

**COME HELL OR HIGH WATER: EXPLORING ONE SOLUTION
FOR THREATENED OCEANFRONT HOUSES**

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This article explores potential programmatic solutions for addressing the burgeoning crisis of houses collapsing into the ocean, especially along the Outer Banks of North Carolina, as a result of decades of sea level rise, shoreline erosion, and storm activity. The article first provides background on the unique geology of the barrier islands that constitute so much of North Carolina's coast, the effects of accelerating sea level rise and coastline erosion rates on those islands and structures built there, and the coastal pollution caused by the resulting structural failures, including collapsing houses and malfunctioning septic systems. The article then describes a variety of state and federal efforts that have been implemented, primarily elsewhere, that could be useful in addressing the problem of threatened oceanfront structures on the North Carolina coast, focusing on those programs that use voluntary buyouts and demolition of threatened structures to move structures out of harm's way and return the land to the public trust. The authors conclude that, with sufficient funding, a voluntary buyout program could be a viable solution for North Carolina and identify features that may make such a program more likely to succeed in the state.

I. INTRODUCTION

Eleven houses collapsed into the ocean in the Outer Banks village of Rodanthe, North Carolina, in the three and a half years between May 2020 and November 2024, with three falling during a single week in September 2024.¹

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¹ [*Cape Hatteras National Seashore: Threatened Oceanfront Structures*](#), NAT'L PARK SERV., (listing dates and addresses of each collapse) (last updated Feb. 5, 2025) [hereinafter *Cape*

Each collapsed structure left a miles-long debris field in its wake, littering the beaches and near shore waters of Cape Hatteras National Seashore² and neighboring communities with an astonishing array and amount of hazardous materials: dangerous nail-studded boards, shattered windows and other broken glass, insulation foam, drywall, asphalt shingles, household chemicals, fiberglass shards, and items potentially containing lead and asbestos.³ Other houses in Rodanthe are damaged, leaning, and on the verge of collapse, with the ocean flowing under them at high tide.⁴ Multiple houses in nearby Buxton are nearing the same predicament.⁵ While many of the oceanfront houses on the Outer Banks have become increasingly unstable, their septic tanks have also become exposed and unmoored, often before the house collapses, directly discharging raw sewage onto public beaches and into ocean waters.⁶ This untenable situation poses extreme health and safety risks to residents of the Outer Banks and visitors to the National Seashore and will likely endanger people and wildlife for many years. As the ocean continues to erode the North Carolina shoreline, these collapses are likely the beginning of a much more widespread crisis that may eventually affect structures throughout the barrier island system of North Carolina's coastline.

These structural failures result from a combination of forces as natural barrier island migration processes are disrupted or exacerbated by accelerating sea level rise and shoreline erosion. Due to the rapid rates of shoreline erosion at Rodanthe specifically, approximately 6 to 14 feet of beachfront is being lost each year, with similarly high erosion rates elsewhere on North Carolina's Outer

Hatteras Threatened Oceanfront Structures]; Anna Phillips, [Another Outer Banks Home Falls into the Ocean. More Are Still at Risk](#), WASH. POST (Nov. 15, 2024).

² When Cape Hatteras National Seashore was established in 1953, several villages were already located on the barrier islands that constitute the Seashore, including Rodanthe, Buxton, Hatteras, and Ocracoke. The Seashore occupies the entire width of the island between villages, but at the villages, the Seashore may only occupy the land between the village and the ocean, which in some cases has been reduced by erosion to only the sand beach.

³ See, e.g., Catherine Kozak, ['Total Mess' After Third Rodanthe House in Four Days Falls](#), COASTAL REV. (Sept. 26, 2024); Catherine Kozak, [Superintendent 'Disappointed,' Unsurprised by 7th Collapse](#), COASTAL REV. (Aug. 22, 2024).

⁴ WRAL, [Oceanfront Outer Banks Homes on Verge of Collapse](#), YOUTUBE (Sept. 17, 2024).

⁵ Johnny Diaz, [Two Outer Banks Homes Collapse into the Ocean in North Carolina](#), N.Y. TIMES (Sept. 22, 2024) (noting that Rodanthe and Buxton especially face issues with houses potentially collapsing into the ocean).

⁶ WRAL, *supra* note 4.

Banks, depending on the precise location.⁷ Houses that were once comfortably built inland are now precariously perched on the sandy beach, straddling the high tide line or even situated fully on the wet sand beach in some cases. Septic tanks that may have once been adequately buried with their septic fields above the water table are now discharging human waste directly onto the sandy beach, into the ocean, or into the rising groundwater table.⁸ Threats from sea level rise, hurricanes, and erosion are only getting progressively worse as a result of climate change.

This article explores one potential solution that other states have implemented, and even more states have considered: a state program with funding dedicated to addressing oceanfront structures in danger of collapsing. The first Part provides background on the unique geology of the barrier islands that constitute so much of North Carolina's coast and the effects of accelerating sea level rise and coastline erosion rates on those islands. The second Part elaborates on the pollution caused by collapsing houses and failing septic systems on the beaches of Rodanthe and elsewhere on North Carolina's coast. The third Part describes efforts by federal agencies and other states to design and implement programs to address the problem of collapsing structures in coastal areas and riparian floodplains, most notably by voluntary buyouts and demolition of threatened structures, returning the land to the public trust. The fourth and final Part makes observations about lessons learned and features that may make such programs more likely to succeed.

⁷ Other examples of rapid erosion rates in developed areas of the North Carolina coast include: up to 11.8 feet per year on the eastern shore of Buxton, 17.6 feet per year at the southern end of Hatteras Island, 15.6 feet per year at North Topsail Island, and 15.2 feet per year at the eastern tip of Bald Head Island. See [Online GIS Layer](#), *Erosion Rates (2020) – Oceanfront*, N.C. DIV. COASTAL MGMT., (From the selection of map layers, turn on the layer labeled “Oceanfront Erosion Rates 2020 (ft/yr).”).

⁸ Catherine Kozak, [A Cycle of Septic Repairs, Washouts On Park Service Beaches](#), COASTAL REV. (Nov. 4, 2022).



Figure 1: *Debris associated with house collapse*, NAT'L PARK SERV. (Sept. 20, 2024), <https://www.flickr.com/photos/capehatterasnps/54008888455/in/album-72177720320480249> (depicting 23001 GA Kohler Court).

II. A PRIMER ON BARRIER ISLAND GEOGRAPHY AND THE EFFECTS OF GLOBAL CLIMATE CHANGE

*Water is the softest thing, yet it can penetrate mountains and earth.*⁹

North Carolina's unique Outer Banks barrier island system comprises a string of long, narrow islands along approximately 175 miles of the state's coastline.¹⁰ Additional islands and beaches in the southernmost coastal counties

⁹ LAO TZU, TAO TE CHING (4TH CENTURY BC).

¹⁰ [Outer Banks](#), NCPEDIA (last visited July 9, 2025).

bring the total to 320 miles of ocean shoreline in the state.¹¹ The barrier islands are separated from the mainland by a series of sounds and waterways and from each other by inlets connecting the Atlantic Ocean to those sounds.

An unobstructed barrier island will migrate landward over time as the tide washes over the island, carrying sand from the ocean side and depositing it on the sound side in overwash fans.¹² The construction of houses, hotels, and other oceanfront structures, however, interrupts this natural process. When people use manmade dunes, sandbags, jetties, groins, and other methods to artificially halt the landward migration of barrier islands and thereby protect oceanfront structures, they can exacerbate the erosion of the oceanside beaches.¹³ When waves cannot wash over the island, their force is focused on the oceanside shoreline, increasing erosion. These effects are felt especially strongly during hurricanes, nor'easters, and other storms.

¹¹ *Id.* (measuring from the Virginia border through Currituck, Dare, Hyde, and Carteret County). The coastlines of Onslow, Pender, New Hanover, and Brunswick Counties boast numerous islands as well, for a total of 320 miles of ocean shoreline in North Carolina. [Coastal Facts](#), N.C. BEACH, INLET AND WATERWAY ASS'N (last visited July 9, 2025); [Division of Coastal Mgmt.](#), N.C. DEP'T OF ENV'T QUALITY (last visited July 9, 2025).

¹² Stanley R. Riggs et al., [Eye of a Human Hurricane: Pea Island, Oregon Inlet, and Bodie Island, Northern Outer Banks, North Carolina](#), in AMERICA'S MOST VULNERABLE COASTAL COMMUNITIES 46–50 (Joseph T. Kelley et al., 2009) [hereinafter *Eye of a Human Hurricane*]; ORRIN H. PILKEY ET AL., THE WORLD'S BEACHES: A GLOBAL GUIDE TO THE SCIENCE OF THE SHORELINE 40, 112 (2011) [hereinafter THE WORLD'S BEACHES].

¹³ THE WORLD'S BEACHES, *supra* note 12, at 227–33 (explaining barrier island geography and migration and the effects of efforts to hold barrier islands in place, and explaining, “All over the world, we have crowded buildings up against the shoreline, right next to beaches that are widely recognized to be retreating (migrating westward). But instead of moving landward with the rising sea level as they naturally would, these beaches are forced to stay in place in order to protect the buildings”); *id.* at 230 (“[L]arge buildings will precipitate heroic attempts (that will inevitably fail) to hold the shoreline in place, and meanwhile the beach will be history”).



Figure 2: Sandbags at North Topsail Island, Julia Furr Youngman (Jan. 8, 2023) (on file with author).

The village of Rodanthe is located on a particularly unstable portion of Hatteras Island, which is a barrier island. In 1991, scientists sponsored by the North Carolina Department of Transportation studied North Carolina's barrier island shoreline to identify areas most vulnerable to erosion.¹⁴ They concluded that North Carolina's "[c]oastal highways grow more vulnerable each year as long term erosion, which includes the periodic effects of seasonal storms and hurricanes, shortens the distance

between the shoreline and the

highway."¹⁵ They identified multiple critically vulnerable areas, including several on Hatteras Island in the vicinity of the villages of Rodanthe, Buxton, and Hatteras, as well as Pea Island National Wildlife Refuge, which is located just north of Rodanthe.¹⁶ These areas have particularly high erosion rates (up to 15 feet per year) where the creation of new inlets is most likely to occur.¹⁷ Hatteras Island is already only one-quarter mile wide in some locations in the Refuge and north of Rodanthe, and generally is becoming narrower over time as the ocean and frequent severe storms erode its eastern shoreline and threaten to sever it into segments.¹⁸

Additionally, seasonal changes in wave action will ordinarily cause barrier island systems like the Outer Banks to lose sand during the winter, when wave

¹⁴ JOHN S. FISHER & MARGERY F. OVERTON, CTR. FOR TRANSP. ENG'G STUDIES, OPTIONS FOR NORTH CAROLINA COASTAL HIGHWAYS VULNERABLE TO LONG TERM EROSION 1-1 (Aug. 1991).

¹⁵ *Id.*

¹⁶ *Id.* at 5-2 to 5-8.

¹⁷ *Id.*; *Eye of a Human Hurricane*, *supra* note 12, at 44-48.

¹⁸ Cornelia Dean, *A North Carolina Lifeline Built on Shifting Sands*, N.Y. TIMES (Mar. 5, 2012).

action is stronger, and build back up again during the summer, when wave action is lower.¹⁹ Storm surges associated with tropical storms, hurricanes, and other severe weather events can move large volumes of sand from the beachfront to the sound side of a barrier island; increasingly severe storm surges associated with sea level rise and climate change exacerbate this sand loss to further increase beachfront erosion.²⁰

A system of dunes is artificially maintained on Hatteras Island to protect the state highway that runs the length of the island from erosion.²¹ Yet, those dunes prevent the ocean overwash that would otherwise deposit sand on the sound side of the island and allow it to expand westward.²² The result of the natural forces working on the island combined with efforts to shore up the road is a continual narrowing of the island and its beaches over time. The same phenomenon occurs on other barrier islands along the North Carolina coast, particularly at the northern ends of each island and in other points where erosion rates are greatest.

Accelerating sea level rise is exacerbating and disrupting these natural processes. Sea level rise is accelerating worldwide because of global warming, which is melting glaciers and ice sheets and causing thermal expansion of seawater.²³ Together these processes have caused global mean sea level to rise by 8–9 inches since the 1800s,²⁴ with “[s]ea levels off the southeastern U.S.” rising at “about triple the global average” over the past decade.²⁵ Accelerating sea level

¹⁹ Catherine Schmitt, *Sand Beach in Winter*, NAT’L PARK SERV. (last visited June 23, 2025).

²⁰ DAVID J. MALLINSON ET AL., *PAST, PRESENT AND FUTURE INLETS OF THE OUTER BANKS BARRIER ISLANDS, NORTH CAROLINA*, 1–3 (Dec. 2008).

²¹ John Tucker, *The History of the Outer Banks Dunes*, OUR STATE (Sept. 15, 2015); Robert Dolan & Paul Godfrey, *Dune Stabilization and Beach Erosion*, NAT’L PARK SERV. (1971).

²² Tucker, *supra* note 21; Dolan & Godfrey, *supra* note 21.

²³ William V. Sweet et al., *Sea Level Rise*, in CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT 334–35 (David J. Dokken et al. eds., 2017); *see generally* Christine Lynn May et al., *Ch. 9: Coastal Effects*, in FIFTH NATIONAL CLIMATE ASSESSMENT, 444–86 (A.R. Crimmins et al. eds., 2023) (discussing the impacts of sea level rise on coastal communities).

²⁴ Rebecca Lindsey, *Climate Change: Global Sea Level*, NAT’L OCEANIC ATMOSPHERIC ADMIN. (Aug. 22, 2023).

²⁵ Chelsea Harvey, *Southeastern U.S. Seas Are Rising at Triple the Global Average*, SCI. AM. (Apr. 11, 2023).

rise along the Atlantic coast of the United States will further increase coastal erosion rates,²⁶ with the Outer Banks experiencing some of the highest rates of sea level rise.²⁷

The National Oceanic and Atmospheric Administration (NOAA) 2022 Sea Level Rise Technical Report shows that under the most likely modeling scenarios, Hatteras Island will experience between approximately 1.7 to 2.1 feet of sea level rise from 2022 to 2060 and 4.0 to 5.4 feet by 2100.²⁸ Coastal erosion will also be exacerbated by other climate-induced changes such as increased storm intensity and changes in prevailing currents, both of which are projected to lead to increased erosion and beach loss. The Atlantic coast already sees more Category 4 and Category 5 hurricanes now as compared to the 1980s, and North Carolina ranks second among U.S. states for the number of tropical storms and hurricanes that have affected its shores.²⁹ Even a single hurricane or major storm can remove considerable amounts of sand from a beach, particularly if that beach was previously artificially filled.³⁰

In sum, the combination of natural barrier island migration, sea level rise, high tide flooding, subsidence, and natural sand movement throughout the year will speed up erosion, exposing more oceanfront homes to the forces that will eventually cause them to collapse into the ocean.

²⁶ See Stephen P. Leatherman et al., *Sea Level Rise Shown to Drive Coastal Erosion*, 81 EOS TRANSACTIONS AM. GEOPHYSICAL UNION 55, 55 (2000) (finding that over 80% of beaches on the U.S. east coast have experienced erosion); Roshanka Ranasinghe et al., *Climate Change Impact Assessment for Inlet-Interrupted Coastlines*, 3 NATURE CLIMATE CHANGE 83, 83 (2013).

²⁷ *Climate Change Connections: North Carolina (Outer Banks)*, ENV'T PROT. AGENCY [hereinafter "EPA"] (last visited July 10, 2025).

²⁸ *Sea Level Rise Viewer*, NAT'L OCEANIC ATMOSPHERIC ADMIN. (last visited July 10, 2025).

²⁹ David Anderson et al., *Our Changing Climate*, in THIRD NAT'L CLIMATE ASSESSMENT 20 (2014); Brian Donegan, *North Carolina Second Only to Florida for U.S. Tropical Storms and Hurricanes*, WEATHER CHANNEL (Sept. 11, 2018).

³⁰ See, e.g., Michalis I. Voutsoukas et al., *Sandy Coastlines Under Threat of Erosion*, 10 NATURE CLIMATE CHANGE 260, 260, 262 (Mar. 2, 2020) (discussing how sea level rise, climate change, and development are causing sandy beaches to erode globally); Jennifer M. Johnson et al., *Recent Shifts in Coastline Change and Shoreline Stabilization Linked to Storm Climate Change*, 40 EARTH SURFACE PROCESSES AND LANDFORMS 569, 569–71 (2014).

III. IMPACTS OF THREATENED AND COLLAPSING HOUSES ON BARRIER ISLANDS

*Water is not a solid wall, it will not stop you. But water always goes where it wants to go, and nothing in the end can stand against it.*³¹

Accelerating rates of sea level rise occurring in places with rampant coastal development being protected with hardened structures like sandbags and jetties have created a perfect storm of worsening shoreline erosion in many portions of the Outer Banks. For example, the village of Rodanthe—which was established prior to the creation of Cape Hatteras National Seashore in 1937—abuts the landward boundary of the Seashore and relies on sandbags for artificial armoring to protect against erosion.³² There, as elsewhere in the Outer Banks, artificial dunes were built to protect the highway that runs the length of the island from the tides.³³ Over time, however, the shoreline of the Seashore has eroded considerably, such that multiple Rodanthe beach homes that may once have been built landward of the sand dunes have now become stranded in the surf.³⁴ Since 2020, eleven such houses have collapsed into the ocean at the Seashore, and more are on track to follow suit.³⁵

The houses in Rodanthe were not built to withstand constant battering from the waves. Unsurprisingly, houses located at the waters' edge on swiftly eroding sections of shoreline eventually succumb to the ocean. When these houses collapse, they are broken into pieces and swept away by the tide within a few short hours, and their debris is strewn over many miles of National Seashore

³¹ MARGARET ATWOOD, *THE PENELOPIAD* 43 (2005).

³² See, e.g., 16 U.S.C. § 459 (providing for acquisition of lands not within the limits of established villages for the creation of Cape Hatteras National Seashore); 36 C.F.R. § 7.58(b)(1)(ii) (naming Rodanthe as one of the villages referred to in 16 U.S.C. § 459). Catherine Kozak, *Myriad Problems led to Rodanthe's Doomed Beach Houses*, COASTAL REV. (Dec. 2, 2022).

³³ Jeremy Markovich, *NC Highway 12 is North Carolina's Line in the Sand*, OUR STATE (Aug. 31, 2020).

³⁴ Will Thomas, *Rodanthe Home That Used to be Hundred Yards From the Water Now Sits in the Ocean*, WTKR (Sept. 11, 2024).

³⁵ *Supra* note 1.

beaches and into the ocean.³⁶ These dangerous debris fields contain nails, boards, broken glass, broken furniture, and an array of hazardous and toxic substances, including insulation foam, drywall, asphalt shingles, household chemicals, fiberglass shards, and potentially lead and asbestos.³⁷ The hazards created by one landowner allowing their home to collapse into the ocean can result in miles of beach closures that prevent summer tourists from visiting the area, and in turn adversely impact the economies of Rodanthe, Dare County, and North Carolina.³⁸ Within Cape Hatteras National Seashore, the National Park Service has been forced to use its own grant funding to clean up the home debris, as “owner-initiated cleanup efforts have not always adequately restored beaches.”³⁹

In addition to creating unsightly hazards on the beaches that are dangerous to tourists and local residents alike, this hazardous debris can have an unwanted negative cascade of effects on the marine environment.⁴⁰ The coast of Cape Hatteras hosts a unique array of marine species due to the convergence of the cold Labrador and warm Gulf Stream Currents, which represent the latitudinal range limits for many cold-water and warm-water tropical species, respectively.⁴¹ The mixing of the two currents creates an area that is particularly rich with nutrients and attracts myriad varieties of ocean life, making it one of the most biodiverse areas in the world.⁴² Some of the species that live fully or part-time in these

³⁶ News Release, Michael Barber, [After Houses Collapse, Contractors, Volunteers and National Park Service x Clean Miles of Beach at Cape Hatteras National Seashore](#), Nat’l Park Serv. (May 17, 2022). Debris that is pulled out to the ocean by heavy winds or the same wave energy that caused the house to fall in the first place can end up littering miles down the shore due to longshore drift. See [Offshore Water: Coastal Processes](#), GEOL. SURVEY IRELAND (last visited July 10, 2025).

³⁷ *Supra* note 3.

³⁸ For example, more than two-thirds of the roughly 2.86 million visitors to Cape Hatteras National Seashore in 2022 visited between May and September. See [Cape Hatteras NS](#), NAT’L PARK SERV. (last visited July 10, 2025). Additionally, total spending by visitors to Cape Hatteras National Seashore in 2022 was \$645 million. See Jennifer Allen, [NC’s Coastal National Parks Boost Economy by \\$1B in 2022](#), COASTAL REV. (Aug. 25, 2023).

³⁹ [Cape Hatteras Threatened Oceanfront Structures](#), *supra* note 1.

⁴⁰ [Why is Marine Debris a Problem?](#), NAT’L OCEANIC ATMOSPHERIC ADMIN., MARINE DEBRIS PROGRAM (Mar. 1, 2024).

⁴¹ Sam Athey, [Outreach and Action: An Update from Hope Spot Hatteras](#), MISSION BLUE (May 1, 2017), <https://missionblue.org/2017/05/outreach-and-action-an-update-for-hope-spot-hatteras/>.

⁴² [Atlantic North Carolina Outer Banks, Shining Sea](#), MARINE CONSERVATION INST., <https://perma.cc/8TSK-TYSZ> (last visited June 25, 2025).

waters include the critically endangered leatherback sea turtle, North Atlantic right whale, blue whale, and threatened loggerhead sea turtle.⁴³ In addition, numerous protected shorebird species use the beaches of Cape Hatteras for nesting, foraging, roosting, and migrating, including the threatened piping plover and other rare or protected species including terns, oystercatchers, skimmers, and pelicans.⁴⁴ Both sport and commercial fish such as red drum, bluefin tuna, king mackerel, and flounder also call the waters off of Cape Hatteras home.⁴⁵ These fish make up part of the commercial seafood industry that contributes roughly \$155 million to North Carolina's economy annually.⁴⁶

The hazardous debris left behind by collapsed oceanfront homes can injure marine life, including protected marine species, shorebirds, and commercially valuable fish, through various means, including direct contact, entanglement, and habitat alteration. Depending on each item's size and density, the marine debris created by a fallen beach house either sinks, floats (potentially washing ashore), or remains suspended in the water column.⁴⁷ The spatial distribution of debris that sinks in the water column and settles in deep ocean communities varies, with high concentrations likely accumulating in submarine canyons where the debris takes longer to break down.⁴⁸ While more is known about debris at or near the surface, more research is required to fully understand the scope of deep ocean debris and

⁴³ [*Leatherback Turtle*](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. (last updated Feb. 26, 2025); [*North Atlantic Right Whale*](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. (last updated Dec. 20, 2024); [*Blue Whale*](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. (last updated Sept. 28, 2023); [*Loggerhead Turtle: Conservation and Management*](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. (last visited July 11, 2025).

⁴⁴ [*Piping Plover*](#), FISH & WILDLIFE SERV. (last visited July 11, 2025); [*Cape Hatteras: Common and Protected Birds*](#), NAT'L PARK SERV. (last visited July 11, 2025).

⁴⁵ [*Species Profiles*](#), N.C. DEP'T OF ENV'T. QUALITY (last visited July 11, 2025) (listing common marine species found off the coast of North Carolina).

⁴⁶ Jane Harrison, [*Blue Economy: Four Big Takeaways From Our Study of North Carolina's Seafood Industry*](#), COASTWATCH (Mar. 17, 2022).

⁴⁷ [*Ocean Pollution and Marine Debris*](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. (last updated Mar. 25, 2025); [*Ten Things You Should Know About Marine Debris*](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. (last updated Oct. 10, 2017).

⁴⁸ Ivan Hernandez et al., [*Marine Litter in Submarine Canyons: A Systematic Review and Critical Synthesis*](#), 9 FRONTIERS IN MARINE SCI. 1, 3 (Sep. 2, 2022); [*Marine Debris Program: Habitat Damage*](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. (last updated Feb. 7, 2023).

its impacts on marine life.⁴⁹ Debris that floats or remains suspended in the water column can damage commercial fishing gear and can directly endanger marine life in various ways, including through entanglement with the debris or ingestion of the debris.⁵⁰ For marine life, entanglement with debris can mean death or loss of limbs,⁵¹ and ingestion of floating debris by turtles, birds, marine mammals, or fish can also be fatal.⁵² Additionally, both floating and sunken debris harm the marine environment and resident organisms by leaching or directly adding chemical pollutants to the water.⁵³ Asphalt shingles, for example, already cause a concerning amount of stormwater pollution due to runoff of small particles of asphalt and heavy metals like lead and cadmium into waterways—directly dumping the shingled roof of an entire large house into the ocean doubtlessly raises even more severe toxic pollutant concerns.⁵⁴ The debris that remains on the beach can, similarly, be hazardous to shorebirds and other beach-dwelling species, via ingestion of toxins, entanglement, physical injuries, and blocking access to foraging and nesting areas. These hazards created by marine debris only add to the stress that marine organisms are already experiencing as a result of warming oceans and other human-induced adverse habitat changes.⁵⁵

⁴⁹ Christopher K. Pham et al., *Marine Litter Distribution and Density in European Seas, From the Shelves to Deep Basins*, PLOS ONE, April 2014, at 1, 3–4.

⁵⁰ [What Are The Impacts of Marine Debris?](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. (last visited July 11, 2025).

⁵¹ [Entanglement of Marine Life: Risks and Response](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. FISHERIES (last visited July 11, 2025).

⁵² [Ingestion](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. MARINE DEBRIS PROGRAM (last updated Feb. 7, 2023).

⁵³ E.g., [What Do You Know About Talking Trash?](#), NAT'L OCEANIC ATMOSPHERIC ADMIN. MARINE DEBRIS PROGRAM (June 10, 2020) (discussing the effects of microplastics in the marine environment).

⁵⁴ See, e.g., Mingteh Chang et al., *Roofing as a Source of Nonpoint Water Pollution*, 73 J. ENV'T. MGMT. 307, 307–308 (2004) (discussing how storms and roofing runoff can impact water quality).

⁵⁵ As ocean water warms to historically high temperatures, the level of dissolved oxygen in the water decreases while the level of dissolved carbon dioxide rises, which can create acidic oxygen-depleted dead zones. [Ocean Warming](#), WOODS HOLE OCEANOGRAPHIC INST. (last updated 2024). These dead-zones can deplete phytoplankton populations—which comprise the lower portion of the marine food chain and are highly sensitive to changes in water quality and water chemistry—and result in an adverse cascade in other trophic levels such as fish and larger marine organisms like whales and dolphins. Andrew S. Brierley, *Plankton*, 27 CURR. BIOL. R478, R478, R481–82 (2017). The stress of marine debris from collapsed houses compounds the stresses from global climate change.

In addition to the physical and chemical hazards caused by structural debris from houses (e.g., board, nails, pipes, glass, and shingles) and the houses' contents (e.g., carpets, furniture, appliances, and chemicals), beachfront houses imperiled by shoreline erosion often have failing septic tanks associated with them, which create further hazards to both public health and the health of beachfront ecosystems.⁵⁶ Septic systems treat wastewater from homes in areas where traditional centralized sewer systems and wastewater treatment facilities are not available, such as on barrier islands like the Outer Banks.⁵⁷ They function by routing a home's wastewater and sewage into the buried septic tank; solids settle to the bottom of the tank while liquids are discharged via pipes into a nearby drain field.⁵⁸ Then, the liquid slowly percolates through the soil, allowing bacteria and other harmful viruses and nutrients to be filtered out.⁵⁹ However, a failure in this system can cause "untreated sewage to be released and transported to where it shouldn't be."⁶⁰ System failures can result from rising groundwater tables or surface water inundation and can result in sewage and contaminated water containing harmful coliform bacteria, viruses, and nutrient pollution being carried directly into surface waters—in the case of the homes in Rodanthe, into the ocean.⁶¹

In the case of oceanfront homes built near beaches that are rapidly disappearing thanks to sea level rise and erosion, septic tank systems that were once adequately buried with their septic fields above the water table become exposed to daily inundation by the tides. The encroaching ocean washes away the sand that had buried the tank and septic field and raises the groundwater table.⁶² In other words, many of the septic systems associated with oceanfront houses at Rodanthe are located hazardously close to the ocean, where they become prone to

⁵⁶ THE WORLD'S BEACHES, *supra* note 12, at 241–43.

⁵⁷ Will Atwater, [*NC Focuses on Helping Municipal Water and Sewer Systems, But Septic Owners Will Have to Wait*](#), NC HEALTH NEWS (Sept. 5, 2024).

⁵⁸ [*How Septic Systems Work*](#), U.S. ENV'T PROT. AGENCY (last updated Jul. 16, 2024).

⁵⁹ *Id.*

⁶⁰ [*Signs of Septic System Failure*](#), WASH. DEP'T OF HEALTH (last visited June 26, 2025).

⁶¹ See, e.g., [*Septic System Impacts on Water Sources*](#), U.S. ENV'T PROT. AGENCY (last updated Jul. 16, 2024) (discussing the impacts on water quality if septic system is not working properly); Catherine Kozak, *supra* note 8.

⁶² Kozak, *supra* note 8.

failure because of both rising groundwater from underneath and tidal flooding from above. Storms and tides can also physically damage components of a septic system, for instance by detaching pipes or breaking seals or other components.⁶³ Depending on their condition, oceanfront septic systems may be discharging human waste directly onto the sandy beach or into the ocean.⁶⁴



Figure 3: *Debris Associated with House Collapse*, NAT'L PARK SERV. (Sept. 20. 2024), <https://www.flickr.com/photos/capehatterasnps/54008888865/in/album-72177720320480249> (showing three exposed, detached septic tanks plus debris at 23001 GA Kohler).

These failing septic systems create myriad hazards. As one treatise explains, “[i]n beach communities, malfunctioning septic tanks are a big

⁶³ *Id.*

⁶⁴ *Id.*

problem,” as “untreated or partially treated sewage” containing *E. coli* and other pathogens ends up in the water and on the beaches where families swim and build sandcastles.⁶⁵ These same pathogens can harm wildlife as well as humans. For example, septic-borne pathogens can also bioaccumulate in filtering marine organisms such as oysters and cause illness in people who eat them or swim in the contaminated water.⁶⁶ Nutrient pollution from septic failures can also cause harmful algal blooms.⁶⁷ Harmful algal blooms can lead to oxygen depletion and fish kills, and toxin-producing cyanobacteria can contaminate shellfish and cause severe adverse health effects to persons exposed to the toxin.⁶⁸ The economic impacts of shutting down shellfish fisheries and beach access until the threat of pollution or algal blooms has passed “can be extensive.”⁶⁹

In sum, the harms caused by houses collapsing on eroding shorelines like Rodanthe’s extend far beyond the initial debris field on the beach. Marine debris from these houses can harm marine wildlife and habitats through both chemical and physical pollution, and the full extent of these adverse impacts to the marine environment is still being understood. The additional pollution of sewage-borne nutrients and pathogens from failing septic tanks associated with these houses further underscores the threats that these structures pose to both marine ecosystems and human health and safety if left unaddressed. Finally, the costs associated with closing beaches to deal with the debris fields left behind when houses collapse into the tide and the deterrent effect of the debris fields and septic issues themselves are harmful to local tourism-based economies. It is thus incumbent upon North Carolina and other government entities to take proactive steps to incentivize, require, or even undertake the safe removal of these imperiled oceanfront structures and their appurtenances, including septic systems, before these harms can result from their collapse.

⁶⁵ THE WORLD’S BEACHES, *supra* note 12, at 241–43.

⁶⁶ WASH. DEP’T OF ECOLOGY, [FOCUS ON FECAL COLIFORM BACTERIA](#) (Dec. 2005).

⁶⁷ [Are Late Summer Algae Blooms a Sign of Septic System Failure?](#), SUPECK SEPTIC SERV. LLC (last visited July 11, 2025).

⁶⁸ [The Effects: Dead Zones and Harmful Algal Blooms](#), U.S. ENV’T PROT. AGENCY (last updated Feb. 5, 2025); [Fish Kills and Die Offs](#), MINN. DEP’T OF NAT. RES. (last visited June 26, 2025) (describing how human activity can lead to harmful environmental effects).

⁶⁹ [Algal Blooms](#), NAT’L INST. OF ENV’T HEALTH SCIS. (last visited July 11, 2025).

IV. ADDRESSING THE CRISIS OF COLLAPSING AND THREATENED OCEANFRONT STRUCTURES

*The persistent tides – the pulse of the sea – do not discriminate;
they push against all the varied shores on Earth.*⁷⁰

In 2023, an interagency work group was formed in North Carolina “to discuss, research, and provide ideas [to] help improve management of threatened oceanfront structures.”⁷¹ Led by the Director of the Division of Coastal Management of the North Carolina Department of Environmental Quality and the Superintendent of the National Parks of Eastern North Carolina (which includes Cape Hatteras National Seashore), the work group held meetings and public workshops to identify and explore short- and long-term solutions.⁷² Experts on various topics were invited to attend the workshops, give presentations, and answer questions posed by work group members.⁷³ The public workshops focused on financial assistance opportunities, the role of public and private insurance, and legal and regulatory authorities.⁷⁴ The group’s efforts culminated in a report released in August 2024, which summarized the group’s findings.⁷⁵

The remainder of this article will focus on the report’s “Long-Term Idea 3,” which proposes that the North Carolina State Government “[c]onsider authorizing a new, state program with funding dedicated to addressing threatened oceanfront structures.”⁷⁶ The report suggests that such a program might include “matching funds,” “a public/private partnership framework for increased flexibility and efficiencies in property acquisition, removal and relocation

⁷⁰ Attributed to oceanographer Jacques Cousteau in David Krieger, *Captain Cousteau’s Legacy: Rising to Our Full Stature as Human Beings*, NUCLEAR AGE PEACE FOUNDATION (JULY 20, 1997).

⁷¹ N.C. DEP’T ENV’T QUALITY & NAT’L PARK SERV., *MANAGING THREATENED OCEANFRONT STRUCTURES: IDEAS FROM AN INTERAGENCY WORK GROUP* 1 (Aug. 2024) [hereinafter NC Threatened Structures Workgroup Report].

⁷² *Id.* at 1, 4.

⁷³ *Id.* at 4, 8, 12.

⁷⁴ *Id.*

⁷⁵ *Id.* at 1.

⁷⁶ *Id.* at 6–7.

projects,” and “[i]nnovative, market-based solutions such as conservation easements or tax credits.”⁷⁷

Federal government agencies and other state governments have already studied, developed, and even funded and implemented programs that can serve as examples and offer lessons for carrying out this recommendation.⁷⁸ As discussed below, these government entities have focused on providing for some version of buyouts or monetary incentives for the owners of at-risk buildings, designed to promote relocation or removal of the threatened structures before they collapse and cause the kind of destruction previously discussed.

A. Existing Approaches to the Problem—Federal Programs

i. *National Flood Insurance Program Amendments*

Congress created the National Flood Insurance Program (NFIP) to (1) “provide flood insurance in flood-prone areas to property owners who otherwise would not be able to obtain it and to reduce the government’s cost *after floods*,” and (2) reduce national flood risk by creating and enacting floodplain management standards.⁷⁹ The NFIP is managed by the Federal Emergency Management Agency (FEMA) and administered only to communities that participate voluntarily.⁸⁰ Participating communities “are required to adopt land use and [flood] control measures” that meet the federally designated minimum standards set by FEMA.⁸¹ Communities can adopt more stringent floodplain

⁷⁷ *Id.* at 7.

⁷⁸ *Infra* Subpart A–B.

⁷⁹ Diane P. Horn, [A Brief Introduction to the National Flood Insurance Program](#), CONG. RES. SERV. 1 (Jan. 2, 2025) (emphasis added).

⁸⁰ *Id.* Outside the scope of this paper are the effects on disaster cleanup, preparedness, and response for communities if FEMA is eliminated or if its funding is cut significantly. *See* Rebecca Hersher, [The Trump Administration Says it Wants to Eliminated FEMA. Here’s What We Know](#), NPR (June 26, 2025); Press Release, Fed. Emergency Mgmt. Agency, [FEMA Ends Wasteful, Politicized Grant Program, Returning Agency to Core Mission of Helping Americans Recovering From Natural Disasters](#) (Apr. 4, 2025) (announcing that funding under the Building Resilient Infrastructure and Communities grant program was cut). This article assumes these funding options are still available to states, Tribes, and communities going forward.

⁸¹ Horn, *supra* note 79.

management standards if they wish.⁸² Under the NFIP, participating communities must work with FEMA to develop Flood Insurance Rate Maps (FIRMs) and identify Special Flood Hazard Areas (SFHAs).⁸³ FIRMs are used to identify property owners in SFHAs and are subject to FEMA's mandatory purchase requirement, and to establish the management standards that communities must adopt.⁸⁴

Currently, the NFIP does not sufficiently address the problems faced by owners of houses on the verge of collapse along the North Carolina coast for several reasons. First, a standard NFIP policy covers only losses due to erosion-related flooding caused by “[c]ollapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water *exceeding anticipated cyclical levels*.”⁸⁵ NFIP policies do not, however, cover losses caused by “[g]radual erosion,” “[l]and subsidence” or “[d]estabilization or movement of land that results from accumulation of water in subsurface land area.”⁸⁶ Often, threatened oceanfront houses are at risk due to gradual erosion, or one of the other excluded causes, and finally collapse during tides that do not exceed typical cyclical levels—in those circumstances, coverage for the loss of the house may be denied.⁸⁷

Additionally, an NFIP policy only provides insurance payout after the home is lost. Cleaning up a home after it has collapsed and broken into parts that spread over miles of beach and into the ocean is impossible to accomplish thoroughly, and trying to do so is far more expensive and riskier than pre-emptively moving or demolishing the home.⁸⁸ Furthermore, the NFIP offers

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ Insurance Coverage and Rates, 44 C.F.R. § 61, App. A(1)(II)(B)(2) (2025) (emphasis added).

⁸⁶ *Id.* § App. A(1)(V)(C)(3), (5)–(6).

⁸⁷ *Cape Hatteras Threatened Oceanfront Structures*, *supra* note 1 (stating that oceanfront homes became at risk of collapsing due to coastal erosion).

⁸⁸ See, e.g., Reuben Jones, *As Rising Sea Levels Threaten Beach Homes, A Bill in D.C. Looks to Help Move Houses*, SPECTRUM 1 NEWS (June 19, 2024) (stating that it cost one family over \$180,000 to move their home away from the ocean); see also Catherine Kozack, *Imperiled Beach Houses a Problem Fraught with Legal Perils*, COASTAL REV. (Sept. 14, 2022) (discussing the high cost of litigating these issues and how cleanup costs off fall on communities—not property owners).

relatively low coverage for properties in expensive areas, like the North Carolina coast.⁸⁹ The NFIP covers up to \$100,000 for the contents inside a single-family home—furniture and personal belongings—and \$250,000 for the home itself, which might equate to a fraction of an oceanfront home’s fair market value.⁹⁰ Finally, the NFIP was “not designed to retain funding to cover claims for truly extreme events.”⁹¹ Instead, the NFIP was designed to borrow money from the U.S. Treasury in times of extreme disasters for unexpected or extreme weather events.⁹² As climate change worsens and natural disasters become more frequent, however, the NFIP will likely be relied on even more and become a more expensive program for ratepayers.

Previously, Congress has attempted to use legislation to encourage the removal of at-risk properties before they collapse due to flooding or erosion. In 1987, Congress passed an amendment to the NFIP known as the “Upton-Jones Amendment,” named after the bill’s sponsors, Representative Fred Upton (R-Michigan) and Representative Walter B. Jones, Sr. (D-North Carolina).⁹³ The amendment authorized payment for demolition or relocation support to NFIP policyholders who owned property that was “subject to imminent collapse or subsidence as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels,” as determined by the state or local government and FEMA.⁹⁴ If a property owner decided to demolish their at-risk property, they could receive up to 100% of the value of the property (up to policy limits) and either 10% of the value of the property or the actual demolition cost to pay for the demolition expenses, whichever is less.⁹⁵ Qualified property owners would receive 40% up front, and the remainder after they demolished the structure, including the septic system.⁹⁶ If a property owner decided to relocate

⁸⁹ See *Cost of Flood Insurance for Single-Family Homes Under NFIP’s Pricing Approach*, FED. EMERGENCY MGMT. AGENCY (showing in 2023, most insurance plans cost about \$ 0–\$ 1,000).

⁹⁰ Horn, *supra* note 79, at 1.

⁹¹ *Id.* at 2.

⁹² *Id.*

⁹³ Housing and Community Development Act of 1987, Pub. L. No. 100-242, § 544, 101 Stat. 1815, 1940 (Feb. 5, 1988) (to be codified at 42 U.S.C. § 4013 (1988)).

⁹⁴ *Id.* § 544(a). FEMA also determines the procedures state and local governments used to determine if a house was in that condition that qualified for coverage. *Id.* § 544(c)(6)(A)-(B).

⁹⁵ *Id.* § 544(c)(1)(A).

⁹⁶ *Id.* §§ 544(c)(1)(B), (c)(2).

their property—including the septic system—they could receive up to 40% of the property's value to move the it behind the 30- or 60-year setback line, not to exceed the actual cost of the relocation.⁹⁷

Though the Upton-Jones Amendment was meant to reduce the costs of the program by incentivizing owners to move or remove their imperiled homes before collapse, and thereby avoid the costly cleanup and related harms, the costs of the NFIP program continued to swell, and Upton-Jones was perceived as having only limited success.⁹⁸ Several shortcomings in the Amendment's ability to incentivize cost-saving changes in behavior became apparent.⁹⁹ For example, property owners who rented out their homes were reluctant to give up their properties while they continued to generate income.¹⁰⁰ Some owners would reportedly wait out the collapse for as long as possible and file claims under the NFIP for damage incurred to their homes in the interim, before finally seeking Upton-Jones assistance when the house was on the verge of washing away.¹⁰¹ At that point, rather than choosing to accept 40% of the house's value to relocate the structure, as Congress had intended, most owners would instead claim demolition expenses and still receive 110% of their house's fair market value, in addition to the prior claims.¹⁰² Further, there was no provision preventing communities from redeveloping properties where homes were demolished using Upton-Jones funding, so owners could retain ownership of the real estate and buy NFIP insurance for a new structure built on the same lot where another had been demolished as long as the setback requirements were met.¹⁰³ Ultimately hundreds of claims were filed under the Upton-Jones program during its short tenure,

⁹⁷ *Id.* §§ 544(c)(1)(B), (c)(5).

⁹⁸ *See, e.g.,* Catherine Kozak, *Frustrations Mount Over Imperiled Outer Banks Houses*, COSTAL REV. (Mar. 9, 2022) (stating that the Upton-Jones Amendment was “too costly” and that there is no “interest in reviving” the Amendment due to the amount of claims it received).

⁹⁹ Chris Kidder, *Federal Flood Insurance Policy Is In Transition Stage*, VIRGINIAN-PILOT (Jan. 8, 1995) (stating that the program became insolvent after 3 major storms, that it was not popular with homeowners who needed the coverage, and that for those who do need the it, it can take a long time to receive funds).

¹⁰⁰ *Id.* (“According to local officials [in North Carolina], few homeowners were interested in giving up their oceanfront homes until nature gave them no choice.”).

¹⁰¹ *Coastal Erosion and Erosion Management: Hearing Before the Subcomm. on Pol’y Rsch. & Insurance of the H. Comm. On Banking, Fin. & Urb. Aff.*, 101st Cong. 1 (1990).

¹⁰² *Id.* at 1.

¹⁰³ Housing and Community Development Act § 544(c)(5).

ensuring that many houses were moved or demolished before they could collapse into the ocean and cause the harms described above.¹⁰⁴ Yet Congress, dissatisfied with the program, ultimately repealed the Upton-Jones Amendment in 1994 and adopted the Mitigation Assistance Program in its place.¹⁰⁵

The short history of the Upton-Jones Amendment demonstrates many of the challenges that face a voluntary buyout program: incentivizing owners to part with a structure that is at imminent risk of failing but perhaps not yet uninhabitable, setting incentives at sustainable levels, timing the sale correctly, and ensuring that at-risk sites are not rebuilt. Despite its eventual repeal, the Upton-Jones Amendment still serves as a model for creating a similar buyout and relocation program at the state level. Currently, several state-run programs are in practice, or have been proposed, at the state level that attempt to build and improve upon the Upton-Jones template of using financial incentives and voluntary buyouts to preemptively remove threatened coastal structures before they collapse and cause harm.¹⁰⁶

Additionally, the Upton-Jones story may not be over at the federal level yet. In response to the recent loss of homes along the North Carolina coast, Representative Greg Murphy introduced the Prevent Environmental Hazards Act of 2024 in June 2024, and again in May 2025.¹⁰⁷ If passed, the bill would fill the gaps left behind by the repeal of the Upton-Jones Amendment, by authorizing NFIP payouts for buildings condemned due to chronic erosion or unusual flooding.¹⁰⁸ Specifically, the bill would restore the opportunity for owners of waterfront structures that have been “condemned or deemed unsafe for habitation by a State or local authority due to imminent collapse or subsidence as a result of shoreline erosion” to seek a preemptive NFIP payout to demolish or relocate the

¹⁰⁴ Kidder, *supra* note 99.

¹⁰⁵ Riegle Community Development and Regulatory Improvement Act of 1994, Pub. L. No. 103–325, §§ 552(a), 553, 108 Stat. 2160, 2269–2270 (Sept. 23, 1994) (codified at 42 U.S.C. §§ 4013(c), 4101 et seq.) (removing subsection (c) from the National Flood Insurance Act and adding a new mitigation assistance program).

¹⁰⁶ *Infra* Subpart B.

¹⁰⁷ Preventing Environmental Hazards Act, H.R. 8637, 118th Cong. (2024); Preventing Environmental Hazards Act, H.R. 3161, 119th Cong. (2025).

¹⁰⁸ H.R. 3161 § 2(e)(1).

structure.¹⁰⁹ An owner who is willing to demolish or move an at-risk home to avert future disaster would be eligible for either 40% of the home's fair market value or \$250,000 up front, whichever is less.¹¹⁰ For a demolition, the owner would either receive the remaining 60% of the value of the home or the actual cost of demolition—after the demolition is complete, including the removal of any septic systems—whichever is less.¹¹¹ However, for a relocation, the owner would only receive costs covered based on the actual cost of relocation.¹¹² As an improvement over the original Upton-Jones Amendment, the bill includes financial disincentives to prevent owners from failing to take action for more than six months after condemnation of their property or their receipt of the 40% pre-payment; the bill also limits payouts to 40% if owners neglect to act before a collapse.¹¹³ As of the writing of this article, the bill is still pending.

ii. FEMA's Hazard Mitigation Grant Program

The Hazard Mitigation Grant Program implemented by FEMA provides funding to communities to rebuild after a federally declared disaster in order to reduce future disaster losses;¹¹⁴ these grants can include funds for voluntary buyouts of affected properties.¹¹⁵ However, since Hazard Mitigation Grant funding is only available after a presidentially declared disaster, it does not function as a way to prospectively avoid the collapse of oceanfront structures before a storm hits.¹¹⁶ Nevertheless, the program can still provide valuable insights for how a prospective voluntary buyout program could work.

The city of Rancho Palos Verdes, California provides an interesting recent case study of the Hazard Mitigation Grant voluntary property buyout program.

¹⁰⁹ *Id.*

¹¹⁰ *Id.* §§ 2(e)(1)(A), 4(A).

¹¹¹ *Id.* § 2(e)(1)(A)(ii).

¹¹² *Id.* § 2(e)(1)(B).

¹¹³ *Id.* § 2(e)(2).

¹¹⁴ [*Hazard Mitigation Grant Program \(HMGP\)*](#), FED. EMERGENCY MGMT. AGENCY (last updated Apr. 24, 2025).

¹¹⁵ [*Property Acquisitions Under Hazard Mitigation Grant Program \(HMGP\)*](#), FED. EMERGENCY MGMT. AGENCY (Nov. 6, 2024).

¹¹⁶ FED. EMERGENCY MGMT. AGENCY, *supra* note 114; [*FEMA Grants for Home Acquisitions*](#), FED. EMERGENCY MGMT. AGENCY (Dec. 5, 2024).

Rancho Palos Verdes's program is being used for structures that are now at risk of collapsing due to the recent acceleration of a longstanding issue—the Greater Portuguese Bend Landslide Complex.¹¹⁷ While the landslide had been active and sliding at a rate of several inches per year for decades, land movement significantly increased following severe storm events in 2023 and 2024.¹¹⁸

Rancho Palos Verdes's voluntary buyout program received funding from FEMA through a Hazard Mitigation Grant to acquire at-risk properties from the winter storm that occurred from January 31 to February 9, 2024.¹¹⁹ The program assists property owners who are facing “the risk of imminent failure of land movement,” and invited homeowners to submit applications for the purchase of their “destroyed, damaged, or imminently at-risk” homes starting in November 2024.¹²⁰ The city is prioritizing applications for the sale of properties that are deemed: (1) most at-risk; (2) “that have been de-energized indefinitely;” (3) whose acquisition would support the City's stabilization efforts after the landslide; and (4) whose acquisition would add value to the Palos Verdes Nature Preserve.¹²¹ Additionally, the city reviews all applications to ensure they meet cost-effectiveness and environmental and historic preservation requirements, set by FEMA.¹²² If selected, the homeowner will receive a buyout offer for the pre-incident fair market value, based on the December 1, 2022 value.¹²³ However, selected property owners will only receive 75% of the pre-incident fair market value because federal requirements only allow FEMA funding to be used for 75% of the buyout cost.¹²⁴ The remaining 25% comes from a reduction in the home's fair market value, which is then held in escrow and used to pay demolition and site-restoration costs.¹²⁵ The fair market value and costs are determined by the city's appraiser; however, homeowners can file an appeal and hire their own

¹¹⁷ [*Voluntary Property Buyout Program*](#), RANCHO PALOS VERDES (last visited July 11, 2025).

¹¹⁸ [*Proclamation of a State of Emergency*](#), STATE OF CALIFORNIA EXEC. DEP'T (Sep. 3, 2024).

¹¹⁹ RANCHO PALO VERDES, *supra* note 117 (stating that the city received \$42 million in federal funding).

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.* The property owners receive the remaining balance, if any, after demolition and site restoration is complete. *Id.*

appraiser, out-of-pocket, to conduct an independent appraisal if they disagree with the city's appraisal.¹²⁶ Following the sale of the property, the structures will be demolished and the land maintained as open space.¹²⁷

Since the Rancho Palos Verdes program is still in its early stages, there is no evidence of its success, though its structure appears to create a win-win situation wherein owners of unstable houses are able to divest themselves of risky properties, likely at higher prices than they might obtain in the market, and the city both avoids the harms associated with the houses ultimately collapsing and can add to its nature preserve—supporting land stabilization efforts even further. As of May 2025, 23 properties have been approved for purchase through the program.¹²⁸

Notably, the program does not provide significant administrative support to landowners selling their property to the city, which is cited as one of the most beneficial factors of New Jersey's Blue Acres program discussed below.¹²⁹ Likewise, the Rancho Palos Verdes buyout program also does not provide assistance with relocation costs—though it may provide financial assistance for tenants if they are displaced by a property owner's decision to sell.¹³⁰ In addition, since the city's plan implements the Hazard Mitigation Grant Program's cost-sharing requirement by requiring sellers to accept a 25% reduction in their home's pre-disaster fair market value, this may affect who applies for the property buyout.¹³¹ While this provides a strong financial incentive to voluntarily sell homes that have been so badly damaged or imperiled that their fair market values have significantly decreased, it would be less likely to incentivize the sale of properties, like beachfront houses, that may continue to have high market values despite increasing risks of imminent collapse.¹³² Finally, this program is

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ *Id.*

¹²⁹ *Infra* notes 140–152.

¹³⁰ RANCHO PALO VERDES, *supra* note 117.

¹³¹ *Id.*

¹³² See, e.g., Yursa Frazan, [*Rancho Palos Verdes Homes Continue to Slide into The Ocean, But The Destruction Could Have Been Avoided*](#), LAIST (Feb. 26, 2025) (stating that one home is listed for more than \$2 million, despite its movement due to landslides).

noteworthy as it is implemented at the local level, not the state level. This point of comparison will be helpful to determine whether voluntary buyout programs are more likely to succeed at the local level, compared to the implementation of voluntary buyout programs at the state level.

B. Existing Approaches to the Problem—State Programs

i. New Jersey's Blue Acres Program

New Jersey's voluntary buyout program, the Blue Acres Buyout Program (Blue Acres), is perhaps the most well-established state program of its kind. Blue Acres has been in place since 1995.¹³³ The program's extensive experience with New Jersey communities and the extensive support it provides to individual participants have made the program successful in promoting resiliency in responding to, preparing for, and recovering from disasters.¹³⁴ The New Jersey Department of Environmental Protection (DEP) runs the Blue Acres program and works with local governments to "relocat[e] New Jersey families whose homes are subject to repeated flooding and acquir[e] property for use as natural flood storage, parks, and community open space."¹³⁵ DEP achieves this objective by buying at-risk, flood-prone properties—whether oceanfront, in a floodplain, or otherwise—at fair market value from willing homeowners.¹³⁶

After a property is acquired through Blue Acres, any structure remaining on the property is demolished and the land is maintained as open space for recreation, wetlands management, wildlife habitat, flood water storage, buffers for nearby structures, or other disaster risk reduction uses.¹³⁷ For this reason, the

¹³³ KATIE SPIDALIERI ET AL., *State of New Jersey: Blue Acres Buyout Program*, in MANAGING THE RETREAT FROM RISING SEAS, GEORGETOWN CLIMATE CTR. 75, at 1(2020).

¹³⁴ *Id.* at 1–2.

¹³⁵ *Blue Acres*, N.J. DEP'T OF ENV'T PROT. (last visited July 14, 2025).

¹³⁶ SPIDALIERI ET AL., *supra* note 133, at 2–3; *Assembly Agriculture and Natural Resources Committee Statement to S. No. 2920*, 2019 Leg., 219th Sess. 3 (N.J. 2019) [hereinafter *Assembly Statement*] (stating that the Blue Acres program purchases at-risk and damaged properties to protect other open spaces).

¹³⁷ *Assembly Statement*, *supra* note 136, at 3; *Blue Acres: Information for Local Governments*, N.J. DEP'T OF ENV'T PROT. (last visited July 14, 2025).

program prioritizes buying neighborhoods and clusters of homes.¹³⁸ The program evaluates neighborhoods using objective, measurable criteria to decide where to conduct buyouts. Factors considered when determining whether a neighborhood should be purchased include: (1) whether the neighborhood has a high concentrations of homes that have experienced severe damage from a recent storm or submitted repetitive flood insurance claims, (2) whether the community is vulnerable to climate change, and (3) whether the community is disproportionately impacted by flooding.¹³⁹ However, residents within an affected neighborhood are not required to sell all together; rather, individual homeowners make the decision whether or not to sell to the state, and no homeowners are forced to sell their properties.¹⁴⁰

The program is primarily funded by the state, though the program has received significant federal funding from FEMA's Hazard Mitigation Grant Program, the U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant-Disaster Recovery program (CDBG program), and the U.S. Department of Agriculture's Natural Resources Conservation Service following disasters such as Superstorm Sandy.¹⁴¹ Due to funding coming from multiple sources, the amount of funds fluctuates, as do limitations on what they can be used for, making it difficult for interested property-owners to determine eligibility and benefits.¹⁴² To minimize the impacts of these discrepancies on property-owners, the program provides extensive administrative support—including case managers who work directly with participants and a financial team that negotiates with banks and other lenders on behalf of the homeowners.¹⁴³

¹³⁸ SPIDALIERI ET AL., *supra* note 133, at 1, 4.

¹³⁹ N.J. DEP'T OF ENV'T PROT., [BLUE ACRES HOMEOWNERS FREQUENTLY ASKED QUESTIONS](#) 1 (July 24, 2024).

¹⁴⁰ *Id.*

¹⁴¹ [3 Years Long, 3 Years Strong: New Jersey's Successful Approach to Purchasing Homes Along Sandy's Flooded Path](#), FED. EMERGENCY MGMT. AGENCY (last updated Feb. 11, 2021).

¹⁴² SPIDALIERI ET AL., *supra* note 133, at 3 (noting that different federal and state funding has different criteria).

¹⁴³ *Id.*

There is no singular event that triggers a homeowner's eligibility to apply for a buyout, however, after a natural disaster, damaged properties may be prioritized over other applications.¹⁴⁴ Eligible homeowners include those who have suffered structural damage from recent storms, are subject to repetitive flooding, or are determined to be vulnerable to climate change. Once an owner submits a buyout application, the state hires an independent appraiser to appraise the property to determine the basis of a purchase offer based on the pre-flood value of the home.¹⁴⁵ The property owner can appeal the state's appraisal offer and pay to have their own appraisal done by a third-party.¹⁴⁶ The state will then hire a third appraiser and will factor in the updated appraisals into a new offer, which cannot be negotiated.¹⁴⁷ Further, any buyback offer will be reduced based on any other benefits that a homeowner may have received for repairs to a damaged home such as insurance proceeds, and may be increased by "additional assistance or incentives" based on eligibility criteria.¹⁴⁸

Seen by some as a "national model for flood buyouts," the New Jersey Blue Acres program has bought over 1,100 at-risk properties to demolish and convert to open space that will benefit the public as of mid-2024.¹⁴⁹ This success is due in large part to the administrative and financial support the program provides to all potential sellers; case managers work directly with participants to ensure that all their questions and concerns are addressed, prior to the sale, and a financial team negotiates with banks and other lenders on behalf of the homeowners.¹⁵⁰ In addition to these case managers and financial support staff, Blue Acres also has a liaison in each municipality to ensure coordination between the state, municipalities, and communities.¹⁵¹ Lastly, Blue Acres also has a separate team that assists tenants with relocation after a rental property is sold through the program and potentially provides tenants with financial assistance to

¹⁴⁴ N.J. DEP'T OF ENV'T PROT., *supra* note 139, at 1 (stating that communities impacted by storms is one of the criteria considered by DEP).

¹⁴⁵ [Blue Acres Appraisals](#), N.J. REALTY ADVISORY GRP. LLC (last visited Jul. 2, 2025).

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ N.J. DEP'T OF ENV'T PROT., *supra* note 139, at 2–3, 5.

¹⁴⁹ Press Release, N.J. Dep't of Env't Prot., [New Jersey's Approach to Flood Buyouts Earns National Attention](#) (May 16, 2024).

¹⁵⁰ SPIDALIERI ET AL., *supra* note 133, at 3.

¹⁵¹ *Id.*

relocate outside of a flood zone.¹⁵² The administrative support and individualized attention available to potential sellers ensure that their questions are answered. Given the widespread success of the program, New Jersey recently decided to expand support for the program by funding a portion of it through state corporate taxes.¹⁵³

ii. *Louisiana's Restore Louisiana Program*

Louisiana's voluntary buyout program, "Restore Louisiana Homeowner Buyout Program" (Restore Louisiana), aims "to reduce the risk of property damage from future disasters while strengthening community resilience through improved local drainage that facilitates natural watershed."¹⁵⁴ The program achieves this goal by "moving [homeowners] out of harms way and reduc[ing] future flood risk."¹⁵⁵ The program is administered by the Louisiana Office of Community Development, and is funded through the CDBG program and subject to that program's restraints.¹⁵⁶ Thus, funding for repairs or buyouts through the program is available only to homeowners with properties that have been damaged by certain federally-designated storms; currently eligibility is restricted to victims

¹⁵² DIV. DISASTER RECOVERY & MITIGATION, [BLUE ACRES CDBG-DR REQUIREMENTS](#) 3 (Feb. 2023) (stating that through funding from the U.S. Department of Housing and Urban Development ("HUD"), Blue Acres can provide assistance for displaced tenants).

¹⁵³ *Assembly Statement*, *supra* note 136, at 1–3.

¹⁵⁴ [Restore Louisiana Homeowner Buyout Program: Housing](#), RESTORE LA. [hereinafter *Restore Louisiana Housing*] (last visited July 14, 2025). In recent years, the relocation of the Isle de Jean Charles Biloxi-Chitimacha-Choctaw Tribe has gained national attention after the Louisiana Office of Community Development was awarded a \$48 million federal grant in 2016 to relocate virtually the entire community, which had lost 98% of its land to coastal erosion, to a new location. Since the 1830s, when they forcibly relocated from the mainland, the Tribe has resided in the small coastal town of Isle de Jean Charles. Unfortunately, a combination of sea level rise, erosion, and land subsidence are now once again displacing the Tribe. The source of that funding opportunity, a competition run by the HUD, and the complex equity concerns of modern tribal relocations, are beyond the scope of this article, but for more information on this relocation effort, see Lucy Sherriff, [This Louisiana Town Moved to Escape Climate-Linked Disaster](#), BBC (Jan. 30, 2024); Robynne Boyd, [The People of the Isle de Jean Charles Are Louisiana's First Climate Refugees—but They Won't Be the Last](#), NAT. RES. DEF. COUNCIL (Sep. 23, 2019).

¹⁵⁵ *Restore Louisiana Housing*, *supra* note 154.

¹⁵⁶ LA. OFF. OF COMM. DEV. DISASTER RECOVERY UNIT, [RESTORE LOUISIANA HOMEOWNER ASSISTANCE PROGRAM POLICY MANUAL](#) 13 (Jan. 14, 2025) [hereinafter RESTORE LOUISIANA MANUAL]. Since the program is federally funding, all buyouts are subject to federal conditions and eligibility criteria. *Id.* at 14.

of Hurricanes Laura and Delta (2020), Hurricane Ida (2021), May 2021 Severe Storms, and Hurricane Francine (2024).¹⁵⁷ Eligibility is determined by factors such as: income, age, disability, the level of damage the property has incurred, whether the property is in a high-risk flooding zone, and whether the homeowner has already completed the repairs.¹⁵⁸ Thus, this process prioritizes low- to moderate-income homeowners.¹⁵⁹ Eligible homeowners can apply for assistance to: (1) work with a program-managed contractor or hire their own contractor to repair their home, if it is not in a flood zone; (2) be reimbursed for repair work they have already completed; or (3) sell their property to the state to be torn down.¹⁶⁰

The voluntary buyout option is available only to homeowners located in areas determined to be high risk by Restore Louisiana and the federal government.¹⁶¹ Restore Louisiana does not allow funding to be used for properties that are second homes or for rebuilding homes located in a designated flood zone.¹⁶² Buyouts are awarded at the “current fair market value of the property, . . . determined at the time” Restore Louisiana appraises it.¹⁶³ After a property is purchased through this option, the structures on the property are demolished.¹⁶⁴ Further, Restore Louisiana provides financial relocation assistance, called the Safe Housing Incentive, to homeowners who move to safer areas (outside of flood zones) following the sale of their home; the maximum amount a homeowner can receive between the relocation assistance and voluntary buyout pay cannot exceed \$250,000.¹⁶⁵ Additionally, the new home purchased with this incentive does not need to be in Louisiana, it just has to be outside of federally-designated flood zones.¹⁶⁶ Any additional funding made available to a homeowner—from FEMA,

¹⁵⁷ *Id.* at 13. For those affected by Hurricane Francine, initial surveys were due by August 1, 2023, and they had until March 31, 2025 to file applications. [FAQs](#), RESTORE LA. (last visited Jul. 3, 2025).

¹⁵⁸ RESTORE LOUISIANA MANUAL, *supra* note 156, at 19.

¹⁵⁹ *Id.* at 20–25.

¹⁶⁰ *Id.* at 16–17.

¹⁶¹ *Restore Louisiana Housing*, *supra* note 154.

¹⁶² *Id.*

¹⁶³ RESTORE LOUISIANA MANUAL, *supra* note 156, at 117–18.

¹⁶⁴ *Id.* at 117.

¹⁶⁵ *Id.* at 118–19.

¹⁶⁶ *Id.* at 125.

insurance, or any other source—for the replacement or buyout of a home, will be deducted from the reimbursement and relocation payment received.¹⁶⁷ If a homeowner is determined to be eligible and is not satisfied with the award the program initially offers them, the owner can appeal the award within 60 days of receiving it—although this could potentially result in a decrease in the award amount.¹⁶⁸ Unlike New Jersey’s Blue Acres program, Restore Louisiana does not provide additional administrative support to assist homeowners in navigating the process of selling their home and finding a new place to live—only assistance for repairs is available to homeowners from the state.¹⁶⁹ Restore Louisiana began as a response to severe flooding events in 2016 and was expanded to include homeowners affected by Hurricanes Laura, Delta, and Ida, and a severe storm in 2021. The recent expansion imposed a deadline for filling out the initial survey by August 1, 2023, and submitting applications by March 31, 2025.¹⁷⁰

Restore Louisiana has many of the same features as New Jersey’s Blue Acres. Unlike Blue Acres though, Restore Louisiana bases the appraisal and offer on the value of the house at the time of the appraisal, not necessarily the pre-storm value—likely resulting in far lower offers that could disincentivize homeowners from selling.¹⁷¹ The program has not been as popular as Blue Acres and has been criticized for serving too few people—reportedly, as of October 2019, an earlier iteration of the program resulted in only 144 buyouts of the 580 eligible homeowners who initially expressed interest.¹⁷² Reasons that others chose not to follow through included: the low purchase price cap (\$250,000), the depressed valuations of the houses, the likely unreimbursed expense associated with moving and purchasing a replacement house in a non-flood-prone area, and the length of time for federal assistance to come through (with Louisiana taking longer than other states).¹⁷³ Due to these drawbacks, Louisianans have been more likely to apply for the available funds to repair their existing homes than for full buyouts—

¹⁶⁷ *Id.* at 122–23.

¹⁶⁸ *Id.* at 232.

¹⁶⁹ *Id.* at 50–51.

¹⁷⁰ *Restore Louisiana Housing*, *supra* note 154.

¹⁷¹ RESTORE LOUISIANA MANUAL, *supra* note 156, at 117.

¹⁷² Elizabeth Crisp, [*Stay or Go? Help Available for Frequently Flooded Louisianians But Hurdles Limit Participation*](#), THE ADVOCATE (Oct. 20, 2019).

¹⁷³ *Id.*; Brittany Weiss, [*Buyouts Continue Following 2016 Flood*](#), WBRZ NEWS (Jan. 30, 2020).

in 2020, about \$675 million in grant funds were paid to approximately 17,600 homeowners for repairs, in contrast to the 144 buyouts accepted.¹⁷⁴ As a result, those homeowners choosing to repair their homes, instead of selling, remain in harm's way during the next flood, and the State has lost the opportunity to obtain more land for public green space and flood resiliency—at least for the time being.

iii. Washington's Floodplains by Design

Washington State takes an innovative approach to addressing riparian flooding through a public-private partnership called “Floodplains by Design;” the program provides grants and technical support to “reduce flood risk, restore habitat, improve water quality, support agriculture, and enhance recreation.”¹⁷⁵ Though not a buyout program aimed at threatened oceanfront structures, its purpose and design to protect riparian homeowners from flood risk provide useful information. The Washington Department of Ecology administers the program with the nonprofit Bonneville Environmental Foundation through a competitive grant program to fund projects that “support integrating flood hazard reduction with ecological preservation and restoration.”¹⁷⁶ To date, funding for projects has come from a variety of federal grants, state and local government appropriations, private companies, and nonprofits.¹⁷⁷ Additionally, since 2013, the Washington State Legislature has appropriated over \$359 million to support Floodplains by Design projects, which includes funding from Washington's 2021 “Climate Commitment Act”—which established the state's Cap and Invest program.¹⁷⁸ A unique feature of the Climate Commitment Act is the requirement to consult with

¹⁷⁴ Weiss, *supra* note 173.

¹⁷⁵ [Floodplains by Design: Reducing Risk, Restoring Rivers](#), DEP'T OF ECOLOGY (last visited July 14, 2025).

¹⁷⁶ [Floodplains by Design](#), DEP'T OF ECOLOGY (last visited July 14, 2025).

¹⁷⁷ THE NATURE CONSERVANCY, [FLOODPLAINS BY DESIGN: TOWARD A NEW PARADIGM, INTEGRATED FLOODPLAIN MANAGEMENT STATUS REPORT](#) 4–6, 11 (June 2018) [hereinafter FLOODPLAINS BY DESIGN REPORT]. Specifically, these include the Washington Department of Ecology, the Environmental Protection Agency's Habitat Strategic Initiative, the National Oceanic and Atmospheric Administration, the Puget Sound Partnership, The Nature Conservancy, The Boeing Company, the National Fish and Wildlife Foundation, and The Russell Family Foundation. *Id.* at ii, 11.

¹⁷⁸ DEP'T OF ECOLOGY, *supra* note 176; Greenhouse Gas Emission—Cap and Invest Program, S.B. 5126 §§ 28, 30(2)(a)(iv), 67th Leg., 2021 Reg. Sess. (Wash. 2021) [hereinafter SB 5216 (Wash. 2021)].

Tribes; applicants seeking funding to reduce flooding risk must share information and consult on proposed projects with Tribal partners, and state agencies administering grant programs must consult with federally recognized Tribe on proposed projects.¹⁷⁹

Floodplains by Design reviews proposals to reduce flooding risks submitted by Tribes, local governments, and other entities across the state.¹⁸⁰ In some instances, these plans include property acquisitions and buyouts of homes in high flood-risk areas.¹⁸¹ However, each approved and funded plan varies, so there is no uniform guidance from the state on which properties should be prioritized in buyout programs (e.g., neighborhoods or individual homes).¹⁸² The program is implemented by the grant recipient, so the administration of each program is largely subject to the recipient entity's discretion (including the buyout price, level of administrative support, and any appeals process for property appraisals).¹⁸³ Notably, Floodplains by Design only allows voluntary sales and forbids land acquired through eminent domain or condemnations.¹⁸⁴ The program also provides financial assistance with relocation, though it does not provide specific administrative support for that process.¹⁸⁵

This program has been successful since its implementation in 2013. Floodplains by Design has removed or reduced flood risk for 12,885 homes or structures; restored or protected 176 miles of rivers; and created or improved 44 public recreation areas, among other accomplishments.¹⁸⁶ However, its success hinges on the support of its local nonprofit and corporate partners. To implement a similar program elsewhere, supportive nonprofits that could provide requisite technical experience and sufficient corporate or state funding would be necessary.

¹⁷⁹ SB 5216 § 6 (Wash 2021).

¹⁸⁰ See, e.g., DEP'T OF ECOLOGY, *supra* note 176 (showing among applications submitted for the 2025–2027 funding cycle, applications from cities, public water systems, Tribe, and Nonprofits).

¹⁸¹ *Id.*; FLOODPLAINS BY DESIGN REPORT, *supra* note 177, at A-1–A-2, A-15–A-17.

¹⁸² [Grants & Loans Guidance and Forms](#), DEP'T OF ECOLOGY (last visited July 14, 2025) (stating that each grant recipient is in charge of implementing and managing their grant).

¹⁸³ *Id.*; DEP'T OF ECOLOGY, [FLOODPLAINS BY DESIGN GRANTS FUNDING GUIDELINES 2023-25](#) 23–24 (Oct. 2021).

¹⁸⁴ *Id.* at 24.

¹⁸⁵ *Id.*

¹⁸⁶ DEP'T OF ECOLOGY, *supra* note 176.

iv. New York's Blue Buffers Program

In 2024, New York State created a voluntary buyout program called the Blue Buffers Voluntary Buyout Program (Blue Buffers).¹⁸⁷ The program is funded entirely by the “Clean Water, Clean Air, and Green Jobs Environmental Bond Act of 2022” (EBA)—which provides \$4.2 billion for projects that protect “water quality, help communities adapt to climate change, improve resiliency and create green jobs.”¹⁸⁸ Of the \$4.2 billion available in funding from EBA, up to \$250 million may be dedicated to voluntary private property buyouts.¹⁸⁹ Any state agency, municipality or nonprofit organization may use EBA funds to: (1) purchase private real property identified as at-risk to flooding from willing sellers, based upon the “pre-flood fair market value of the subject property;” (2) “demolish and remov[e] structures and/or infrastructure on the property;” and (3) “restor[e] natural resources to facilitate beneficial open space, flood mitigation, and/or shoreline stabilization.”¹⁹⁰ Only owners of property located in areas that are at risk of flooding are eligible for a buyout.¹⁹¹ Property that qualifies as “at-risk of flooding” includes: (1) property within the FEMA flood-insurance map’s 100-year floodplain, (2) property that would otherwise qualify for a FEMA post-emergency buyout, (3) property that has been identified in a government study as “suitable for the location of a flood risk management or abatement project in areas immediately proximate to” waterways, and (4) property that has been determined

¹⁸⁷ Press Release, Governor Kathy Hochul, [Governor Hochul Announces Comprehensive Resiliency Plan to Protect New Yorkers From Extreme Weather](#) (Jan. 9, 2024).

¹⁸⁸ *Clean Water, Clean Air and Green Jobs Environmental Bond Act*, STATE OF N.Y. (last visited July 14, 2025); N.Y. DEP’T ENV’T CONSERVATION, [CLEAN WATER, CLEAN AIR AND GREEN JOBS ENVIRONMENTAL BOND ACT OF 2022: ANNUAL REPORT TO THE GOVERNOR AND LEGISLATURE 2](#) (2024).

¹⁸⁹ N.Y. ENV’T CONSERV. LAW § 58-0301 (“Not more than two hundred fifty million dollars (\$250,000,000) of this amount shall be available for projects pursuant to [purchase private real property under] subdivision two of section 58-0303 of this title.”); see *New York Environmental Bond Act: Funding Overview*, STATE OF N.Y. (last visited July 14, 2025) (under “Funding Allocation” click on the pie slice labeled “Restoration & Flooding Risk Reduction”).

¹⁹⁰ N.Y. ENV’T CONSERV. LAW § 58-0303(2)(c); N.Y. HOMES & CMTY. RENEWAL, [HOUSING TRUST FUND CORP. REQUEST FOR PROPOSALS: BLUE BUFFERS VOLUNTARY FLOOD RISK PROPERTY BUYOUT PROGRAM I](#) (June 2024) [hereinafter *Housing Trust Fund RFP*].

¹⁹¹ See *Blue Buffers Information Request Form*, N.Y. HOMES & CMTY. RENEWAL (last visited July 14, 2025) (“Blue Buffers is required by law to restrict voluntary buyouts to at-risk properties . . . Only homeowners in [] identified areas will be able to apply for a buyout.”).

to “significantly exacerbate flooding in other locations.”¹⁹² Additionally, the buyout program imposes requirements and limitations on the allowed uses of acquired properties and prioritizes ecosystem function.¹⁹³ For example, the statute requires that land purchased with EBA funding must “be restored and maintained in perpetuity in a manner that, aims to increase ecosystem function, provide additional flood damage mitigation for surrounding properties, protect wildlife habitat, and wherever practicable and safe, allow for passive and/or recreational community use.”¹⁹⁴ The first round of awards to nonprofits interested in serving as administrators were anticipated to be awarded in October 2024.¹⁹⁵

Since the program is so new, it is difficult to compare its efficacy and implementation strategies to other state programs at this time. Experience with prior post-disaster buyouts foreshadow problems that may arise with the Blue Buffers program, at least as it is implemented in New York City. First, for instance, the flooding histories of properties are “notoriously elusive” and sellers are “allow[ed] to pay a [] credit to the buyer” to avoid disclosing information about prior flooding—meaning that a homeowner may encounter difficulty trying to determine the extent to which they are at risk of future flooding.¹⁹⁶ Moreover, though more than half of New York City residents live in a flood zone, the lack of available affordable housing and increasing rents and real estate prices in the city limit the options available to residents who might otherwise want to use Blue Buffers to relocate.¹⁹⁷ Additionally, those who accept buyouts to relocate may end up gentrifying other neighborhoods and displacing current residents. Despite these potential downsides in New York City, Blue Buffers shares many of the same features as New Jersey’s Blue Acres program and may in time prove to be just as successful.

¹⁹² N.Y. ENV’T CONSERV. LAW § 58-0303(2)(h); see also [Blue Buffers Q&A Information Session](#), N.Y. HOMES & CMTY. RENEWAL 2 (Jul. 10, 2024) [hereinafter *Blue Buffers Q&A*].

¹⁹³ N.Y. ENV’T CONSERV. LAW § 58-0303(2)(f).

¹⁹⁴ N.Y. ENV’T CONSERV. LAW § 58-0303(2)(f).

¹⁹⁵ See *Blue Buffers Q&A*, *supra* note 191, at 5; *Housing Trust Fund RFP*, *supra* note 190, at 6.

¹⁹⁶ Liz Donovan, [Buyouts on the Ballot: 10 Years After Sandy, New York Considers New Funding for Voluntary Relocation](#), CITY LIMITS (Oct. 24, 2022). Additionally, in 2021 alone, New York City resident spent over \$23.5 million on purchasing homes with previous flood damage.

¹⁹⁷ *Id.*

v. *California's Sea Level Rise Revolving Loan Program*

California has been contemplating creating a voluntary buyout program for failing coastal properties for several years, but has not yet implemented one as of 2024. California State Senator Ben Allen proposed legislation first in 2021, then again in 2022, that would have authorized California's state bank—the California Infrastructure and Economic Development Bank (I-Bank)—to establish a revolving loan account to provide low-interest loans to counties and communities to buy “vulnerable coastal propert[ies]” threatened by sea level rise from private property owners.¹⁹⁸ In theory, under the Sea Level Rise Revolving Loan Program (loan program), a participating local government would purchase private properties and then rent them out in order to recoup the purchase price and repay the loan until the property becomes uninhabitable, at which time the municipality would demolish the structure and use the land for public benefits like open space, sea level rise mitigation, and resilience.¹⁹⁹

Under the loan program, properties eligible for buyout would be limited to those that could provide: (1) an evaluation of the benefits of “future use of the property for sea level rise mitigation as natural infrastructure or for coastal public access;” (2) a plan to determine when the property is uninhabitable; and (3) “evidence that the property will be able to generate enough revenue to repay the loan.”²⁰⁰ Once an eligible property is identified, a local jurisdictions would be

¹⁹⁸ Sea Level Rise Revolving Loan Program, S.B. 83, 2021 Leg., Reg. Sess. (Cal. 2021); Sea Level Rise Revolving Loan Pilot Program, S.B. 1078, 2022 Leg., Reg. Sess. (Cal. 2022) The 2022 bill proposed to add to the Cal. Public Resources Code a definition for vulnerable coastal properties stating:

any improved land containing a building or structure, or agricultural land, identified by a local jurisdiction as vulnerable to sea level rise . . . located in a jurisdiction with a certified local coastal program that includes policies or programs, or both, to avoid, minimize, and mitigate the impacts of sea level rise, which has been developed pursuant to a comprehensive vulnerability assessment and certified by the California Coastal Commission.

S.B. 1078 § 30978(f).

¹⁹⁹ S.B. 1078 §§ 30978(b), 30979.

²⁰⁰ *Id.* § 30978(b)(1), (5)-(6).

able to apply to the I-Bank with their “vulnerable coastal property plan,” the plan would include: (1) a description of how the property meets the defined eligibility requirements, (2) a timeline for the rental process, (3) a management plan, (4) a lease agreement or plan for leasing, and (5) an explanation of how the structure will be removed when it is no longer safe to inhabit, including a “comprehensive implementation plan and funding mechanisms.”²⁰¹ Under this program, eligible property owners would have been able to receive a fair market price for the home, guaranteed by a third-party appraisal,²⁰² so they could move to a safer location. The county or community would then rent out the property “until [it] could no longer be lived in safely” to recoup the money spent on purchasing the property.²⁰³ This time period would be defined by the methodology put forth in the local jurisdiction’s funding application.²⁰⁴

The loan program passed both chambers of the California Legislature in 2021 and 2022, but Governor Gavin Newsom vetoed the bill both times, noting that it did not “comprehensively address the costly activities envisioned, likely to be carried out over decades.”²⁰⁵ Senator Allen recognized the ambiguity present in his proposal, noting that it was difficult to know how many jurisdictions would take advantage of the new tool or otherwise predict how large the loan program would be.²⁰⁶ However, the program, theoretically, would have funded itself by allowing municipalities to rent out the purchased at-risk properties in order to payback their loans. However, as written, the loan programs did not have any requirements for how long a property must remain habitable once sold, nor did they set criteria for determining when or whether a property was habitable.

The loan program suffers from an inherent logical disconnect—a property would need to be vulnerable enough to motivate a reasonable homeowner to want

²⁰¹ *Id.* § 30979(a)(1).

²⁰² *Id.* § 30979(a)(1)(f).

²⁰³ Helen Wiley, *A Q&A On California’s Proposed Revolving Loan Program for Coastal Retreat*, WHARTON SCH. (June 1, 2021).

²⁰⁴ S.B. 1078 § 30978(b)(5).

²⁰⁵ [Letter from Gavin Newsom, Governor of California, to Members of the California State Senate](#) (Oct. 7, 2021); [Letter from Gavin Newsom, Governor of California, to Members of the California State Senate](#) (Sept. 29, 2022).

²⁰⁶ Wiley, *supra* note 203.

to leave it rather than stay and enjoy their investment, yet safe and sound enough for the municipality to rent it out at a reasonable market rate for a sufficient number of years, perhaps for decades, in order to recover and repay the loan, and to keep the revolving fund funded.²⁰⁷ With the innate risk in renting out a coastal property whose seller was seeking to avoid the risk of potentially imminent damages from coastal erosion, municipalities, and the State, would have faced an increased litigation risk if injury occurred to a renter of these vulnerable properties. This discrepancy, along with the lack of guidance on how long a property must remain habitable for leasing, present an inevitable and potentially insurmountable obstacle for addressing threatened oceanfront structures through a revolving fund.

The loan program was also criticized as essentially establishing a bailout or subsidy for wealthy oceanfront homeowners whose risky housing purchases had proved to be bad investments.²⁰⁸ As one critic explained:

Sea level rise is a slow, predictable climate problem . . . research clearly shows where and to what extent sea levels will rise over the next 80 years. Owners of waterfront properties have all the information they need to project that the value of the properties will one day drop. They could sell their homes today, but they want to keep living at the beach until the waves literally crash into their living rooms. By selling to the government, they get both the lifestyle and the profits.²⁰⁹

²⁰⁷ Rosanna Xia, *How Should California Confront the Rising Sea? These Lawmakers Have Some Bold Ideas*, L.A. TIMES (Aug. 20, 2021).

²⁰⁸ Carey L. Biron, *How Rising Sea Levels Are Threatening U.S. Coastal Homes*, WORLD ECON. F. (Jul. 23, 2021) (noting that the bill “has drawn criticism . . . with some saying it would effectively subsidize some of the country’s wealthiest property owners, whose multi-million dollar beach houses and mansions dot California’s coastline.”).

²⁰⁹ Chelsea Kirk, *A Buyout Program for the Rich Passed the CA State Senate*, KNOCKLA (June 10, 2021). Interestingly, the bills’ sponsor, State Senator Allen, represents a district that includes the wealthy retirement community of Rancho Palos Verdes, California, which benefitted from the 2024 Hazard Mitigation Grant funding program described above. *Id.*; *supra* notes 117–132.

Of course, this criticism could be lobbed at many of the buyout programs discussed in this article. These equity concerns are particularly heightened in areas like North Carolina's Outer Banks, where vacation homes with high property values (the bailout of which should arguably *not* be subsidized) intersect with high natural resource values (the protection of which is in the public interest) in some communities, while, in other communities, a not-insignificant population of year-round residents own more modest homes and earn more modest incomes.²¹⁰ Multiple factors must be taken into consideration to avoid an inequitable result, including the structuring of criteria for eligibility, limits and terms of payouts, the source of funding, and other key features of a program to avoid injustice and waste of government resources.

Ultimately, the California loan program has not become law, but could be introduced again. Additional information will be needed to answer the questions raised by the first two iterations of the bills and to determine whether the proposed California Sea Level Rise Revolving Loan Pilot Program could be effective in practice.

vi. Hawai'i's Managed Retreat Report

In 2019, the State of Hawai'i Office of Planning and Sustainable Development's Coastal Zone Management Program (CZM Program) published a report assessing the feasibility of managed retreat in Hawai'i (hereinafter Hawai'i Managed Retreat Report).²¹¹ The report, and the state's ultimate decision not to adopt a state-funded managed retreat program, offers useful lessons for North Carolina.

²¹⁰ Summer Stevens, [*The State of Housing on the Outer Banks: Part One*](#), COASTLAND TIMES (July 29, 2023). *Compare* home prices and earnings in two examples of coastal communities, Harkers Island, NC (median property value \$295,500 and median earnings for men \$45,625) and Duck, NC (median property value \$705,700 and median earnings for men \$140,208). [*Harkers Island, NC*](#), DATA USA, (last visited Aug. 26, 2025).

²¹¹ OFF. OF PLANNING, COASTAL ZONE MGMT PROGRAM, [*ASSESSING THE FEASIBILITY AND IMPLICATIONS OF MANAGED RETREAT STRATEGIES FOR VULNERABLE COASTAL AREAS IN HAWAII FINAL REPORT*](#) ii (Feb. 2019) [hereinafter Hawai'i Managed Retreat Report]. The report was commissioned pursuant to the 2013 Hawai'i Ocean Resources Management Plan. *Id.*; HAWAII COASTAL ZONE MGMT. PROGRAM, [*HAWAII OCEAN RES. MGMT. PLAN*](#) (Jul. 2013).

To inform the assessment and final report, the CZM Program and its consultants undertook a multi-phased project: (1) conducting background research, including a literature review, on managed retreat in other jurisdictions, (2) using models to evaluate how retreat would impact different land uses in Hawai‘i (e.g., resorts and hotels, urban areas, single family homes, and critical infrastructure), and (3) hosting a symposium with stakeholders and experts.²¹² As part of the background research, the authors first analyzed the implementation of managed retreat strategies in other states and countries, and identified key priority areas necessary for a managed retreat program—including, but not limited to: (1) community participation, (2) comprehensive planning for retreat, (3) funding, (4) preservation of open space and wetlands after retreat, and (5) incorporation of retreat into land use and shoreline management laws.²¹³ The authors then conducted a number of focus groups with residents, including single-family homeowners, and hotels to determine their main concerns.²¹⁴ Common themes across the groups include community understanding of coastal threats and potential adaptation strategies, requiring open space to be preserved once retreat occurs to buffer against future storms and coastal erosion, and concerns over how managed retreat programs would be funded.²¹⁵ In particular, single-family homeowners noted that oceanfront homes in Hawai‘i generate significant income for the state, and retreat will likely lead to a loss of that revenue.²¹⁶

After analyzing other programs and speaking with stakeholders, the Hawai‘i Managed Retreat Report concluded it was not feasible for Hawai‘i to implement a statewide managed retreat program at the time of publication.²¹⁷ State-funded voluntary buyouts at pre-disaster fair market value would be extremely expensive due to high property costs in Hawai‘i.²¹⁸ Specifically, the report noted that, “there may never be enough money for a statewide buyout

²¹² Hawai‘i Managed Retreat Report, *supra* note 211, at ii.

²¹³ *Id.* at 8–21.

²¹⁴ *Id.* at 22, 28, 31–32, 34–35.

²¹⁵ *Id.* at 21, 25, 28–29, 31–32, 35–37.

²¹⁶ *Id.* at 31–32.

²¹⁷ *Id.* at 57. Specifically, the report stated that a “more thorough, detailed understanding of retreat and it entailed is necessary” before it can be implemented in the state. *Id.*

²¹⁸ *Id.* at 52–53.

program, but it may be possible in selective cases.”²¹⁹ Additionally, there is limited available land for the State of Hawai‘i to provide that is suitable for development, including land that meets the criteria to build critical infrastructure (like roads and utilities).²²⁰ Given the extremely high cost of a managed retreat program, the Hawai‘i Managed Retreat Report recommended creating a statewide leadership committee to work with counties and individuals to create a state-wide managed retreat strategy.²²¹ For the same reasons, North Carolina will want to create a committee with representatives of responsible agencies and stakeholder groups to develop a managed retreat program tailored to the state’s needs.

C. North Carolina’s Current Approaches

North Carolina currently has a piecemeal, ad hoc approach to addressing the problem of threatened oceanfront structures. For example, property owners affected by certain federally declared natural disasters may be eligible to receive funding to rebuild. Separately, the National Park Service has had some success with addressing threatened structures before they collapse, both by encouraging owners to preemptively remove homes that are encroaching on the beaches of Cape Hatteras National Seashore to avoid the harm that would accompany their future collapse,²²² and by buying out two owners of imminently threatened homes and then demolishing them to return the beach to the National Seashore. However, none of the options available provide a holistic solution to North Carolinian coastal property owners who wish to reduce their risk before a hurricane hits or their structure collapses due to coastal erosion.

i. ReBuild NC Strategic Buyout Program

North Carolina currently offers property owners in flood-prone areas the opportunity to sell their homes at fair market value through the ReBuild NC

²¹⁹ *Id.* at 53.

²²⁰ *Id.* at 53–54.

²²¹ *Id.* at 57.

²²² Kayli Thompson, [*Outer Banks Homes Keep Falling into the Ocean. High Costs Are a Reason Why*](#), TRIANGLE BUS. J. (Oct. 23, 2024) (explaining how the cost to move an oceanfront home to a new location can exceed the value of the home).

Strategic Buyout program (buyout program).²²³ Homes purchased through this program are demolished and maintained as green space by the local government to promote flood resiliency.²²⁴ However, these buyouts are only available in areas that were affected by certain natural disasters (namely, Hurricanes Matthew (2016) and Florence (2018)) with much of the damage being caused inland, and not to coastal communities.²²⁵ Additionally, the buyout program must prioritize areas with 40% or more low-to-moderate income households.²²⁶ The buyout program is primarily federally funded, mostly from HUD's CDBG program.²²⁷ Owners of second homes are not eligible for the buyout program, though owners of rental properties with tenants who use the house as their primary residence are.²²⁸

Eligible applicants can also receive both a Risk Reduction Incentive and Affordable Housing Incentive.²²⁹ Recipients of a Risk Reduction Incentive are eligible for up to \$10,000 to move to an area of reduced risk elsewhere in the state.²³⁰ The three Affordable Housing Incentives—(1) the Affordable Rental Incentive, (2) the Affordable Homeownership Incentive, and (3) the Matching Down Payment Incentive—support recipients who want to establish a new primary residence after abandoning their current one after receiving a buyout.²³¹ The Affordable Rental Incentive provides participants with annual income at or below 80% of the area median income (AMI) funding to relocate within their county; funding is “based on a percentage of the average Fair Market Rent by county” and on the rental size in an area with reduced flooding risk.²³² The Affordable Homeownership Initiative provides varying amounts of assistance to

²²³ *Strategic Buyout Program Manual*, N.C. OFF. OF RECOVERY & RESILIENCE 9–10 (Oct. 6, 2023) [hereinafter NCORR Strategic Buyout Program Manual]; see also *Frequently Asked Questions: ReBuild NC CDBG-DR Buyout Program*, N.C. OFF. OF RECOVERY & RESILIENCE 6–8 (last visited July 14, 2025).

²²⁴ NCORR Strategic Buyout Program Manual, *supra* note 223, at 22.

²²⁵ *Id.* at 10, 16–17.

²²⁶ *Id.* at 17.

²²⁷ *Id.* at 9.

²²⁸ *Id.* at 22.

²²⁹ *Id.* at 25–26.

²³⁰ *Id.* at 25; *Strategic Buyout Program Overview*, N.C. OFF. OF RECOVERY & RESILIENCE 24 (Oct. 3, 2021).

²³¹ See NCORR Strategic Buyout Program Manual, *supra* note 223, at 25–26.

²³² *Id.* at 26. The rental rate and rental size are determined by HUD. *Id.*

participants who make at or below 80% AMI, who are seeking to buy a new primary residence in an area of reduced risk in the same county as their previous residence.²³³ Lastly, the Matching Down Payment Incentive provides up to \$50,000 to participants who make up to 120% of the AMI who want to buy a new primary residence in an area of reduced risk within the same county as their previous home.²³⁴

While the buyout program may be helpful to many communities affected by Hurricanes Matthew and Florence, it does not address the problem of oceanfront structures that are critically threatened due to coastal erosion and sea level rise, but not hurricanes, in places like Rodanthe and other villages on Hatteras Island. Even if the buyout program funding were not limited to those two hurricanes, it would likely not be available to most homeowners in areas like Rodanthe, as assistance is limited to primary residences in areas with residents with low to moderate income. The average home price on Hatteras Island, for example, is over half a million dollars, and many of these houses are secondary residences or investment properties, rendering them ineligible.²³⁵

Additionally, systemic property rights issues can impose hurdles to successful, voluntary state buyout programs in North Carolina and elsewhere. For example, heirs' property owners who have been impacted by severe storms and flooding have historically struggled to access federal funding from agencies like HUD and FEMA because the programs distributing the funding often require free and clear title.²³⁶ In a buyout program, for example, an eligible homeowner must hold clean, insurable, and merchantable title, which includes being able to pay off

²³³ *Id.* Funding varies by county based on the average real estate value. *Id.*

²³⁴ *Id.*; [Homeownership Assistance Program](#), REBUILD NC (last visited July 14, 2025).

²³⁵ See [April 2025 MLS Statistical Report](#), OUTER BANKS ASS'N OF REALTORS 10 (Apr. 7, 2025) (showing median sale price of \$655,000 year-to-date, as of April 2025); see also [Hatteras Island Home Buyers FAQ's](#), NC 12 REALTY (last visited July 14, 2025) (stating that there are only around 4,000 full time residents in Hatteras Island and that there is "seemingly [] a shortage of full-time rental options").

²³⁶ See generally, RORY FLEMING ET AL., N.C. SEA GRANT, [SPLITTING HEIRS: THE CHALLENGES POSED BY HEIRS' PROPERTY OWNERSHIP TO COASTAL RESILIENCE PLANNING](#), (Aug. 2016) (discussing the challenges of heirs' property owners accessing disaster relief following Hurricane Katrina).

any liens against their property at or before closing.²³⁷ Thus, a homeowner without clear title must find legal assistance to help them before they can participate in the program.

Moreover, if a homeowner has an outstanding mortgage, some of the additional incentive funds they can access will be reduced by the outstanding amount of the mortgage on the property.²³⁸ Depending on the price of the property and the outstanding mortgage on a property, the buyout program may not end up assisting a homeowner's move to a safer location.

Another problem is simply unwillingness to leave. Some community members, particularly in communities that have a longstanding familial relationship with the land (e.g., those with family members buried at the local cemetery or with religious or spiritual connections to the land), may have no desire to leave or may be unwilling to do so.²³⁹ While a new state-run program may not be able to fully address a person's desire to not leave an area, it should be noted and incorporated as a factor that may impact the success of a voluntary buyout program.

ii. *National Park Service Buyouts*

In 2023, the National Park Service, through a pilot project, purchased two homes in Rodanthe that were structurally unsound, at risk of collapsing, and encroaching on the federally owned beach due to the westward migration of the coastline.²⁴⁰ The Park Service paid fair market value for the homes using funds from the Land and Water Conservation Fund.²⁴¹ Fair market value was determined by a third-party appraiser and the Department of Interior's Appraisal

²³⁷ NCORR Strategic Buyout Program Manual, *supra* note 223, at 31, 55.

²³⁸ *Id.* at 26–27, 33.

²³⁹ See, e.g., Catherine Kozak, *Buried in Time*, OUTER BANKS COASTAL LIFE (Sept. 21, 2016) (discussing how sea level rise is threatening centuries old cemeteries).

²⁴⁰ *Cape Hatteras Threatened Oceanfront Structures*, *supra* note 1.

²⁴¹ *Id.* The Land and Water Conservation Fund is a federal fund that “invests earnings from offshore oil and gas leasing” to acquire land and water “necessary to achieve the natural, cultural, wildlife, and recreation management objects of the National Park Service.” *Id.*

and Valuation Services Office.²⁴² After purchasing the houses, the National Park Service hired a third-party contractor to remove the homes and restore the beach for use by National Seashore visitors.²⁴³

While these buyouts were an expedient solution to address two houses whose imminent collapse was adversely affecting the National Seashore, similar buyouts would not be workable on a broad scale going forward. Purchasing multiple failing homes at pre-collapse fair market value would be prohibitively expensive and set an unworkable precedent. Additionally, the Land and Water Conservation Fund has multiple national interests to which it must direct its funds that are outside of North Carolina.²⁴⁴ A better use of the Land and Water Conservation Fund money would be to add to and improve national parks nationwide, not buy out multiple additional oceanfront homeowners. Moreover, depending on the degree to which the coastline has eroded past property lines, and the beach has migrated toward a house, the house might be fully situated on the federally owned beach, creating the untenable situation of the federal government purchasing property that it technically already owns at least in part. In sum, the National Park Service using the Land and Water Conservation Fund to buy each house that, because of natural barrier island processes, comes to be situated on the National Seashore is not a viable solution to the problem of collapsing houses on the North Carolina coast.

V. LESSONS LEARNED

*Roll on, thou deep and dark blue Ocean—roll!*²⁴⁵

The current solutions available under North Carolina state law do not sufficiently address the problem of collapsing beachfront structures for the reasons described above, but the programs developed by other states can offer valuable lessons for designing a better solution for North Carolina. If North

²⁴² *Id.*

²⁴³ *Id.*

²⁴⁴ [Past Projects](#), LAND & WATER CONSERVATION FUND (last visited July 14, 2025) (showing all projects receiving funds from the program).

²⁴⁵ Lord Byron, [Canto the Fourth](#), in CHILDE HAROLD'S PILGRIMAGE (The Project Gutenberg, 2004).

Carolina were to try to create a funding program for homes at risk of imminent collapse from erosion or plagued by repetitive flooding, key features and takeaways from other state's programs that it should consider include:

1. Participation in any buyout program must be voluntary.

This is a universal feature in all the federal and state programs described herein, and it should go without saying. An assessment of the potential use of eminent domain and the equity concerns it would raise is beyond the scope of this article, as is an assessment of the potential legal claims that homeowners would likely attempt to bring against North Carolina should it try to impose involuntary buyouts of threatened oceanfront structures.²⁴⁶

2. Considerations of fairness and protecting overburdened communities must be a part of the program.

The program should consider equity issues and aim to ensure that otherwise ineligible property owners, including heirs' property owners, and tenants are not unfairly precluded from program participation through no fault of their own. Any program that is seen as primarily providing a subsidy for wealthy real estate investors will likely experience the same pushback as the California Sea Level Rise Revolving Loan Fund. The demographic makeup of each state's coastal population is different, and North Carolina has both expensive, multi-million-dollar homes and moderate- to low-income family homes on its coast. Ideally, funding that benefits second-home or investment-home owners would come entirely or primarily from a fund to which the owners contribute, like NFIP or other insurance funds, or from federal funds intended for increasing coastal resilience. Accordingly, state funds should be dedicated to primary homeowners on the coast, and those who have borne the greater burden of environmental and climate injustices.

²⁴⁶ This is not to say that situations cannot exist, however, in which the uncompensated forced demolition of an oceanfront structure may be appropriate, such as when a structure has come to be located entirely on public trust resources like the wet sand beach, when the structure constitutes a public nuisance, or otherwise creates an unreasonable hazard to public health and safety.

3. The program should incentivize homeowners to act responsibly.

Any buyout program should encourage homeowners to act in such a way that the threatened structure is removed before it can cause harm by collapsing. This can be accomplished either through providing appropriate levels of financial assistance to the homeowner to demolish or move the structure, or through a buyout program that results in a responsible government agency or nonprofit entity taking ownership of the structure and demolishing it. The program should not reward homeowners who roll the dice by delaying action.

4. Objective criteria and procedures.

Eligibility criteria, pricing guidelines, and program processes should be objective and spelled out clearly, along with any other such details, to ensure transparency and remove the opportunity for inconsistency or bias in its implementation. The program should tie payout amounts to objective, measurable, reasonable criteria, like the pre-disaster fair market value that the New Jersey Blue Acres program considers or the current fair market value that Restore Louisiana considers, and should impose a reasonable payout cap.

5. No duplication of benefits.

The program should avoid duplication of benefits by adjusting payouts to account for such benefits as flood insurance claims for structural repairs that the owner received but did not invest into the house. Benefits for the repair of oceanfront structures already determined to be at imminent risk of collapse should not be paid out if funds to support the removal or relocation of that structure are available.

6. Administrative assistance.

The program should offer the kinds of administrative assistance for the participant in dealing with, for instance, banks, mortgagors, appraisers, title clearing, etc., that the New Jersey Blue Acres program offers. The program could offer benefits like relocation financial assistance for owners—at least to low- and

moderate-income households—not merely to dislocated tenants. That kind of administrative and financial assistance may account for the difference between the popularity of New Jersey’s Blue Acres program and the comparative disuse of Restore Louisiana.

7. Disposition of the land after buyout.

A program that buys out a homeowner or pays for removal of a house should ensure that the land under and waterward of the footprint of the removed structure is returned to the public trust as open space to provide flood resiliency (as buffers, wetlands, or stormwater storage), wildlife habitat, and/or recreational space. Construction of a new structure should not be allowed there.

8. Complete removal.

The program should ensure that all sources of debris and pollution are removed with the house, including septic systems, underground fuel storage tanks, utility wiring and pipes, sandbags, fences, and other appurtenances. Moreover, program incentives should prioritize and encourage removal over relocation for most oceanfront structures in quickly eroding sections of North Carolina’s coast. Relocation is not a viable long-term option for many coastal communities, particularly those located on the narrow, unstable Outer Banks, where the number of remaining buildable lots are inherently limited. Moving inland—whether to the furthest landward portion of an oceanfront lot or to another lot located further landward—might buy a homeowner some time, but the problem could recur within a few decades. Current state development setback requirements, which are based on historic rates, will likely be insufficient to protect new coastal development in the face of accelerating sea level rise, increasing erosion rates, and intensifying storm activity.

9. Prompt processing.

The program should ensure that the application process is not overly cumbersome, applications are processed punctually, and payments are made promptly, so that owners are not forced as a practical matter to abandon the

program altogether. A person whose home has been destroyed or is on the verge of collapse may not be able to use a program that takes years to provide benefits and may instead seek out short-term solutions that do not protect them long-term.

10. Funding sources.

Funding sources should be clear, long-lasting, and dependable. Given the current scope of the problem, with numerous coastal structures already threatened or on the verge of collapse, and the likelihood that the problem will rapidly grow as sea level rise, erosion rates, and storm activity accelerate, a viable buyout program that meets the above criteria will require enormous funds. Any buyout program that seeks to address the problem holistically will require more funding than can currently be expected to come from the state's budget. Federal funding sources, including the future of FEMA generally, are likewise uncertain in the current administration. Accordingly, funding sources should be renewable or revolving to the extent feasible, like the California legislation attempted to establish.

VI. CONCLUSION

The collapsing houses, failing septic systems, and ensuing debris fields and pollution currently plaguing Cape Hatteras National Seashore at Rodanthe are surely the tip of the iceberg. North Carolina has the second longest ocean shoreline of any Eastern state, and many miles of that coastline comprise fragile, shifting barrier islands where the tides are already lapping at the first line of oceanfront homes.²⁴⁷ In the face of climate change, accelerating sea level rise, and worsening erosion rates, the environmental and public health hazards posed by houses on the brink of collapse, exposed septic tanks, and post-collapse debris will only become more common along the Outer Banks if left unaddressed. The interagency report issued in August 2024, entitled "Managing Threatened Oceanfront Structures: Ideas from an Interagency Work Group," proposed many potential solutions, the evaluation of which is beyond the scope of this article.²⁴⁸

²⁴⁷ [Facts About NC Beaches](#), VISITNC (last visited July 11, 2025); *Cape Hatteras Threatened Oceanfront Structures*, *supra* note 1.

²⁴⁸ NC Threatened Structures Workgroup Report, *supra* note 71.

A state buyout program that proactively addresses the factors listed above is only one of those proposals, but it, in combination with other proposed legal and financial reforms, could be an effective way to begin to address this growing crisis.