rules (the “Rules”), which govern New Jersey’s coastal management practices,⁷³ do mention some themes of environmental justice, they are not explicitly addressed as environmental justice and therefore leave critical gaps in NJCMP. Notably, the 2021-2025 NJ Assessment and Strategy explains that the planning group has sent materials to environmental justice experts and will incorporate their feedback into updated materials.⁷⁴ Until then, there are numerous important items to consider. First, both the Rules and the NJ Assessment and Strategy discuss the importance of using science to make

⁶⁶ *New Jersey Coastal Management Program*, N.J. DEP’T OF ENV’T PROT. (Feb. 1, 2021), <https://www.state.nj.us/dep/cmp/> [<https://perma.cc/Q3FY-Q66T>].

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.*

⁷³ See N.J. ADMIN. CODE § 7:7-1.1 (2022).

⁷⁴ *New Jersey Coastal Management Program Section 309 Assessment & Strategy 2021-2025*, STATE OF N.J. DEP’T ENV’T PROT. 39

<https://www.state.nj.us/dep/cmp/docs/309-assessment-and-strategy-2021-2025.pdf> [hereinafter N.J. ASSESSMENT AND STRATEGY] [<https://perma.cc/KYK6-3X2T>].

decisions, but neither give express examples of how the NJCMP uses science to make specific decisions.⁷⁵ More specifically, the Rules encourage the use of “environmentally sound” practices,⁷⁶ and the NJ Assessment and Strategy aids the New Jersey Department of Environmental Protection in ensuring that best available science is being utilized throughout the state and educating the NJCMP staff and stakeholders on updated coastal science.⁷⁷ Additionally, the NJ Assessment and Strategy does frequently refer to scientific findings on sea level rise and other coastal issues from the Rutgers Science and Technical Advisory Panel.⁷⁸ However, the CMP’s collaboration model with the Science Policy Advisory Network and its language on “best available science” remains unclear.

Neither the Rules nor the NJ Assessment Strategy refer to low-income communities, which is critical to highlight and address the specific needs of these communities while ensuring they receive specialized assistance from the NJCMP. Moreover, the Rules do not explicitly reference climate change or to subsequent climate adaptation plans, which can leave coastal populations—especially environmental justice communities—vulnerable to climate-induced storms and sea level rise. However, the NJ Assessment and Strategy does mention the need to consider climate change impacts and provides that the Bureau of Climate Resilience is available to provide climate resiliency assistance.⁷⁹

Notably, the Rules and the NJ Assessment and Strategy both make an effort to educate and engage the public, which presumably includes the impacted communities. The Rules state that one of the NJCMP goals and supplemental policies is to “[c]oordinate education and outreach activities on coastal issues...and [e]ncourage coastal related education and participation opportunities for the public.”⁸⁰ The NJ Assessment and Strategy also provides assistance to locals on hazards education and outreach, and acknowledges the need to implement additional communication and outreach strategies.⁸¹ More specifically, the NJ Assessment and Strategy states it must improve “tools that effectively communicate the impacts of coastal hazards to communities.”⁸² Further, while the NJ Assessment and Strategy discusses stakeholder engagement, it

⁷⁵ *See id.*

⁷⁶ ADMIN. § 7:7-1.1(c).

⁷⁷ N.J. ASSESSMENT AND STRATEGY, *supra* note 74, at 106, 109.

⁷⁸ *Id.* at 73.

⁷⁹ *Id.* at 5.

⁸⁰ ADMIN. § 7:7-1.1(c)(8).

⁸¹ N.J. ASSESSMENT AND STRATEGY, *supra* note 74, at 116, 117-18.

⁸² *Id.* at 118.

does not discuss engagement of the low-income communities in the actual decision-making processes.

Overall, New Jersey makes a notable effort to address themes of environmental justice, but its Rules and the NJ Assessment and Strategy currently lack important considerations. More specifically, New Jersey's Coastal Zone Management Rules and the NJ Assessment do not have explicit mechanisms to assist low-income communities. New Jersey does acknowledge the need to educate and engage with the public, but they lack specific details on how to implement such strategies or on efforts to include communities in their decision-making processes. In order to address the gap in environmental protection from the lack of explicit language that addresses environmental justice communities, New Jersey has engaged environmental justice experts to assist in developing its future plans.⁸³

V. NEW YORK'S COASTAL MANAGEMENT PRACTICES

The Buchanan study identified New York as the state with the second highest number of affordable housing units expected to be exposed to coastal flooding by 2050 based on the projected sea level rise.⁸⁴ The study found that 5,293 of New York's affordable housing units will be exposed, which account for 1.1% of the state's affordable housing units.⁸⁵ Further, 867 affordable housing units are expected to experience more than four flood-risk events annually, which is 2,199 less units than estimated for New Jersey.⁸⁶

Notably, the Buchanan study identified New York City as the city with the highest number of affordable housing units projected to face coastal flooding exposure.⁸⁷ The total number of potentially vulnerable units is 4,774, which is 1,607 more than the second most vulnerable city, Atlantic City.⁸⁸ While New York State as a whole might be more insulated from harm than New Jersey, New York City faces substantial danger.

⁸³ NOAA OFF. FOR COASTAL MGMT., *supra* note 3.

⁸⁴ Buchanan, *supra* note 4.

⁸⁵ *Id.* at 10.

⁸⁶ *Id.*

⁸⁷ *Id.* at 11.

⁸⁸ *Id.*

A. Overview of New York's Coastal Management Program

The NYCMP does not appear to be governed by a particular set of statutes or rules, so this article focuses solely on New York's 2021-2025 Section 309 Assessment and Strategies ("NY Assessment and Strategies"), which was approved in May 2020.⁸⁹ NOAA approved the New York State Coastal Management Program ("NYCMP") in 1982.⁹⁰ The program is primarily administered by the New York Department of State and NYCMP is authorized by Executive Law Article 42, Waterfront Revitalization of Coastal Areas and Inland Waterways.⁹¹ The program establishes a decision-making framework for coastal management and serves to "promote the beneficial use of coastal resources and prevention of their impairment, and management of major activities substantially affecting coastal resources."⁹²

The NYCMP delineates the boundaries of the coastal zone, or the State Coastal Area; explains coastal uses and resource management; identifies areas of concern and resources; and specifies the enforceable policies that the program requires the state and federal agencies to comply with when taking actions that might affect the coast's designated uses and resources.⁹³

New York's coastal zone varies, but the inland boundary is approximately 1,000 feet from the mainland's shoreline.⁹⁴ In certain areas, including Long Island Sound, the inland boundary may extend up to 10,000 feet "to encompass significant coastal resources, such as areas of exceptional scenic value, agricultural or recreational lands, and major tributaries and headlands."⁹⁵

⁸⁹ N. Y. State Dep't. of State, N. Y. State Coastal Management Program: 309 Assessment and Strategies - July 1, 2021 Through June 30, 2025 1(May 15, 2020) <https://dos.ny.gov/system/files/documents/2021/06/nys-2021-5-yr-assessment-and-strategy.pdf> [<https://perma.cc/D8JD-SG86>] [hereinafter N.Y. Assessment and Strategy].

⁹⁰ NOAA: OFF. FOR COASTAL MGMT., *supra* note 31.

⁹¹ *Id.*

⁹² *State Coastal Management Program*, N. Y. STATE DEP'T OF STATE, <https://dos.ny.gov/state-coastal-management-program> [<https://perma.cc/IE4E-FTED>] (last visited Nov. 12, 2021).

⁹³ *Id.*

⁹⁴ *State Coastal Zone Boundaries*, NOAA: OFF. FOR COASTAL MGMT. (Feb. 9, 2012) <https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf> [<https://perma.cc/TD99-JSSN>].

⁹⁵ *Id.*

New York has four primary coastal management plans: the Long Island Sound Management Program, Long Island South Shore Estuary Reserve Program, Local Waterfront Revitalization Program, and the Statewide Shoreline Monitoring Framework.⁹⁶ The purpose of the Long Island Sound Coastal Management Program is to balance economic development with the preservation of natural resources in the Long Island Sound.⁹⁷ The Long Island Sound's coast within New York's jurisdiction includes 304 miles of shoreline across five counties: Westchester, Bronx, Queens, Nassau, and Suffolk.⁹⁸ The Long Island South Shore Estuary Reserve Program is another important component of the NYCMP.⁹⁹ This program "guides the preservation, protection, and enhancement of natural, recreational, economic, and educational resources of the estuary through partnerships with a diverse group of stakeholders including state, federal, and local organizations."¹⁰⁰

The Local Waterfront Revitalization Program is New York's primary program for partnering with waterfront communities "to address local and regional (coastal or inland) waterway issues, improve water quality and natural areas, guide development to areas with adequate infrastructure and services away from sensitive sources, promote public waterfront access, and provide for redevelopment of underutilized waterfronts."¹⁰¹

The Statewide Shoreline Monitoring Framework is sponsored by NOAA, the New York Department of State, and the New York State Energy Research and Development Authority.¹⁰² This framework establishes standardized shoreline monitoring protocols for the state of New York and subsequently aids decision makers in identifying the benefits of individual shoreline sites.¹⁰³

⁹⁶ N. Y. STATE DEP'T OF STATE, *supra* note 92.

⁹⁷ *Long Island Sound Coastal Management Program*, N. Y. STATE DEP'T OF STATE, <https://dos.ny.gov/long-island-sound-coastal-management-program-0> [<https://perma.cc/8TKJ-DSNQ>] (last visited Nov. 12, 2021).

⁹⁸ *Id.*

⁹⁹ *Long Island South Shore Estuary Reserve Program*, N. Y. STATE DEP'T OF STATE, <https://dos.ny.gov/long-island-south-shore-estuary-reserve-program> [<https://perma.cc/WS5T-E42V>] (last visited Nov. 12, 2021).

¹⁰⁰ *Id.*

¹⁰¹ *Local Waterfront Revitalization*, N. Y. STATE DEP'T OF STATE, <https://dos.ny.gov/local-waterfront-revitalization-program> [<https://perma.cc/6NLE-UMZE>].

¹⁰² *Statewide Shoreline Monitoring Framework*, N. Y. STATE DEP'T OF STATE, <https://dos.ny.gov/statewide-shoreline-monitoring-framework> [<https://perma.cc/P2NU-MT7S>] (last visited Nov. 12, 2021).

¹⁰³ *Id.*

B. Environmental Justice Gaps in New York’s Coastal Management Program

The NYCMP does not appear to be governed by a particular set of statutes or rules, so this note focuses solely on New York’s 2021-2025 Section 309 Assessment and Strategies (“NY Assessment and Strategies”), which was approved in May 2020.¹⁰⁴ Notably, the NY Assessment and Strategies mentions the use of scientists for various purposes, including to convey information to stakeholders, but it does not explicitly require the use of science to make coastal management decisions.¹⁰⁵ Additionally, the NY Assessment and Strategies includes an “Environmental Justice” section that focuses on the coastal environmental justice implications of brownfields.¹⁰⁶ More specifically, the NY Assessment and Strategies says,

In the urban areas of the state, the remaining coastal developable lands are mostly brownfields located in low-income waterfront communities. Through funding and technical assistance, [the Department of State] is actively supporting the planning for cleaning and redevelopment of brownfields to create development opportunities and increase the open space and recreation areas available to the low-income neighborhoods.¹⁰⁷

Although it is admirable that New York designated a portion of the Section 309 report to environmental justice, it focuses on the issues of brownfields and appears to lack considerations of low-income communities facing threats from flooding and storm wave damage—concerns particularly relevant to coastal habitation.

Additionally, the NY Assessment and Strategies does not contain specific climate adaptation plans. While the Section 309 report discusses the concept of climate adaptation plans in the context of the state Community Risk and Resiliency Act and the state Climate Leadership Protection Act, it

¹⁰⁴ N. Y. State Dep’t. of State, N. Y. State Coastal Management Program: 309 Assessment and Strategies - July 1, 2021 Through June 30, 2025 1 (May 15, 2020), <https://dos.ny.gov/system/files/documents/2021/06/nys-2021-5-yr-assessment-and-strategy.pdf> [<https://perma.cc/D8JD-SG86>] [hereinafter N.Y. Assessment and Strategies].

¹⁰⁵ *Id.* at 138.

¹⁰⁶ *Id.* at 38.

¹⁰⁷ *Id.*

is not included under the CZMA.¹⁰⁸ The report indicates that the coastal management plan provides assistance to locals that employ sea level rise or climate change adaptation plans but does not provide specific information on what these sea level rise or climate adaptation plans are under the NYCMP.¹⁰⁹

Lastly, the NY Assessment and Strategies reveals a gap in engagement efforts in the NYCMP.¹¹⁰ Specifically, the report say there is a need for “[c]ontinued engagement of NY coastal stakeholders to understand their concerns related to ongoing sea level rise, coastal flooding, and energy needs.”¹¹¹ It also mentions the possibility of developing a Regional Coastal Management Program that will include public engagement.¹¹² However, the report does not indicate a specific effort to engage vulnerable coastal communities in decision-making processes that otherwise may not have the means or resources to engage in a meaningful way. Therefore, while the NY Assessment and Strategies makes an effort to incorporate some environmental justice considerations, there remains room for improvement.

VI. MASSACHUSETTS’ COASTAL MANAGEMENT PRACTICES

Massachusetts has the third highest number of affordable housing units expected to be exposed to coastal flooding.¹¹³ The Buchanan study identifies a total of 4,818 affordable housing units that are vulnerable to coastal flooding and 1,272 that will be exposed to four or more flood-risk events annually.¹¹⁴ This is 405 more than in New York, even though New York has a higher overall number of at-risk affordable housing units.¹¹⁵

A. Overview of Massachusetts’ Coastal Management Program

NOAA approved the Massachusetts Coastal Management Program in 1978, and the program is primarily administered by the Office of Coastal Zone Management in the state’s Executive Office of Environmental Affairs.¹¹⁶ This office was created under Chapter 21A, section 4A of the Massachusetts

¹⁰⁸ *Id.* at 150.

¹⁰⁹ *Id.* at 30.

¹¹⁰ *Id.* at 105.

¹¹¹ *Id.*

¹¹² *Id.* at 131.

¹¹³ Buchanan, *supra* note 4.

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ NOAA: OFF. FOR COASTAL MGMT., *supra* note 31.

General Laws.¹¹⁷ Massachusetts' 2021-2025 Section 309 Assessment and Strategy ("MA Assessment and Strategy") was approved on July 1, 2020.¹¹⁸

There are 20 program policies and nine management principles that govern coastal zone activities, as enforced by Massachusetts' Executive Office of Environmental Affairs.¹¹⁹ Also, Massachusetts' coastal zone includes approximately "all land within a half-mile of coastal waters and salt marshes, as well as all islands."¹²⁰

Massachusetts' Office of Coastal Zone Management receives federal grants annually from NOAA under the CZMA¹²¹ and "emphasizes coordination, collaboration, and partnerships to address coastal issues."¹²² The Office of Coastal Zone Management published a Policy Guide that describes the office's various coastal program policies and the state's "networked approach."¹²³ More specifically, "Memoranda of Understanding (MOUs) with state agencies were executed to ensure that all relevant rules, regulations, and procedures are developed and implemented consistent with the federal approved coastal program plan."¹²⁴

The Office of Coastal Zone Management runs fifteen major coastal management programs, including Coastal Habitat, Mapping and Data Management, Ocean Management, and StormSmart Coasts - Managing Erosion and Flooding.¹²⁵ Additionally, the office administers two National Estuary Programs funded by the Executive Office of Energy and

¹¹⁷ MASS. GEN. LAWS ch. 21A, § 4A (2022),

<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleII/Chapter21A/Section4A> [<https://perma.cc/Z4F8-PJVH>].

¹¹⁸ COMMONWEALTH OF MASS.: EXEC. OFF. OF ENERGY AND ENV'L AFFAIRS: OFF. OF COASTAL ZONE MGMT., SECTION 309 ASSESSMENT AND FIVE-YEAR STRATEGY FOR CZM PROGRAM ENHANCEMENT (FY2021-2025), 1 (July 1, 2020), <https://www.mass.gov/files/documents/2021/07/09/czm-309-strategy-2021-2025-final.pdf> [<https://perma.cc/WD29-QH32>] [hereinafter M.A. ASSESSMENT AND STRATEGY].

¹¹⁹ NOAA: OFF. FOR COASTAL MGMT., *supra* note 31.

¹²⁰ *Id.*

¹²¹ *About CZM*, MASS. OFF. COASTAL ZONE MGMT., <https://www.mass.gov/service-details/about-czm> [<https://perma.cc/RF2W-CG6G>] (last visited Feb. 23, 2022).

¹²² *Id.*

¹²³ *Policy Guide*, MASS. OFF. OF COASTAL MGMT. 3 (Oct. 2011), <https://www.mass.gov/files/documents/2016/08/qc/czm-policy-guide-october2011.pdf> [<https://perma.cc/GY9W-9NLZ>].

¹²⁴ *Id.*

¹²⁵ *CZM Programs*, MASS.GOV, <https://www.mass.gov/service-details/czm-programs> [<https://perma.cc/MT9L-BX2X>] (last visited Feb. 25, 2022).

Environmental Affairs and the EPA.¹²⁶ The Buzzards Bay National Estuary Program is part of the EPA's National Estuary Program and "promote[s] implementation of the Buzzards Bay Comprehensive Conservation and Management Plan by municipalities and other stakeholders."¹²⁷ The Massachusetts Bays National Estuary Partnership collaborates with five other organizations to provide technical support to coastal communities in five designated regions.¹²⁸

B. Environmental Justice Gaps in Massachusetts' Coastal Management Program

Massachusetts' Coastal Management Program ("MCMP") under the CZMA is implemented under the Code of Massachusetts Regulations¹²⁹ and is primarily governed by the MA Assessment and Strategy.¹³⁰ The MA Assessment and Strategy places notable emphasis on the use of science in crafting the state's coastal management policies. For instance, the Office of Coastal Zone Management used input from coastal science professionals and the Ocean Science Advisory council in developing the Assessment and Strategy.¹³¹ Additionally, the report recognizes the state's need to evaluate the science and data needed to improve its management of ocean resources¹³² and highlights the office's use of science-based policies to inform the management of state and federal waters.¹³³ Overall, the MA Assessment and Strategy conspicuously uses science to inform the MCMP.

Importantly, however, the MA Assessment and Strategy does not appear to specifically address low-income coastal communities. The report does discuss "SLOSH maps" used to identify coastal areas that are particularly vulnerable to damage from hurricanes and tropical storms.¹³⁴ While there is potential for that system to be used to reference economically

¹²⁶ *Id.*

¹²⁷ *Buzzards Bay National Estuary Program*, BUZZARDS BAY, <https://buzzardsbay.org> [<https://perma.cc/8UXR-ZTP7>] (last visited Feb. 25, 2022).

¹²⁸ *Massachusetts Bays National Estuary Partnership*, MASS.GOV, <https://www.mass.gov/orgs/massachusetts-bays-national-estuary-partnership> [<https://perma.cc/U82J-HVVG>] (last visited Feb. 25, 2022).

¹²⁹ 301 MASS. CODE. REGS. 20.03 (2013), <https://www.mass.gov/doc/301-cmr-2000-coastal-zone-management-program/download> [<https://perma.cc/6MJ4-VDNV>].

¹³⁰ M.A. ASSESSMENT AND STRATEGY, *supra* note 118.

¹³¹ *Id.* at 4.

¹³² *Id.* at 102.

¹³³ *Id.* at 47.

¹³⁴ *Id.* at 15.

and socially vulnerable coastal populations, the Section 309 report does not appear to do so.

In regard to climate adaptation plans, the MA Assessment and Strategy references climate change adaptation techniques for salt marshes and promotes climate resilience in ports.¹³⁵ The report does not, however, discuss climate adaptation plans for other kinds of vulnerable coastal communities, such as those on sandy beaches. Similar to the SLOSH maps, there is an opportunity for the Office of Coastal Zone Management to extend their vulnerability assessments specifically to low-income communities as well.

Additionally, the MA Assessment and Strategy describes efforts to educate the public on marine debris and hazards.¹³⁶ The report also engages with the fishing community¹³⁷ and stakeholders,¹³⁸ and facilitates public engagement processes.¹³⁹ However, the MA Assessment and Strategy does not seem to include specific efforts to educate or engage with the low-income coastal communities, once again inadequately addressing environmental justice concerns.

VII. RECOMMENDATION TO IMPROVE THE CZMA

The discrepancies between the needs of low-income coastal communities and the coastal management programs of New Jersey, New York, and Massachusetts created under the CZMA reveal a need to amend the federal CZMA, particularly in light of intensifying storms and sea level rise. States have the opportunity to address environmental justice issues through their Section 309 reports, but they are failing to adequately do so. Accordingly, the CZMA requires a federal mandate to ensure all states incorporate these important considerations.

In summation, although the MA Assessment and Strategy did provide many references to the use of science, the Section 309 reports of New Jersey and New York seemed to lack sufficient references to the use of science to inform and enhance their coastal management programs. Additionally, and importantly, none of the Section 309 reports specifically

¹³⁵ *Id.* at 80, 95.

¹³⁶ *Id.* at 25, 66.

¹³⁷ *Id.* at 102.

¹³⁸ *Id.* at 4 (defining “stakeholders” as “a diverse mix of state, federal, and local officials, non-profit advocacy groups, and coastal science professionals . . .”).

¹³⁹ *Id.* at 7.

referenced low-income coastal communities, except in the context of brownfields found in the NY Assessment and Strategy.¹⁴⁰ Similarly, the plans did not provide sufficient information on climate adaptation plans to help prepare exceptionally vulnerable communities for worsening climate-related impacts.

The New Jersey and New York Section 309 reports (and New Jersey's Administrative Code) describe specific efforts and initiatives to educate the public on coastal issues, and particularly that the coastal management programs provide assistance for education and outreach initiatives.¹⁴¹

Yet, a significant gap in the Section 309 reports is the lack of specific efforts to engage with members of the low-income communities, particularly in decision-making processes. For instance, when public engagement efforts take place at the state agencies charged with implementing the coastal management programs, does the government provide transportation for members of the poor and low-income communities who may not have other means?

As previously noted, President Biden signed Executive Order 13990 in January 2021, which emphasized the prioritization of environmental justice and the use of science as a means of doing so.¹⁴² Significantly, that executive order was signed in 2021, but each of the 2021-2025 Section 309 reports were approved in 2020. As such, there is an important and timely opportunity for the CZMA to be amended to better prioritize environmental justice. Although coastal states participating in the CZMA may integrate environmental justice into their coastal management practices outside of their Section 309 reports, environmental justice should nonetheless be incorporated as a requirement under the CZMA to guarantee justice for low-income coastal communities.

Based upon this article's findings, there are numerous ways to incorporate environmental justice into the CZMA in accordance with President Biden's Executive Order. First, Congress can incorporate environmental justice into the CZMA's Congressional Declaration of

¹⁴⁰ N.Y. ASSESSMENT AND STRATEGIES, *supra* note 104, at 38.

¹⁴¹ ADMIN. § 7:7-1.1(c)(8); N.J. ASSESSMENT AND STRATEGY, *supra* note 74, at 116, 118; N.Y. ASSESSMENT AND STRATEGIES, *supra* note 104, at 8, 101, 136,

¹⁴² E.O. 13,990, *supra* note 12.

Policy.¹⁴³ More specifically, 16 U.S.C. § 1452(2) currently defines Congress' national policy to, in part,

encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone, *giving full consideration to ecological, cultural, historic, and esthetic values as well as the needs for compatible economic development*¹⁴⁴

An amendment to this policy may say, "...giving full consideration to ecological, cultural, historic, and esthetic values, as well as the needs for compatible economic development *and environmental justice*..."

Second, Congress can add a section to the federal statute focusing specifically on environmental justice. Doing so will emphasize the concept's importance and help decision makers conceptualize the importance of environmental justice implications and considerations. This section can enumerate the various considerations of environmental justice that state governments should consider when developing their coastal management programs. Specifically, this section should include the use of science to develop their policies and regulations and recommendations on how to effectuate related collaboration and communication. The provision should also address the need to pay particular attention to low-income communities, especially in regard to drafting climate adaptation plans and developing education and engagement initiatives.¹⁴⁵

Third, and perhaps the most effective method, especially in conjunction with the second proposal, is to add specific environmental justice requirements into the Section 309 reports. NOAA's Office for Coastal Management released an updated Section 309 Program Guidance for the current Enhancement Cycle (2021 to 2025) that assists participating states in developing their Section 309 Assessment and Strategy reports.¹⁴⁶ This guide describes the processes for the various elements of the reports, including a Summary of Recent Section 309 Achievements, Assessment,

¹⁴³ 16 U.S.C. § 1452.

¹⁴⁴ 16 U.S.C. § 1452(2) (emphasis added).

¹⁴⁵ See CARSON, *supra* note 42.

¹⁴⁶ NOAA OFF. FOR COASTAL MGMT., *supra* note 3.

Strategy, and Summary of Stakeholder and Public Comment.¹⁴⁷ This guide can be enhanced to reflect President Biden's Executive Order by either requiring an additional section on environmental justice considerations or by integrating them into the existing required sections. Either method will ensure low-income coastal communities will receive the requisite attention to protect them from worsening climate impacts. NOAA's Office of Coastal Management should withhold approval of the states' assessment and strategy reports if they fail to incorporate the required environmental justice considerations.

CONCLUSION

Following an assessment of Section 309 reports for New Jersey, New York, and Massachusetts, it remains clear that these reports inadequately address pressing environmental justice considerations. Among these considerations are the use of science to ensure effective coastal management, specific focus on poor and low-income communities as the populations in the direst need of additional assistance and resources, climate adaptation plans, education initiatives and opportunities for these community members' engagement in the decision making processes. The most significant finding is that although the evaluated reports tended to touch upon some of these considerations, there is substantial room for improvement. The need to prioritize environmental justice is becoming increasingly important in light of worsening climate impacts as well as President Biden's Executive Order announcing the federal government's commitment to environmental justice. There are a plethora of ways in which the federal CZMA can be improved to reflect that commitment and doing so will undoubtedly provide greater protections to vulnerable coastal populations.

¹⁴⁷ *Id.* at 13–14.