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The Implications of Rolling Easements and Transferred Development Rights in New Hampshire and Rhode Island

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THE IMPLICATIONS OF ROLLING EASEMENTS AND TRANSFERRED DEVELOPMENT RIGHTS IN NEW HAMPSHIRE AND RHODE ISLAND

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1. INTRODUCTION

Climate change is affecting the world in a spectrum of ways. Sea level rise is one of the most prominent and alarming aspects of climate change. This document will focus on what options both municipalities and landowners have in regards to protecting shoreline property. During the 20th century, the sea level rose about seven inches and is continuing to rise.¹ Using current research, sea levels are forecasted to rise anywhere from more than two feet up to three and a half feet by the end of this century.² The rising sea level will impact the environment in a number of ways, including an increase in floods, inundation, and shoreline erosion.³ Presently, shoreline habitats and communities that depend on them are threatened due to the sea level rise combined with increasing development as well as a growing population in coastal communities. Communities must look to innovative techniques for the best way to mitigate potential hazards posed by climate change.⁴ Responses to sea level rise include conservation easements, acquisition programs, setbacks, flood hazard regulations, density restrictions, and building size regulations.⁵ This document will focus on two tools that Rhode Island and New Hampshire can utilize to best protect their coastlines from the difficulties a rising sea level presents: rolling easements and transferred development rights.

This document will first provide an overview of New Hampshire and Rhode Island. After discussing New Hampshire and Rhode Island, an introduction will be given for rolling

¹ *Coastal Areas Impact & Adaptation: Climate Impacts on Coastal Areas* (June 14, 2012), available at <http://www.epa.gov/climatechange/impacts-adaptation/coasts.html#impactssea>.

² *Federal Action for a Climate Resilient Nation: Progress Report of the Interagency Climate Change Adaptation Task Force 2* (Oct. 28, 2011), http://www.whitehouse.gov/sites/default/files/microsites/ceq/2011_adaptation_progress_report.pdf.

³ *NOAA Erosion Control Easements: Case Study* (Oct. 2, 2012), available at http://coastalmanagement.noaa.gov/initiatives/shoreline_ppr_easements.html#1.

⁴ *Coastal Areas Impact & Adaptation: Climate Impacts on Coastal Areas* (June 14, 2012), available at <http://www.epa.gov/climatechange/impacts-adaptation/coasts.html#impactssea>.

⁵ JAMES G. TITUS & STEPHEN K. GILL, COASTAL SENSITIVITY TO SEA-LEVEL RISE: A FOCUS ON THE MID-ATLANTIC REGION, SOCIETAL IMPACTS AND IMPLICATIONS 94, 95, <http://www.climatescience.gov/Library/sap/sap4-1/final-report/sap4-1-final-report-Part2.pdf> (last visited Dec. 04, 2012).

easements. Rolling easements will be discussed with a focus on the benefits, challenges, implementation in other states, how to develop such a program, and finally how the tool will work in New Hampshire and Rhode Island. Transferred development rights will then be discussed focusing on those same issues.

2. COASTAL MANAGEMENT IN NEW HAMPSHIRE

New Hampshire has 131 miles of coast. While it has the shortest coastline of any coastal state, it has a number of towns that lie along its shores that are susceptible to the challenges posed by climate change and the rising sea level. Within 17 coastal municipalities is a coastal population of 418,366 (2000).⁶ Along New Hampshire's coast, among the municipalities are beaches and islands, working ports, and resort villages.⁷ New Hampshire's coastal regions include Atlantic Ocean, low Piscataqua River, Great Bay, and a variety of tidal rivers.⁸

The New Hampshire state government is aware of the environmental hazards presented by climate change and a rising sea level. The state has a federally approved program, the New Hampshire Coastal Program, which is administered by the Department of Environmental Services (DES) and authorized under the Coastal Zone Management Act. The program gives funding and assistance to municipalities and other groups in an effort to accomplish the program's mission which is to "to balance the preservation of natural resources of the coast with the social and economic needs of this and succeeding generations."⁹ New Hampshire already has in place a list of sixteen "coastal policies." This list includes regulations and policies

⁶ *Ocean and Coastal Management in New Hampshire: New Hampshire's Coastal Program* (Nov. 14, 2012), available at <http://coastalmanagement.noaa.gov/mystate/nh.html>.

⁷ *About the Regions, Seacoast*, available at <http://www.visitnh.gov/welcome-to-nh/about-the-regions/seacoast.aspx> (last visited Dec. 04, 2012).

⁸ *Ocean and Coastal Management in New Hampshire: New Hampshire's Coastal Program* (Nov. 14, 2012), available at <http://coastalmanagement.noaa.gov/mystate/nh.html>.

⁹ *Id.*

concerning research, education, and habitat protection. There are also policies that provide for the management of coastal development. Those management policies include a policy to “preserve the rural character and scenic beauty of the Great Bay estuary by limiting public investment in infrastructure within the coastal zone in order to limit development to a mixture of low and moderate density.”¹⁰ Already on the books is New Hampshire’s Section 309 Objective, which recognizes many of the risks associated with sea-level rise and is beginning to plan and act accordingly.¹¹

3. COASTAL MANAGEMENT IN RHODE ISLAND

In contrast to New Hampshire’s short coastline, Rhode Island has about 384 miles of coast that runs along the Narragansett Bay and Atlantic Ocean. Rhode Island’s coastal population as of 2000 was about 1,052, 567 people.¹² In fact, Rhode Island’s coastal zone encompasses the entire state; therefore, Rhode Island has numerous towns that are directly affected by climate change and sea level rise.¹³

Rhode Island looks to the Rhode Island Coastal Resources Management Council (CRMC) to regulate coastal land areas. The managing state agency, created by the General Assembly, is responsible for “the preservation, protection, development, and where possible the restoration of the coastal areas of the state via the issuance of permits for work with the coastal

¹⁰ CHRISTIAN WILLIAMS, NEW HAMPSHIRE COASTAL PROGRAM: GUIDE TO FEDERAL CONSISTENCY COASTAL ZONE MANAGEMENT ACT § 307 (Nov. 2011), B1-3, <http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-05-21.pdf>.

¹¹ MATTHEW A. WOOD, TED DIERS & KEVIN LUCEY, *Coastal Zone Management Act Section 309 Enhancement Grants Program Assessment and Strategy I* (Dec. 2010), available at <http://coastalmanagement.noaa.gov/mystate/docs/nh3092011.pdf>.

¹² *Ocean and Coastal Management in Rhode Island: Rhode Island’s Coastal Program* (Nov. 14, 2012), available at <http://coastalmanagement.noaa.gov/mystate/ri.html>.

¹³ *Id.*

zone of the state.”¹⁴ The state agency, which balances economic considerations with environmental protection, is operated by a council of appointed representatives from the public, as well as, from state and local governments and under the oversight of professional engineers, biologists, scientists, and marine specialists. The CRMC functions through the use of regular public hearings. At those hearings, the public has the opportunity to “formally input their comments on how the coastal resources of the state should be managed.”¹⁵ CRMC is authorized by the state to:

formulate policies and plans, to adopt regulations necessary to implement its various management programs; coordinate its functions with local, state, and federal governments on coastal resources issues (including advising the Governor, the General Assembly, and the public on coastal matters, and acting as binding arbitrator in any dispute involving both the resources of the state's coastal region and the interests of two (2) or more municipalities or state agencies. It is also responsible for the designation of all public rights-of-way to the tidal water areas of the state, and carrying on a continued discovery of appropriate public rights-of-way.¹⁶

The CRMC also has a role in identifying new issues and finding a way to resolve such issues. The agency has the authority to regulate “the area extending from the territorial sea limit, 3 miles offshore, to two hundred feet inland from any coastal feature.” Additionally, the CRMC has regulatory authority over the contiguous area of two hundred feet beyond natural features, such as coastal beaches and manmade shorelines.¹⁷ An example of the CRMC exercising its power was in 2006 when the Rhode Island Legislature authorized the agency to collaborate with the state building commissioner under R.I.G.L. § 23-27.3-100.1.5.5, which states:

The state building code standards committee has the authority in consultation with

¹⁴ *Rhode Island Coastal Resources Management Council: About the CRMC* (Nov. 6, 2012), available at <http://www.crmc.ri.gov/aboutcrmc.html>.

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Rhode Island Coastal Resources Management Council: About the CRMC* (Nov. 6, 2012), available at <http://www.crmc.ri.gov/aboutcrmc.html>.

the building code commissioner, to adopt, maintain, amend, and repeal code provisions, which shall be reasonably consistent with recognized and accepted standards and codes, including for existing buildings, for storm and flood resistance. Such code provisions shall, to the extent reasonable and feasible, take into account climatic changes and potential climatic changes and sea level rise. Flood velocity zones may incorporate freeboard calculations adopted by the Coastal Resources Management Council pursuant to its power to formulate standards under the provisions of section 46-23-6.¹⁸

4. ROLLING EASEMENTS: WHAT ARE THEY?

Many states have enacted regulations calling for rolling easements in an effort to mitigate the effects of climate change and sea-level rise. The National Oceanic Atmospheric Administration defines a rolling easement as:

A special type of easement placed along the shoreline to prevent property owners from holding back the sea but allow any other type of use and activity on the land. As the sea advances, the easement automatically moves or "rolls" landward. Because shoreline stabilization structures cannot be erected, sediment transport remains undisturbed and wetlands and other important tidal habitat can migrate naturally.¹⁹

A rolling easement is meant to prevent “the beach from being squeezed by a seawall at the landward edge, while the beach nourishment offsets erosion of the seaward edge.”²⁰ Rolling easements are designed to allow private investors in the free market to “reasonably manage the risks of sea level rise.”²¹ Different locales have incorporated varying characteristics in the use of this sort of land use tool, including prohibition of shoreline armoring and building new structures beyond certain boundary lines, and the implementation of public access provisions and rolling

¹⁸ PAMELA RUBINOFF, ET AL., SUMMARY OF COASTAL PROGRAM INITIATIVES THAT ADDRESS SEA LEVEL RISE AS A RESULT OF GLOBAL CLIMATE CHANGE 21, 22 (February, 2008), http://seagrant.gso.uri.edu/z_downloads/coast_haz_slr.pdf.

¹⁹ JAMES B. LONDON, ET. AL., AN ASSESSMENT OF SHORELINE MANAGEMENT OPTIONS ALONG THE SOUTH CAROLINA COAST 65 (Aug 2009), http://www.scdhec.gov/environment/ocrm/docs/SCAC/Shoreline_Options_SC.pdf.

²⁰ JAMES G. TITUS, ROLLING EASEMENTS 14 (June 2011), <http://water.epa.gov/type/oceb/cre/upload/rollingeasementsprimer.pdf>.

²¹ *Id.* at 5.

design boundaries.²² The characteristics range from fairly relaxed to extremely strict, for instance requiring homes to be removed once the land it sits upon floods at high tide.²³

Communities may also choose to employ rolling easements as a “type of conservation easement, with the easement donated, purchased at fair market value, or exacted as a permit condition for some type of coastal development.”²⁴

A. ROLLING EASEMENTS IMPLEMENTED ACROSS THE UNITED STATES

In looking at implementation in New Hampshire and Rhode Island, it is beneficial to see how other areas have addressed the use of rolling easements. Several states are already using rolling easements in an effort to adapt to rising sea levels. Across the United States, state legislatures and courts have handled the rolling easement concept in a number of ways. Many states have organized a system for rolling easements, with approaches varying by state. Some states have completely barred coastal armoring, whereas some have chosen to limit it or permit it only when it “minimizes ecological damage.”²⁵ Currently, California, Hawaii, Maryland, Maine, North Carolina, Rhode Island, South Carolina, and Texas use some variation of a rolling easement adapted to their area and needs.²⁶ The methods used to implement rolling easements

²² *Id.* at 14.

²³ *Id.* at 15.

²⁴ JAMES G. TITUS & STEPHEN K. GILL, COASTAL SENSITIVITY TO SEA-LEVEL RISE: A FOCUS ON THE MID-ATLANTIC REGION, SOCIETAL IMPACTS AND IMPLICATIONS 145, <http://www.climate-science.gov/Library/sap/sap4-1/final-report/sap4-1-final-report-Part2.pdf> (last visited Dec. 04, 2012).

²⁵ MEG CALDWELL & CRAIG HOLT SEGAL, NO DAY AT THE BEACH: SEA LEVEL RISE, ECOSYSTEM LOSS, AND PUBLIC ACCESS ALONG THE CALIFORNIA COAST (Dec. 9, 2007), 572, <http://www.boalt.org/elq/documents/elq34-2-09-caldwell-2007-0910.pdf>.

²⁶ JAMES B. LONDON, ET. AL., AN ASSESSMENT OF SHORELINE MANAGEMENT OPTIONS ALONG THE SOUTH CAROLINA COAST 65 (Aug 2009), http://www.scdhec.gov/environment/ocrm/docs/SCAC/Shoreline_Options_SC.pdf (last visited Dec. 04, 2012).

include: legislative acts, planning organizations, incorporation into deeds, and incorporation into public trust doctrines.²⁷

New England states, including Maine, Massachusetts, and Rhode Island, are among the states that currently implement rolling easements. Massachusetts has in place regulations providing that any development on “coastal dunes” may not interfere with “the landward or lateral movement of the dune.”²⁸ Those same regulations further add that “development on unconsolidated banks will not be allowed to use seawalls to prevent erosion, except for bank structures existing at the time of the law’s passage.”²⁹ Maine also has enacted rolling easement regulations in an effort to protect its coastal environment. Maine regulations provide that “no project may be permitted ‘if, within 100 years, the property may reasonably be expected to be eroded,’ and flatly provides that ‘no new seawall may be constructed.’”³⁰ Rhode Island’s current rolling easement implementation will be addressed below.

B. THE BENEFITS OF ROLLING EASEMENTS

Many benefits come with the implementation a rolling easement system. For one, rolling easements enable ecosystems to migrate inland and allow society to avoid costs and hazards by protecting low lands from a rising sea.³¹ Residents will also be able to:

Avoid increased taxes to pay for elevating infrastructure or dikes with pumping systems; Avoid loss of waterfront views caused by a dike or seawall or the loss of access for launching small boats from the shore; Mitigate eventual intra-community fights about whether to protect certain vulnerable areas, because a plan is negotiated when the consequences are far enough in the future for people

²⁷ *Id.*

²⁸ MEG CALDWELL & CRAIG HOLT SEGAL, NO DAY AT THE BEACH: SEA LEVEL RISE, ECOSYSTEM LOSS, AND PUBLIC ACCESS ALONG THE CALIFORNIA COAST (Dec. 9, 2007) 572, <http://www.boalt.org/elq/documents/elq34-2-09-caldwell-2007-0910.pdf>.

²⁹ *Id.*

³⁰ *Id.*

³¹ JAMES G. TITUS, ROLLING EASEMENTS 5 (June 2011), <http://water.epa.gov/type/oceb/cre/upload/rollingeasementsprimer.pdf>.

to be reasonable; Reduce flood insurance rates if the National Flood Insurance Program community rating system gives community credit for planning for sea level rise; and Promote community awareness and dialogue about long-term sea level rise.³²

The use of rolling easements will be especially valuable in rural areas where the environment is less developed. Nature will be allowed to take its course, and the expenses associated with rolling easements will be reduced.

C. THE CHALLENGES OF ROLLING EASEMENTS

Some obstacles may arise with the use of rolling easements. There are costs, both economic and non-economic, associated with the implementation of rolling easements. For example, there will be costs associated with the initial implementation of a rolling easement program. Also, there are some expenses associated with the inspection and management of an on-going rolling easement system. Future costs, under a rolling easement system, include the expense of relocating. Litigation costs may arise “when owners attempt to avoid the terms of the rolling easement.”³³ Furthermore, rolling easements will not be practical for communities where shore protection or development prevention is the preferred outcome.³⁴

Some states that have implemented rolling easements have faced negative feedback. For instance, after South Carolina passed the Beachfront Management Act in 1988, *Lucas v. South Carolina Coastal Council* challenged it.³⁵ However, the South Carolina act called for “setbacks,” which are similar to a rolling easement but have a key distinction. Where setbacks prohibit development near the shore, rolling easements do not. In the case of a rolling easement, the

³² *Id.*

³³ JAMES G. TITUS, ROLLING EASEMENTS 104 (June 2011), <http://water.epa.gov/type/oceb/cre/upload/rollingeasementsprimer.pdf>.

³⁴ JAMES G. TITUS & STEPHEN K. GILL, COASTAL SENSITIVITY TO SEA-LEVEL RISE: A FOCUS ON THE MID-ATLANTIC REGION, SOCIETAL IMPACTS AND IMPLICATIONS 95, <http://www.climate-science.gov/Library/sap/sap4-1/final-report/sap4-1-final-report-Part2.pdf> (last visited Dec. 04, 2012).

³⁵ *Lucas v. South Carolina Coastal Council*, [505 U.S. 1003](#) (1992).

property owner is allowed to build wherever he pleases on his property. However, the property owner may not prevent shoreline erosion by “armoring the shore” regardless of how close the water gets. With a rolling easement, when oncoming water threatens a structure, the owner will need to relocate or allow the structure to “succumb to the encroaching sea.”³⁶ After *Lucas*, South Carolina amended the law to call for a rolling easement instead of a setback, allowing property owners to receive special permits. The special permits “allow property owners to build structures no larger than 5000 square feet seaward of the baseline, as far landward as possible, with no impact to the primary sand dune or active beach.”³⁷ Like South Carolina, Texas has also faced some obstacles in the implementation of rolling easements. In Texas, a property owner brought an action alleging that, “enforcement of public’s allegedly superior easement right, pursuant to Texas Open Beaches Act, violated her constitutional property right.” However, the Supreme Court of Texas held that enforcing such easements did not deprive her of her right to exclude the public from a new dry beach.³⁸

D. HOW CAN ROLLING EASEMENTS WORK?

Several elements are essential to making rolling easements work. At the start, distinct rules need to be in place concerning what lands may be protected.³⁹ The implementation of rolling easements is going to best serve communities where the property value is higher than the

³⁶ NOAA *Erosion Control Easements: Case Study* (Oct. 2, 2012), available at http://coastalmanagement.noaa.gov/initiatives/shoreline_ppr_easements.html.

³⁷ JAMES B. LONDON, ET. AL., AN ASSESSMENT OF SHORELINE MANAGEMENT OPTIONS ALONG THE SOUTH CAROLINA COAST 65 (Aug 2009), http://www.scdhec.gov/environment/ocrm/docs/SCAC/Shoreline_Options_SC.pdf.

³⁸ JAMES B. LONDON, ET. AL., AN ASSESSMENT OF SHORELINE MANAGEMENT OPTIONS ALONG THE SOUTH CAROLINA COAST 65 (Aug 2009), http://www.scdhec.gov/environment/ocrm/docs/SCAC/Shoreline_Options_SC.pdf.

³⁹ JAMES G. TITUS, ROLLING EASEMENTS 5 (June 2011), <http://water.epa.gov/type/oceb/cre/upload/rollingeasementsprimer.pdf>.

cost to protect the shore.⁴⁰ Further, where the cost of shore protection is higher, ‘a rolling easement may be an effective tool for warning owners not to expect government-funded shore protection.’⁴¹ Rolling easements only preclude the property owner from using shore protection; therefore, as a tool they will be best utilized in areas “where preventing development is not feasible and shore protection is unsustainable.”⁴² Rolling easements can be implemented through several means including, but not limited to, public trust doctrine, statutes, and custom.⁴³ Since rolling easements essentially transfer the risks associated with sea-level rise from the environment to the property owner, strategically implementing them can make their use as beneficial as possible to the property owner. So far, communities have implemented rolling easements by way of regulations. As a regulation, rolling easements “are an alternative to prohibiting all development in the area at risk, which may be politically infeasible, inequitable, or a violation of the ‘takings clause’ of the U.S. Constitution.”⁴⁴ However, rolling easements can also be applied as an interest in land.⁴⁵

E. ROLLING EASEMENTS: NEW HAMPSHIRE

New Hampshire currently has no rolling easement regulations. Without other rolling easements in the state to model after, any community wishing to enact the use of such a land use tool will have to design the tool from scratch. However, this does have some advantages. New Hampshire can look to states that have implemented them to model their own. New Hampshire

⁴⁰ *Id.* at 145.

⁴¹ *Id.* at 135.

⁴² *Id.* at 95.

⁴³ MEG CALDWELL & CRAIG HOLT SEGAL, NO DAY AT THE BEACH: SEA LEVEL RISE, ECOSYSTEM LOSS, AND PUBLIC ACCESS ALONG THE CALIFORNIA COAST (Dec. 9, 2007) 570, <http://www.boalt.org/elq/documents/elq34-2-09-caldwell-2007-0910.pdf>.

⁴⁴ JAMES G. TITUS & STEPHEN K. GILL, COASTAL SENSITIVITY TO SEA-LEVEL RISE: A FOCUS ON THE MID-ATLANTIC REGION, SOCIETAL IMPACTS AND IMPLICATIONS 94, <http://www.climate-science.gov/Library/sap/sap4-1/final-report/sap4-1-final-report-Part2.pdf> (last visited Dec. 04, 2012).

⁴⁵ *Id.*

does currently have conservation easements, which is a positive sign for towns wishing to implement rolling easements.⁴⁶ As mentioned above, implementation of rolling easements can be achieved by first addressing the Public Trust Doctrine. In New Hampshire, there are numerous benefits guaranteed by the Public Trust Doctrine. There, the public trust encompasses “‘all useful and lawful purposes,’ ‘what justice and reason require,’ and ‘to boat, bathe, fish, fowl, skate and cut ice.’”⁴⁷ With these Public Trust Doctrine guarantees, it will be up to the local governments in New Hampshire to implement an effective rolling easement program. In New Hampshire, local municipalities will have to decide what “specific rights will be altered” and what legal approach will be utilized.⁴⁸ New Hampshire is a “home rule” state, meaning that local governments have “broad authority to act except where a specific statute limits local discretion.”⁴⁹ Local governments should look to NH Rev. Stat. § 49, which includes that the law should be “strictly interpreted to allow towns and cities to adopt, amend, or revise a municipal charter relative to their form of government so long as the resulting charter is neither in conflict with nor inconsistent with the general laws or the constitution” of New Hampshire.⁵⁰

F. ROLLING EASEMENTS: RHODE ISLAND

Regulations mirroring rolling easements are already in existence in Rhode Island. Rhode Island currently has in place land use tools referred to as rolling coastal management statute.⁵¹

⁴⁶ *New Hampshire Department of Justice, Conservation Easement, available at <http://doj.nh.gov/charitable-trusts/conservation-easements.htm>.*

⁴⁷ *Opinion of the Justices (Public Use of Coastal Beaches)*, 139 N.H. 82, 87 (1994).

⁴⁸ JAMES G. TITUS, ROLLING EASEMENTS 14 (June 2011), <http://water.epa.gov/type/oceb/cre/upload/rollingeasementsprimer.pdf>.

⁴⁹ JAMES G. TITUS, ROLLING EASEMENTS 14 (June 2011), <http://water.epa.gov/type/oceb/cre/upload/rollingeasementsprimer.pdf>.

⁵⁰ NH Rev. Stat. § 49-B:1.

⁵¹ *Jessica Grannis, et al., Coastal Management in the Face of Rising Seas: Legal Strategies for Connecticut* 80-82, available at <https://law.georgetown.edu/academics/academic-programs/clinical-programs/our-clinics/HIP/upload/Grannis-Connecticut-strategies-7-6-12.pdf>.

To understand Rhode Island rolling easements, one must look first to the applicable law, found under Rhode Island's Public Trust Doctrine enumerated in the RI Constitution Article 1, Section 17. Section 17 grants Rhode Island's General Assembly the authority to protect and conserve the state's natural resources, including the shoreline, by any means necessary and proper. Part of Section 17 includes:

Shore privileges -- Preservation of natural resources. -- The people shall continue to enjoy and freely exercise all...the privileges of the shore, to which they have been heretofore entitled under the charter and usages of this state, including but not limited to ...leaving the shore to swim in the sea and passage along the shore; and they shall be secure in their rights to the use and enjoyment of the natural resources of the state with due regard for the preservation of their values; and it shall be the duty of the general assembly to provide for the conservation of the air, land, water, plant, animal, mineral and other natural resources of the state, and to adopt all means necessary and proper by law to protect the natural environment of the people of the state by providing adequate resource planning for the control and regulation of the use of the natural resources of the state and for the preservation, regeneration and restoration of the natural environment of the state.⁵²

Rhode Island, like its neighbor Massachusetts, forbids “additional hard shore protection structures along both the ocean shore and some estuarine shores, but allow them along other estuarine shores.”⁵³ Essentially, the Rhode Island law prohibits “erosion control structures” along its oceanfront. These policies will allow wetlands, beaches, and the purposes of the public trust to be maintained even as the sea level rises.”⁵⁴ CRMC, the state agency mentioned above, is in charge of these policies. The agency categorizes them as the areas of concern as “undeveloped, moderately developed, and developed.” Given the nature of these areas, the agency knows they

⁵² Constitution of the State of Rhode Island and the Providence Plantations, Article 1, Section 17, *available at* <http://webservice.rilin.state.ri.us/RiConstitution/C01.html> (last visited Dec. 04, 2012).

⁵³ JAMES G. TITUS, ROLLING EASEMENTS 46 (June 2011), <http://water.epa.gov/type/oceb/cre/upload/rollingeasementsprimer.pdf>.

⁵⁴ MEG CALDWELL & CRAIG HOLT SEGAL, NO DAY AT THE BEACH: SEA LEVEL RISE, ECOSYSTEM LOSS, AND PUBLIC ACCESS ALONG THE CALIFORNIA COAST (Dec. 9, 2007) 572, <http://www.boalt.org/elq/documents/elq34-2-09-caldwell-2007-0910.pdf>.

have the potential to change with changing climate and weather. Therefore, the agency prohibits “construction or expansion of new infrastructure or utilities (including water, gas, and sewer) on all barriers.”⁵⁵

When property owners propose structural shoreline protection, the CRMC requires that the property owner try all other reasonable/practical alternatives, including “the relocation of the structure and nonstructural shoreline protection methods.”⁵⁶ Further, the CRMC will not allow any new “structural shoreline protection methods” on coastal areas classified as “undeveloped, moderately developed, and developed, and in Type 1 conservation waters.”⁵⁷ Nor are property owners permitted to use “structural shoreline protection facilities...to regain property lost through historical erosion or storm events.”⁵⁸ The CRMC implements its regulations based upon erosion rates, which are calculated by comparing the shoreline location at different point in time. For instance, in “critical erosion areas, all residential construction with less than six unites must be set back 30 times, and commercial property 60 times, the average annual erosion rate.”⁵⁹

5. TRANSFERRED DEVELOPMENT RIGHTS (TDR): WHAT ARE THEY?

Transferred Development Rights, or *TDR*, is a relatively new zoning technique in which land use is regulated by severing development rights from one tract of land and transferring them to another tract of land. With the severance of development rights, future development of the sending area, where the rights are transferred from, is redirected to the receiving area, where the

⁵⁵ 43, seagrant.gso.uri.edu/z_downloads/coast_haz_slr.pdf (last visited Dec. 04, 2012).

⁵⁶ *Id.* at 44.

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.*

rights are sent.⁶⁰ This type of land use tool is not only fair and equitable to the property owner, but it also supports the surrounding community in a variety of ways that will be discussed.⁶¹

A. TDR APPLIED ACROSS THE UNITED STATES

Transfer development rights are found all across the country. TDR programs currently exist in such places as: Montgomery County, Maryland, Boulder, Colorado, Pinelands, New Jersey, and Palm Beach County, Florida.⁶² Many programs currently exist in the northeast. For instance, Massachusetts has numerous TDR programs all across its state. Towns using TDR's in Massachusetts include six towns in Pioneer Valley.⁶³ Connecticut is also home to several TDR programs including in the towns of Avon, Windsor, and Hebron.⁶⁴ Rhode Island is also home to a fairly recent TDR program. In 2009, North Kingstown, Rhode Island adopted its TDR program. To assess the value to place on its sending and receiving areas, North Kingstown conducted a market research study. There, one sending unit can equal four to eight receiving units. By placing the additional value on the receiving units, North Kingstown hopes to incentivize the use of TDRs.⁶⁵ Below, the North Kingstown TDR program will be discussed further. New Hampshire is also currently home to TDR programs. According to the Municipal Land Use Regulation Database, the New Hampshire towns of Bedford, Chichester, Dover, Hudson, Lee, and Milton all have a TDR program.

⁶⁰ RICK TAINTOR, TRANSFER OF DEVELOPMENT RIGHTS 8 (April, 2001), <http://www.dem.ri.gov/programs/bpoladm/suswshed/pdfs/tdrreprt.pdf>.

⁶¹ *Id.*

⁶² *Municipal Research and Services Center of Washington, Transfer of Development Rights* (Feb. 2011), available at <http://www.mrsc.org/subjects/planning/majorregulatory.aspx#transfer>.

⁶³ COMMUNITY AND NATURAL RESOURCE PLANNING PROGRAM, INNOVATIVE ZONING TECHNIQUES: TRANSFER OF DEVELOPMENT RIGHTS, FACT SHEET (2012), <http://www.cnp.ucom.edu/documents/FS%204%20Transfer%20of%20Development%20Rights.pdf> (last visited Dec. 04, 2012).

⁶⁴ *Id.*

⁶⁵ *Id.*

B. HOW TO MAKE A TDR PROGRAM WORK

When implementing a TDR program, a few essential elements should be addressed. In a study that looked to the top twenty TDR programs in the United States, there were five top factors in most of the programs: “demand for bonus development, customized receiving areas, strict sending area regulations, few alternatives to TDR, and market incentives.”⁶⁶ The NOAA website briefly explains the essential elements for making a TDR program work. An area where the shoreline remains primarily undeveloped is going to be best suited for a TDR program.⁶⁷ New England has been slow to adapt to TDR programs due in part to land use control being retained at the town level, because it is easier for areas that land use controls are retained at the county or regional level to implement a TDR system.⁶⁸

C. THE BENEFITS OF TDR

There are many advantages to utilizing a TDR program. Simply stated, TDR programs appear to be more fairly utilized than other land preservation methods. A TDR program “encourages orderly growth by compacting development in areas with adequate public services.”⁶⁹ Unlike other land use tools, TDR programs allow the owner of the sending area to

⁶⁶ COMMUNITY AND NATURAL RESOURCE PLANNING PROGRAM, INNOVATIVE ZONING TECHNIQUES: TRANSFER OF DEVELOPMENT RIGHTS, FACT SHEET (2012), <http://www.cnp.uconn.edu/documents/FS%204%20Transfer%20of%20Development%20Rights.pdf> (last visited Dec. 04, 2012).

⁶⁷ *Ocean & Coastal Resource Management, Transfer of Development Rights Program* (Oct. 2, 2012), available at http://coastalmanagement.noaa.gov/initiatives/shoreline_ppr_tdr.html.

⁶⁸ NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, INNOVATIVE LAND USE PLANNING TECHNIQUES: A HANDBOOK FOR SUSTAINABLE DEVELOPMENT, MULTI-DENSITY ZONING 5, http://des.nh.gov/organization/divisions/water/wmb/repp/documents/ilupt_chpt_1.1.pdf (last visited Dec. 04, 2012).

⁶⁹ VALERIE CANTRELL COLAS, THE TRANSFER OF DEVELOPMENT RIGHTS: PRESERVING RURAL LAND AND PROMOTING URBAN RENEWAL STRATEGIES FOR IMPLEMENTATION IN RHODE ISLAND 28 (1994), <http://envstudies.brown.edu/theses/99COLAS.pdf> (last visited Dec. 04, 2012).

keep the actual property and use it for other purposes other than on-site development.⁷⁰ TDR programs are economically feasible and “mitigate the economic impact of land use regulations” and allow landowners a way to recapture some lost economic value when a property is downzoned.⁷¹ Also, TDR programs allow for more control over future development than other land use programs.⁷² However, not only do the landowners of the coastal property, which need to be protected, benefit but also do the developers who are purchasing the density credits. Developers are able to purchase density credits and exceed zoning regulations from landowners and build and develop accordingly without having to resort to more costly methods.⁷³ With that significant benefit to developers, it is important to point out that TDR programs do not replace zoning. However, TDRs will make the implementation of preservation techniques “more politically feasible and easier to implement... a well-constructed TDR program reduces the demand for zoning variances, since developers will use the market, not their connections to the local zoning commission to secure additional development rights.”⁷⁴ Here, the concern is with coastal areas specifically. TDR programs used along the shoreline can “minimize the need for shoreline stabilization structures and redirect development away from erosion-sensitive shorelines.”⁷⁵

⁷⁰ *Id.*

⁷¹ JASON HANLY-FORDE, GEORGE HOMSY, KATHERINE LIEBERKNECHT & REMINGTON STONE, *Transfer of Development Rights Programs: Using the Market for Compensation and Preservation*, available at <http://government.cce.cornell.edu/doc/html/Transfer%20of%20Development%20Rights%20Programs.htm> (last visited Dec. 04, 2012).

⁷² VALERIE CANTRELL COLAS, *THE TRANSFER OF DEVELOPMENT RIGHTS: PRESERVING RURAL LAND AND PROMOTING URBAN RENEWAL STRATEGIES FOR IMPLEMENTATION IN RHODE ISLAND* 28 (1994), <http://envstudies.brown.edu/theses/99COLAS.pdf> (last visited Dec. 04, 2012).

⁷³ JASON HANLY-FORDE, GEORGE HOMSY, KATHERINE LIEBERKNECHT & REMINGTON STONE, *Transfer of Development Rights Programs: Using the Market for Compensation and Preservation*, available at <http://government.cce.cornell.edu/doc/html/Transfer%20of%20Development%20Rights%20Programs.htm>.

⁷⁴ *Id.*

⁷⁵ *Ocean & Coastal Resource Management, Transfer of Development Rights Program* (Oct. 2, 2012), available at http://coastalmanagement.noaa.gov/initiatives/shoreline_ppr_tdr.html.

D. THE CHALLENGES OF TDR

TDRs do have elements that will be met with negative associations, just as with any conservation tool. A TDR program is complex and will take significant effort to establish. To have a successful TDR program, substantial planning is involved. Communities must pre-designate sending and receiving areas. The designation of these areas may cause strife among members of the community. Residents in the receiving area may be hesitant about additional development in their areas; whereas those in sending areas may feel their right to develop is being infringed upon.⁷⁶ A TDR program requires an abundance of data to determine elements like property value. Also, setting up a TDR program is going to cost the municipality a significant amount of money. For a TDR program to function, mechanisms for transferring the (land) credits must be in place. Furthermore, TDR programs can be used by anyone, but only certain buyers are going to be interested in purchasing development rights, and it may give a select set of people control over a majority of the development rights.⁷⁷ To combat credits being owned by a small group of developers, there must be a general “understanding of the local real estate market to ‘price’ development credits correctly so that they are both attractive to developers to buy.”⁷⁸ TDRs are also fairly new, and as with any new tool or technique, will be met with some disapproval.

Beyond the technical struggles associated with creating and maintaining a TDR program, there will likely be political issues to face. Creating a TDR program means zoning will have to

⁷⁶ NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, INNOVATIVE LAND USE PLANNING TECHNIQUES: A HANDBOOK FOR SUSTAINABLE DEVELOPMENT, MULTI-DENSITY ZONING 5, http://des.nh.gov/organization/divisions/water/wmb/repp/documents/ilupt_chpt_1.1.pdf (last visited Dec. 04, 2012).

⁷⁷ *Ocean & Coastal Resource Management, Transfer of Development Rights Program* (Oct. 2, 2012), available at http://coastalmanagement.noaa.gov/initiatives/shoreline_ppr_tdr.html.

⁷⁸ NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, INNOVATIVE LAND USE PLANNING TECHNIQUES: A HANDBOOK FOR SUSTAINABLE DEVELOPMENT, MULTI-DENSITY ZONING 5, http://des.nh.gov/organization/divisions/water/wmb/repp/documents/ilupt_chpt_1.1.pdf (last visited Dec. 04, 2012).

be changed.⁷⁹ Additionally, TDR programs require oversight, meaning there will be costs and time associated with managing the program.

E. HOW CAN COASTAL MUNICIPALITIES MAKE A TDR PROGRAM WORK?

First, communities in both New Hampshire and Rhode Island will have to develop comprehensive plans for implementing TDR programs on the coast. A major portion of the plan will be in designating sending and receiving areas. There are several ways to successfully designate sending and receiving areas. For TDRs to succeed, each community should establish its goals concerning the program- what lands are going to be preserved and where the development rights should be sent. A consensus concerning the goals of the program will benefit the implementation down the road.⁸⁰

In creating a sending area, property owners must have motivation to sell their development rights. Zoning is a tool that can be utilized to acquire a sufficient sending area.⁸¹ To establish receiving areas, density requirements will have to be adjusted. Receiving areas will have to be able to handle a higher demand for density.⁸² Furthermore, TDRs have worked best where areas are a sufficient size, and the real estate market is suited to allow, “relatively free trading of development rights.” Therefore, in smaller markets, like many of those along the

⁷⁹ JASON HANLY-FORDE, GEORGE HOMSY, KATHERINE LIEBERKNECHT & REMINGTON STONE, *Transfer of Development Rights Programs: Using the Market for Compensation and Preservation*, available at <http://government.cce.cornell.edu/doc/html/Transfer%20of%20Development%20Rights%20Programs.htm> (last visited Dec. 04, 2012).

⁸⁰ *Id.*

⁸¹ JASON HANLY-FORDE, GEORGE HOMSY, KATHERINE LIEBERKNECHT & REMINGTON STONE, *Transfer of Development Rights Programs: Using the Market for Compensation and Preservation*, available at <http://government.cce.cornell.edu/doc/html/Transfer%20of%20Development%20Rights%20Programs.htm> (last visited Dec. 04, 2012).

⁸² *Id.*

coast in Rhode Island and New Hampshire, there is a lower probability that a developer will find an “available sending property” to transfer development rights.⁸³

Informing the community is essential for a successful TDR program, “mailings to and public meetings for landowners in sending areas, potential developers and residents of receiving areas are an integral part of the education effort. TDR program staff can also assist people with the legal aspects of the program.”⁸⁴ Additionally, communities must monitor the program closely, which can be handled within each municipality’s government or outsourced.⁸⁵

F. TDR: NEW HAMPSHIRE

Transferred development rights have already been implemented in New Hampshire. Currently, New Hampshire’s use of TDRs is primarily in farming communities. However, two programs in New Hampshire that may serve as the best basis for coastal towns to examine or follow are the TDR programs in the towns of Dover and Lee, New Hampshire.

Dover, New Hampshire is located only twelve miles from Portsmouth, New Hampshire—probably the epitome of coastal New Hampshire. Dover, on the Maine border, has had a TDR ordinance in place since 1990. Dover’s TDR regulation provides for two overlay zones. Dover’s zoning ordinance defines a TDR District as “an area defined as a zoning overlay district, which includes a SENDING AREA and a RECEIVING AREA for the purpose of transferring DEVELOPMENT RIGHTS from a parcel within the SENDING AREA to a parcel within the

⁸³ NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, INNOVATIVE LAND USE PLANNING TECHNIQUES: A HANDBOOK FOR SUSTAINABLE DEVELOPMENT, MULTI-DENSITY ZONING 6, http://des.nh.gov/organization/divisions/water/wmb/repp/documents/ilupt_chpt_1.1.pdf (last visited Dec. 04, 2012).

⁸⁴ JASON HANLY-FORDE, GEORGE HOMSY, KATHERINE LIEBERKNECHT & REMINGTON STONE, *Transfer of Development Rights Programs: Using the Market for Compensation and Preservation*, available at <http://government.cce.cornell.edu/doc/html/Transfer%20of%20Development%20Rights%20Programs.htm> (last visited Dec. 04, 2012).

⁸⁵ *Id.*

RECEIVING AREA.”⁸⁶ Dover has an industrial overlay zone and a residential overlay zone. Dover’s TDR ordinance was “designed to preserve lands with conservation values including but not limited to wetlands, groundwater recharge zones, forested areas, wildlife habitat, farmland, scenic views, historic landmarks and linkages to other such areas.”⁸⁷ In 2001, the city planner stated that Dover’s TDR program was used frequently in the early 1990s, but was not used at all between 1998 and 2001. Basically, Dover TDR ordinance provided that “developers wanting to use the TDR option must apply to use special performance standards.” Under the Dover ordinance each district had specific guidelines to follow. For example, in the “Residential District,” sending areas had to have the potential to be developed and be at least five acres. Also, in Dover, requirements that would otherwise effect development could be waived if developing in a TDR receiving area. For instance, “minimum frontage” standards as well as “maximum density” are relaxed for those operating under TDR guidelines.⁸⁸

Another town that coastal New Hampshire may want to look to is the Town of Lee, New Hampshire. Lee is located only twenty miles off the Atlantic coast and like Dover, is located quite close to Portsmouth. Lee adopted a TDR ordinance in 1994 with preservation goals similar to those of Dover. As far as the use of TDRs in Lee, as of 2001, the TDR ordinance had not been utilized. The Zoning and Code Enforcement Official at the time states that the program may be hindered because of the few receiving areas able to use TDRs.⁸⁹ Like Dover and other communities that have implemented TDR programs, Lee’s TDR program is specifically detailed to best fit the needs of the town. The Town of Lee’s TDR regulations provide that sending and

⁸⁶ DOVER ZONING CODE, TDR DISTRICT DEFINITION 170-26, <http://www.ci.dover.nh.us/code/Zoning%20OrdinanceWITHLINKS.pdf> (last visited Dec. 04, 2012).

⁸⁷ *Smart Preservation, Dover, New Hampshire* (2012), available at <http://smartpreservation.net/dover-new-hampshire/> (last visited Dec. 04, 2012).

⁸⁸ *Id.*

⁸⁹ *Smart Preservation, Lee, New Hampshire* (2012), available at <http://smartpreservation.net/lee-new-hampshire/> (last visited Dec. 04, 2012).

receiving areas “must be contiguous,” and the sending area must be privately owned. There are also specific density requirements unique to the Town of Lee. Though Lee does allow higher density in receiving areas, areas receiving transferred rights must meet all normal code requirements. Lee also included a provision in its TDR ordinance declaring that the Planning Board may determine sending and receiving development rights values on a case-by-case basis. The board should consider the values based on the characteristics of each parcel of land. Interestingly, and applicable to the rolling easement portion of this document, Lee also permits higher density on receiving sites “[w]hen a conservation easement or similar permanent restriction is recorded on the sending site.”⁹⁰

As demonstrated in Lee, communities along New Hampshire’s coast can utilize TDR programs. New Hampshire coastal municipalities will have to identify the areas they wish to protect; these areas will become the “sending areas.” Once the sending areas are determined, a TDR program can take shape.

G. TDR: RHODE ISLAND

Rhode Island is among the states already utilizing TDRs as a land use tool. Rhode Island Zoning Ordinance § 45-24-33 provides, “(b) A zoning ordinance may include special provisions for any or all of the following:...(2) Establishing a system for transfer of development rights within or between zoning districts designated in the zoning ordinance.”⁹¹

TDR programs are currently being utilized in towns such as Narragansett, North Kingstown, and Providence, Rhode Island. In the Town of Narragansett, the Code of Ordinance addresses TDRs. In Narragansett, both the planning board and town council have the discretion to approve TDRs. The Planned Residential District Regulations are designed

⁹⁰ *Id.*

⁹¹ Rhode Island Zoning Ordinance § 45-24-33.

to allow the redesign of approved but vacant subdivisions to transform environmentally inferior developments that would, if developed, create unacceptable habitat loss, water pollution, flooding, infrastructure problems and other effects inconsistent with the Comprehensive Plan including unnecessary loss of open space. Narragansett “offers density incentives to PRDs (planned resident districts) for transferring development rights from developable lots elsewhere in Narragansett that are located in wetlands, coastal resource overlay districts, areas within 200 feet of a “blue line stream” and greenbelts delineated in the Comp Plan. The sending sites can be preserved either by conservation easement or by fee title transfer to the Town.”⁹²

North Kingstown, Rhode Island is located on the Narragansett Bay and is home to harbors, beaches, and historical sites. The town took measures to protect these features by implementing a TDR program in 2008 by amending its zoning ordinance. Thus far, North Kingstown “designated and mapped over 50 sending areas” in a variety of natural habitats. To have land designated as a sending area, landowners must submit “a yield plan demonstrating the number of detached residential units that would be permitted on the sending site without the use of any density-enhancing code provisions such as inclusionary zoning or conservation developments.” The Planning Commission determines any questionable sites and further detailed zoning decisions. Similar to the Town of Lee, New Hampshire, North Kingstown also has a “contiguous” provision. In North Kingstown, “the land to be preserved must be contiguous and located adjacent to open space on neighboring parcels.” Further, North Kingstown property owners who wish to transfer credits have to create a “master plan.” This plan will detail what the property owner wishes to do- transfer

⁹² *Smart Preservation, Narragansett, Rhode Island* (2012), available at <http://smartpreservation.net/narragansett-rhode-island/> (last visited Dec. 04, 2012).

some credits, transfer all credits, etc. However, landowners who retain some of their development rights can later convert them to transferrable rights. Once the Planning Commission approves the sending area plan, the landowners of the sending area will record a “deed restriction” for the property. The North Kingstown Planning Director then gives the landowner a “certificate of development rights.” As of now, North Kingstown’s TDR program ordinance focuses primarily on agriculture property. However, there are avenues to protect non-agricultural property.⁹³

Rhode Island’s capital has also adopted a TDR program. Providence, Rhode Island’s largest city, implemented a TDR program through zoning changes in order to preserve historical sites in the city. While historical character is not the focus of TDRs for purposes of this paper, in a state like Rhode Island, it may be useful to see as many examples within the state as possible.⁹⁴

As illustrated in towns like Dover and North Kingstown, TDRs can work in New Hampshire and Rhode Island. Further, TDR programs could be used on the coast. First, coastal towns need to identify the areas that require protection. The areas to be protected will become the “sending areas.” Once the sending areas are determined, a TDR program can take shape.

Just as important is the identification of the receiving area. Municipalities must decide where to locate higher densities that will be coming from the sending areas. This will be one of the more difficult issues that the municipality will face. In order to lessen the difficulty, community members should be given as much detail upfront as possible. The “receiving areas” must be able to support an increase in density. A higher density areas means more demand

⁹³ *Smart Preservation, North Kingstown, Rhode Island* (2012), available at <http://smartpreservation.net/north-kingstown-rhode-island/> (last visited Dec. 04, 2012).

⁹⁴ *Smart Preservation, Providence Rhode Island* (2012), available at <http://smartpreservation.net/providence-rhode-island/> (last visited Dec. 04, 2012).

placed upon the local infrastructure. Utilities in high-density areas will be affected including, water supply, roads with increased traffic, as well as, many other infrastructures.

Written bylaws and ordinances will become the basis of the TDR program. Such written regulations should be clear, coherent, and cohesive. It should be evident to the citizens of the municipality what the law is. Easily comprehensible regulations and ordinances make those wishing to transfer density credits aware of the process they must go through. Further, the market conditions in the towns must be sufficient enough to support a TDR program. For this, the town should use qualified real estate specialists. Further, the coastal towns should consider performing a Real Estate Market Analysis.⁹⁵ Many towns currently using a TDR program have utilized a TDR Credit Bank. In a credit bank, landowners may store their development rights there where developers can find and purchase them.

Both New Hampshire and Rhode Island operate on a town level. Those individuals wishing to implement a TDR program will have to contact the necessary people to change local land ordinances. In New Hampshire, residents should contact the local planning board. The planning board then may suggest changes to local zoning ordinances to the town government.⁹⁶

Once a TDR program is established, municipalities must be prepared to install adequate committees and/or boards for overseeing the TDR program. Beyond this, all town and state agencies need to have the ability to work together. Not only do those responsible for zoning and development have to work together to ensure a successful TDR program, but they must also work with agencies responsible for environmental and health protection.

⁹⁵ URBAN PARTNERS, REAL ESTATE MARKET ANALYSIS (Dec. 6, 2006), <http://www.woolwichtwp.org/userfiles/10-Real%20Estate%20Market%20Analysis%20DRAFT.pdf>.

⁹⁶ *New Hampshire Town and City Article Index, Zoning Ordinance Changes* (Jan. 2003), available at http://www.nhlgc.org/publications/item_detail.asp?TCArticleID=205.

6. ALTERNATIVE STRATEGIES: NEW HAMPSHIRE AND RHODE ISLAND

There are many alternative strategies available to New Hampshire and Rhode Island for combatting climate change and the subsequent sea-level rise. However, the use of rolling easement and TDRs is a growing practice. Using one or both, paired with some other sorts of land preservation tools, these New England states will be able to transform with the rising sea. Although successful alone, rolling easements can be paired with other coastal management tools to be more effective. Other coastal management tools include setbacks and coastal building restrictions.⁹⁷

7. CONCLUSION

Most coastal land use research seems to suggest that no one solution is going to solve any given coastal community's sea-level rise problems. However, it does appear that approaching land use techniques with an open mind paired with a willingness to try a variety of measures together will have an impact on coastal land use.

⁹⁷ *Ocean and Coastal Management in New Hampshire: New Hampshire's Coastal Program* (Nov. 14, 2012), available at <http://coastalmanagement.noaa.gov/mystate/nh.html>.