

ROLLING EASEMENTS AS A VIABLE TOOL TO ADDRESS RISING SEA LEVELS IN US COASTAL COMMUNITIES

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INTRODUCTION

Over the next 30 years, sea levels along the US coastline are projected to rise by 10 to 12 inches, on average.¹ Remarkably, this projection is equivalent to

1. William V. Sweet, et al., *Global and Regional Sea Level Rise Scenarios for the United States: Updated Mean Projections and Extreme Water Level Probabilities Along U.S. Coastlines* (Nat’l Oceanic & Atmospheric Admin., 2022), <https://oceanservice.noaa.gov/>
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the total sea level rise observed over the past 100 years.² As greenhouse gas emissions and global surface temperatures increase, the combined effects of thermal expansion and ice melt will prolong sea level rise into the foreseeable future.³ Rising sea levels pose a threat to coastal communities by inundating low-lying lands, eroding beaches, intensifying coastal flooding, and increasing the salinity of estuaries and tidal wetlands.⁴ Sea level rise, coupled with extreme weather events, will undoubtedly continue to cause severe property damage in the future. As shorelines shift with changing sea levels, coastal municipalities must be able to balance private property rights against the public's right to future access.

To protect their property from the threat of rising sea levels, coastal owners generally implement two types of armoring practices: hard armoring, which uses structures like seawalls, jetties, and bulkheads; and soft armoring, which uses soft, natural materials like sand and vegetation.⁵ In fact, armoring structures cover at least one-tenth of California's 1200-mile coastline, including one-third of its southern coast.⁶ While shoreline armoring may temporarily protect coastal property from rising sea levels, armoring structures ultimately damage that which they seek to protect by eroding beaches below walls, blocking public access, destroying nursery habitats of estuarine species, and diminishing inland property values by obstructing oceanfront views.⁷

Another tool to combat sea level rise in coastal communities is the implementation of rolling easements. Rolling easements arise from regulations, interests in land acquired from property owners who want to preserve the value of their realty, or environmental interests that allow wetlands, beaches, or access along the shore to migrate inland.⁸ Generally, under a rolling easement, property owners yield a right of way to naturally migrating shorelines with the interest in land attaching to the shoreline no matter where it moves.⁹ Accordingly, the public

hazards/sealevelrise/noaa-nos-techrpt01-global-regional-SLR-scenarios-US.pdf [https://perma.cc/U6AT-8QYL].

2. *Id.* at 1.

3. Gerald A. Meehl, et al., *How Much More Global Warming and Sea Level Rise?*, 307 *Sci.* 1769, 1771 (2005).

4. James G. Titus, et al., *State and Local Governments Plan for Development of Most Land Vulnerable to Rising Sea Level along the U.S. Atlantic Coast*, 4 *ENV'T RSCH. LETTERS* 1, 2 (2009).

5. James G. Titus, *Rolling Easements* (U.S. Env't Prot. Agency, 2011), <http://water.epa.gov/type/oceb/cre/upload/rollingeasementsprimer.pdf> [https://perma.cc/T32R-N7PJ].

6. Molly L. Melius & Margaret R. Caldwell, *2015 California Coastal Armoring Report: Managing Coastal Armoring and Climate Change Adaptation in the 21st Century* 18 (Stan. L. Sch. Env't & Nat. Res. L. & Pol'y Program, Working Paper, 2015), <https://law.stanford.edu/wp-content/uploads/2015/07/CalCoastArmor-FULL-REPORT-6.17.15.pdf> [https://perma.cc/7524-4E7H].

7. Serena Liss, *Shoreline Armoring and the Public Trust Doctrine: Balancing Public and Private Interests as Seas Rise*, 46 *ENV'T L. REP. NEWS & ANALYSIS* 10033 (2016).

8. Titus, *supra* note 5, at 166.

9. James G. Titus, *Rising Seas, Coastal Erosion, and the Takings Clause: How to Save Wetlands and Beaches Without Hurting Property Owners*, 57 *MD. L. REV.* 1279, 1313 (1998).

retains a reversionary interest¹⁰ in the moving shoreline.¹¹ Under the Public Trust Doctrine,¹² shoreline boundaries only shift from gradual events—variations in the height and width of sandy beaches, shoreline erosion or accretion, and uplift or subsidence of land—which change the location of where the mean high tide line meets the shoreline.¹³ Conversely, rolling easements may also be created when boundaries shift suddenly through avulsive events like intense storms that cause acute flooding.¹⁴ To this end, rolling easements are well suited to a world where climate change is intensifying and increasing the likelihood of extreme weather events like hurricanes and severe storms.

Texas was the first US state to adopt rolling easements through the Texas Open Beaches Act in 1959.¹⁵ The Act provided the public with a “free and unrestricted right” to the area extending from the “line of mean low tide to the line of vegetation bordering on the Gulf of Mexico.”¹⁶ Such a right could be acquired via prescription, dedication, or by virtue of a continuous right in the public.¹⁷ Essentially, the Act imposed a public beach access easement on all property up to the natural vegetation line, irrespective of whether such property had ever been used by the public.¹⁸ However, in 2012, the Texas Supreme Court’s ruling in *Severance v. Patterson* overturned longstanding judicial and statutory precedent by rejecting the definition of rolling easements under the Texas Open Beaches Act.¹⁹ The *Severance* court held that private-public property boundary demarcations follow the common law’s definition, which only considers shifts in the shoreline through gradual processes like erosion and accretion.²⁰ To this end, the court reasoned, “avulsive events such as storms

10. A reversionary interest is the grantor’s right to resume ownership if and when certain conditions are met. For example, a deed may include terms triggering a change in ownership back to the grantor if the grantee does not comply with the covenants of the deed. Patricia L. Pregmon & Andrew M. Loza, *Reversionary Interest*, WECONSERVEPA (2022), <https://conservationtools.org/guides/21-reversionary-interest> [https://perma.cc/RMB4-WSVE] (last visited April 25, 2022).

11. Titus, *supra* note 9, at 1371.

12. The public trust doctrine provides that a state holds in trust for public use the “waters of the state owned by and available to all citizens equally for the purposes of navigation, hunting, fowling, and fishing, and that the trust is not invalidated by private ownership of the underlying land.” Titus, *supra* note 5, at 166.

13. Charles Lester, *Protecting Public Trust Shoreline Resources* (Marine Science Institute, 2022), <https://documents.coastal.ca.gov/assets/slr/Lester%20Prot%20Public%20Trust%20Res%20Face%20of%20SLR.pdf> [https://perma.cc/7HBR-PW7S].

14. BARTON H. THOMPSON ET AL., *LEGAL CONTROL OF WATER RESOURCES: CASES AND MATERIALS* 633 (W. Acad. Publ’g, 6th ed., 2018).

15. Richard J. McLaughlin, *Rolling Easements as A Response to Sea Level Rise in Coastal Texas: Current Status of the Law After Severance v. Patterson*, 26 J. LAND USE & ENV’T. L. 365, 369 (2011).

16. TEX. NAT. RES. CODE ANN. § 61.011(a) (West 2019).

17. *Id.*

18. McLaughlin, *supra* note 15, at 367.

19. *Severance v. Patterson*, 370 S.W.3d 705 (Tex. 2012).

20. *Id.* at 723.

and hurricanes that drastically alter preexisting littoral boundaries do not have the effect of allowing a public use easement to migrate onto previously unencumbered property.”²¹ Although the court’s ruling in *Severance* limited the application of rolling easements in Texas, rolling easements, as established under the Texas Open Beaches Act, remain a viable tool to address sea level rise in US coastal communities. Considering that more than 40 percent of Americans currently live in coastal counties²² and extreme weather events are projected to become even more frequent in the future due to climate change, incorporation of rolling easements into coastal management plans will become increasingly necessary to protect public safety, minimize future recovery costs, and preserve coastal environments and economies.

This Article will first evaluate the viability of rolling easements as a tool to combat rising sea levels in US coastal communities. Then, it will propose how coastal municipalities can use the rolling easement doctrine established under the Texas Open Beaches Act as a model for balancing dual responsibilities of protecting private property rights and safeguarding public access to coastal waters. Finally, it will consider applications of rolling easements to states positioned along the Atlantic and Pacific coasts, namely in New Jersey and California, where sea levels are expected to rise considerably in upcoming decades and profoundly affect the lives of tens of millions of Americans.

I. VIABILITY OF ROLLING EASEMENTS AS A MITIGATION TOOL TO COMBAT SEA LEVEL RISE

A. *Authority for Rolling Easements*

Rolling easement provisions can be streamlined relatively seamlessly into state statutes, zoning ordinances, or environmental regulations that have similar objectives. State legislatures have plenary authority to regulate land use and activities in intertidal zones including prohibiting or discouraging new shore protection structures.²³ For example, South Carolina prohibits new seawalls along the Atlantic Ocean,²⁴ while Texas discourages all structures that interfere with coastal processes along the Gulf of Mexico.²⁵ States also commonly adopt permit programs for shoreline protection as part of their wetlands, mudflat, or beach programs.²⁶ In Texas, rolling easements are directly incorporated into all executory contracts where a purchaser “expressly acknowledges that he has acquired an easement up to the vegetation line and that structures

21. *Id.* at 725.

22. Nat’l Oceanic & Atmospheric Admin. Off. for Coastal Mgmt., *Fast Facts: Economics and Demographics*, <https://coast.noaa.gov/states/fast-facts/economics-and-demographics.html> [<https://perma.cc/V2GY-H673>] (last visited April 25, 2022).

23. Titus, *supra* note 5, at 89.

24. S.C. CODE ANN. § 48–39–290 (West 2020).

25. TEX. NAT. RES. CODE ANN. § 61.013 (West 2019).

26. Titus, *supra* note 5, at 89.

seaward of the vegetation line or that become seaward as a result of natural processes are subject to a lawsuit by the state to remove such structures.”²⁷ For example, the following warning is listed for every transaction in Texas conveying land positioned seaward of an Intracoastal Waterway:

If the property is in close proximity to a beach fronting the Gulf of Mexico, the purchaser is hereby advised that the public has acquired a right of use or an easement to or over the area of any public beach by prescription, dedication, or presumption, or has retained a right by virtue of a continuous right in the public since time immemorial, as recognized in law and custom.²⁸

Additionally, zoning ordinances in coastal and coastal overlay zones may include restrictions on shore protection and armoring.²⁹ In Virginia, zoning ordinances “provide for . . . the safety from flood . . . for the preservation of agricultural and forest lands and other lands of significance for the protection of the natural environment.”³⁰ Here, localities can create zones regulating “the use of land, buildings, structures, and other premises for agricultural, business, industrial, residential, flood plain, and other specific uses . . . and provide adequate provisions for drainage and flood control.”³¹ Floodplain and wetland regulations also discourage development to avoid harm to beaches, mudflats, or vegetated wetlands and to allow natural migration inland.³² Such regulations operate in concert with zoning practices to protect low, dry lands that gradually become wetlands.³³

The extent of armoring restrictions varies by jurisdiction. In northeastern (MA, RI, NJ, ME), south-Atlantic (NC, SC), and western states (OR, WA) and in Texas, hard armoring (e.g., seawalls, jetties, and bulkheads) is prohibited within dunes and in some estuaries, while soft armoring (e.g., beach renourishment and grade elevation) is allowed so long as these practices offset erosion without impairing beach access.³⁴ Given California’s dedication to providing public beach access and promoting ecological stability, some may find it surprising that California’s Coastal Act permits hard armoring. However, such armoring is allowed under the Act to protect existing structures or structures in danger from erosion or in circumstances where there are no other environmentally less damaging, feasible alternatives.³⁵ It should be noted that a state’s public trust rights always trump armoring rights. In cases where armor-

27. McLaughlin, *supra* note 15, at 372.

28. TEX. NAT. RES. CODE ANN. § 61.025 (West 2019).

29. Titus, *supra* note 5, at 41.

30. VA. CODE ANN. § 15.2–2280, 2283, 2241(3) (West 2016).

31. *Id.*

32. Titus, *supra* note 5, at 46.

33. *Id.* at 89.

34. *Id.* at 46.

35. Chloe Angelis, *The Public Trust Doctrine and Sea Level Rise in California: Using the Public Trust to Restrict Coastal Armoring*, 19 HASTINGS W. NW. J. ENVTL. L. & POL’Y 249, 255 (2013).

ing privileges are overly broad and therefore violate public trust principles by encroaching on public lands below the “ordinary high-water mark,”³⁶ the interest of the public trust prevails to extinguish any armoring privileges regardless of whether an administrative permit was granted.³⁷

In some situations, coastal property owners may decide to pursue alternatives to armoring such as minimally invasive, living shorelines which reduce erosion, decrease wave energy, and filter runoff.³⁸ For example, property owners recently proposed positioning mangroves on either side of a road to prevent washout during storm surges and protect properties along coastlines at Miami’s Morningside Park.³⁹ Living shorelines in the form of riprap breakwaters,⁴⁰ oyster reef balls,⁴¹ and marshes are quite popular in Texas, including in Galveston Island, where such materials help stabilize shorelines and prevent property damage.⁴² Additionally, property owners may provide means for public access such as walkways or promenades along the crests of armoring structures. In such instances, it would seem counterproductive to restrict these activities under a rolling easement doctrine, since they neither impair public access nor disturb environmental function.

36. The “ordinary high-water mark” is defined as the “demarcation between publicly owned land along the water and privately owned land.” The demarcation is typically based on the mean high-water line. However, it can also be based on the “line of vegetation, the water mark caused by wave run-up, or surveys of elevation of mean high-water” depending on jurisdiction. Titus, *supra* note 5, at 165.

37. *Id.* at 273.

38. Erika Bolstad, *Living Shorelines’ Will Get Fast Track to Combat Sea Level Rise*, SCI. AM. (July 6, 2016), <https://www.scientificamerican.com/article/living-shorelines-will-get-fast-track-to-combat-sea-level-rise> [<https://perma.cc/D4Y2-TF2B>].

39. Alex Harris, *Can mangroves save Miami? ‘Living shorelines’ a sea rise solution struggling to take root*, MIAMI HERALD (April 15, 2022), <https://www.miamiherald.com/news/local/environment/article260166170.html#storylink=cpyhttps://www.miamiherald.com/news/local/environment/article260166170.html> [<https://perma.cc/3ZFB-U5MQ>].

40. Riprap is defined as a “layer of large stones that protects soil from erosion in areas of high or concentrated flows.” By preventing erosion, riprap is oftentimes used in coastal regions to help stabilize shorelines. *Stormwater Best Management Practice: Riprap*, U.S. Env’t Prot. Agency (December 2021), <https://www.epa.gov/system/files/documents/2021-11/bmp-riprap.pdf> [<https://perma.cc/H33J-EBVM>] (last visited, February 4, 2023).

41. Oyster reef balls are artificial, concrete structures installed in coastal regions experiencing high wave energy. With their abundant open spaces, they attract oyster larva which naturally form reefs along the shoreline. Because the vertical growth of oyster reefs typically exceeds the rate of expected sea level rise, they can function as wave breaks to protect shorelines against erosion. *Oyster Reef Balls: Strengthening Shorelines with Oyster Communities*, TAMPA BAY WATCH, <https://tampabaywatch.org/restoration/oyster-communities/oyster-reef-balls> [<https://perma.cc/MRM9-SNTM>] (last visited February 4, 2023); Antonio B. Rodriguez, et al., *Oyster Reefs Can Outpace Sea Level Rise*, 4 NAT. CLIM. CHANGE 493-97 (2014).

42. Kelsey Calvez, *Aw Shucks: Rebuilding Oyster Reefs along the Texas Coast*, PENN. ST. UNIV. (October 13, 2021), <https://storymaps.arcgis.com/stories/d5fc90c87f0d41b18a7416dbf5f3d8ff> (last visited, February 4, 2023).

Government agencies can also create rolling easements via acquisition or dedication. In existing communities which have limited public beach access or have non-rolling beach access, government agencies can acquire rolling easements by: (1) purchase of an easement from a willing buyer, (2) donation of a rolling easement from a landowner, (3) eminent domain, or (4) as a condition for a permit to develop land (i.e., exaction).⁴³ In new communities with public beach access, developers often dedicate a rolling affirmative easement on the dry beach through deed language expressly stating that the “easement shifts with the vegetation line or extends inland of the mean high tide line and shifts as the mean high tide line shifts.”⁴⁴ In Texas and Florida, government agencies can ask a court for permission to establish a rolling easement, adjust a property line, or remove a shore-protection structure on common law grounds.⁴⁵ In Washington state, rolling easements may be granted by a court to Native American tribes where the US owns tidal lands in trust for the tribe.⁴⁶ While eminent domain is a popular method for establishing easements in New Jersey, it is prohibitively expensive in California.⁴⁷

Whether or not an interest acquired by a government agency to establish a rolling easement is recognized as a property interest depends on how it is acquired. In many states, exacted conservation easements are not recognized as a property interest due to the issue of voluntariness.⁴⁸ To this end, exacted conservation easements do not arise out of personal motivations to protect the value of the land, but are, instead, entered into unwillingly where property owners are generally coerced into creating or contributing to exacted conservation easements.⁴⁹ Per the court’s ruling in *Nollan v. California Coastal Commission*, unless an exaction “serves the same governmental purpose as [would a] development ban, the building restriction is not a valid regulation of land use but an out-and-out plan of extortion.”⁵⁰ Consequently, in *Nollan*, the court considered an exaction requiring immediate access along the dry beach in exchange for a building permit to be a taking.⁵¹ This issue, however, can be averted if a developer conveys a rolling easement to a land trust.⁵² Further, the power of governments to create rolling easements via eminent domain is limited when a rolling easement is purchased shortly after issuance of a rolling

43. Titus, *supra* note 5, at 59.

44. *Id.*

45. *Id.* at 61.

46. *Id.*

47. Carolyn Ginno, *Do Mess with Texas . . . ? Why Rolling Easements May Provide a Solution to the Loss of Public Beaches due to Climate Change-Induced Landward Coastal Migration*, 8 SAN DIEGO J. CLIMATE & ENERGY L. 225, 243 (2017).

48. *Id.* at 101.

49. Jessica Owley, *The Enforceability of Exacted Conservation Easements*, 36 VT. L. REV. 261, 269 (2011).

50. *Nollan v. Cal. Coastal Comm’n*, 483 U.S. 825, 837 (1987).

51. *Id.*

52. *Id.*

easement regulation.⁵³ Per the court's ruling in *Riggs v. Long Beach Township*, when the government issues a regulation reducing property values in a concerted effort to take the land through eminent domain, a court may invalidate the regulation or award the owner the fair market value of his property before the regulation was adopted.⁵⁴ There may also be questions surrounding whether a government regulation prohibiting shoreline protection or mandating the removal of structures constitutes an unconstitutional taking requiring just compensation. The takings issue will be addressed in exhaustive detail in Part II.

B. *Property Rights Considerations Surrounding Rolling Easements*

In the context of rolling easements, it is important to consider fundamental property rights questions including: which private property rights roll inland under a rolling easement doctrine? Would rolling design boundaries based on time, rates of shoreline migration, or elevation above sea level better protect private property interests than current designs by reducing risks associated with ownership? Once a rolling design boundary is created, what limitations can be imposed on private property rights seaward of the boundary? If a submerge date is realized much earlier or later than projected, how can property owners be protected?

Rolling design boundaries define the landward boundary of certain rights or restrictions in a rolling easement.⁵⁵ There are three ways in which rolling design boundaries can be established. Traditionally, rolling design boundaries are determined by existing public access (or coastal ecosystem) shoreline boundaries that migrate inland.⁵⁶ These boundaries prohibit protection of structures on or seaward of dunes, require the removal of existing structures if they encroach seaward of the boundary between public and private land (e.g., mean high tide line), and limit new development within a given distance inland of the dune vegetation line.⁵⁷ Alternatively, a rolling design boundary can be established in the area of public access initially shrinking before a shoreline begins migrating inland from erosion.⁵⁸ This permits property owners to continue to occupy the coastal area but prohibits shore protection practices in the area.⁵⁹ Finally, rolling design boundaries can be determined by the area landward of the current public access boundary.⁶⁰ Here, private-public boundaries are redesigned to provide the public with enhanced future access along the shore.⁶¹

53. *Riggs v. Long Beach Township*, 538 A.2d 808 (N.J. 1988).

54. *Id.*

55. Titus, *supra* note 5, at 166.

56. *Id.* at 115.

57. *Id.* at 118.

58. *Id.* at 120.

59. *Id.*

60. *Id.* at 122.

61. *Id.* at 115.

Titus has proposed alternate rolling design boundaries based on time, shore migration, or elevation above sea level that might be better suited to the needs of coastal property owners.⁶² For boundaries based on time, an easement allowing shore protection for a specified period would increase certainty in a property's value for current and future buyers and sellers of a property subject to a rolling easement. Predetermined rates of shore migration used in rolling design boundaries would also provide property owners with greater certainty surrounding their land tenure, especially in vulnerable coastal areas which are particularly susceptible to inundation in the immediate future. For rolling design boundaries based on elevation above sea level, deeds with conditions specifying that rolling design boundaries must reset inland when sea level rises by a given amount above current levels would similarly increase certainty for current and future owners of coastal property.

Once a rolling design boundary is created, a property owner must be aware of the limitations imposed on his private property rights. Depending on jurisdiction, rolling easements may impose the following restrictions on owners positioned seaward of a rolling boundary: (1) limits on shore protection including hard- and soft-armoring; (2) prohibitions on new development; (3) removal of pre-existing structures including homes, utilities, retaining walls, driveways, etc.; (4) public access provisions; and (5) "subject to" provisions for developers and prospective buyers of coastal property.⁶³ However, some restrictions imposed by rolling easements may be relaxed or even ignored under certain circumstances. As mentioned, many jurisdictions allow shore protection in circumstances where a protection mechanism offsets erosion without impairing access (e.g., beach renourishment) or is minimally invasive and maintains ecological function (e.g., living shoreline). Additionally, structure removal may be delayed to accommodate a landowner's interests or if a local government or land trust lacks the resources or will to remove such structures. To this end, municipal budgets are limited in how much money they can allocate towards structure removal, particularly when municipalities prioritize more urgent matters involving public safety.

Furthermore, coastal property owners will likely voice fierce opposition to crush any political will behind structure removal, especially in states where recalls are common like California. In fact, in the city of Del Mar, city council members unanimously struck down any modifications to their adaptation plan, including those calling for the removal of structures as an option to combat rising sea levels.⁶⁴ City officials rebuffed Coastal Commission requests to incorporate such modifications into the city's adaptation plan, conclud-

62. Titus, *supra* note 5, at 115.

63. *Id.* at 123–25.

64. Phil Diehl, *California Coastal Regulators Blast Del Mar for Rejecting "Retreat" From Sea Level Rise*, L.A. TIMES (October 18, 2019), <https://www.latimes.com/environment/story/2019-10-18/coastal-commission-blasts-del-mar-for-stance-on-sea-level-rise> [<https://perma.cc/53DF-MKY3>].

ing that they were: “simply impractical due to the high property values in the city.”⁶⁵ According to Del Mar Mayor Dave Drucker, “the number of properties and the expense at purchasing these properties is too high . . . where would these people move . . . who would be liable for losses when beachfront properties in Del Mar are valued at over \$20 million dollars?”⁶⁶ Imperial Beach Councilmember Ed Spriggs echoed Mayor Drucker’s concerns about the possibility of incorporating managed retreat into future local coastal management plans (LCP): “the words ‘managed retreat’ evoke fears that people will lose their homes, and this stops any rational discussion of preparing for sea level rise . . . there should be no mandate requiring managed retreat or planned relocation on a large scale in LCPs.”⁶⁷

Both Mayor Drucker and Councilmember Spriggs concede that coastal residents do not deny that sea levels are rising, but, instead, take issue with projections about the timing of sea level rise, including when residents should expect rising sea levels to have direct impacts on them and their properties.⁶⁸ As noted by Mayor Drucker, “Del Mar residents will be more interested in incorporating managed retreat mechanisms when they see actual impacts of sea level rise on a more weekly or yearly basis, and it is not some theoretical event far into the future.”⁶⁹ Lastly, managed retreat mechanisms are often-times imposed upon coastal property owners against their will which further explains their staunch opposition to managed retreat plans. As observed by Professor Phillip King, “when you ask people to leave their homes, even if you fully compensate them 100% economically, you will still pull them away from their communities which complicates managed retreat efforts.”⁷⁰ Apparently, Del Mar and Imperial Beach officials understood that any discussion of managed retreat mechanisms like rolling easements would likely cost them their political seats in the future and ceded concerns over community-wide impacts of rising sea levels to the interests of private property owners.

Issues involving insurers who may stop offering coverage in risky coastal areas, the relocation of taxpayers who fund the city government through property taxes, and flooding in areas behind removed or relocated homes also thwart municipal efforts to implement rolling easements in coastal communities.⁷¹

65. *Id.*

66. *Coastal Cities Wrestling with ‘Managed Retreat’ Ramifications of a Rising Sea*, KPBS Public Media (July 31, 2019), <https://www.kpbs.org/news/midday-edition/2019/08/01/coastal-cities-managed-retreat-rising-sea-levels> [<https://perma.cc/DV76-M3LM>].

67. *Id.*

68. *Id.*

69. *Id.*

70. Lindsey Smith, *California’s radical plan to defend homes from sea level rise: move them*, S.F. CHRON. (Apr. 28, 2022), <https://www.sfchronicle.com/travel/article/California-coast-sea-level-rise-17091737.php> [<https://perma.cc/UEC7-7ULN>].

71. Rosanna Xia, *The California coast is disappearing under the rising sea. Our choices are grim*, L.A. TIMES (July 7, 2019), <https://www.latimes.com/projects/la-me-sea-level-rise-california-coast> [<https://perma.cc/J6XK-T3BT>].

Homeowners are typically offered insurance policies, hazard grants, and federal relief to rebuild, not to relocate.⁷² As rising sea levels threaten coastal properties, the risks of home ownership increase which drive up the price of insurance premiums. Insurers may stop covering risky properties altogether, shifting the risks of home ownership to the states and ultimately to the taxpayers.

To address this, renowned legal scholar Joseph Sax suggested a surety bond or sinking fund to serve as a compensation mechanism to property owners in advance of the submerge date (date at which a rolling design boundary naturally migrates inland of a structure on a parcel of land subject to a rolling easement).⁷³ The proceeds from the fund could later be invested and provided to the property owner who would assume risks associated with sea level rise.⁷⁴ Should sea levels rise more slowly than expected, then the owner would be paid more than what the property was worth.⁷⁵ On the other hand, should sea levels rise more rapidly than expected or should the property owner continue to make improvements as the submerge date approaches, then the owner would be paid less than what the property was worth.⁷⁶

While Sax's proposal still awaits adoption, it offers an innovative approach that converts the risk of coastal property loss into an annual buyout mechanism, which would be more politically expedient than conventional, uncompensated rolling easement policies. The closest any state has come to implementing a compensation mechanism is Texas through its rolling easement policy, which covers up to \$50,000 dollars for home relocation costs.⁷⁷ Under this policy, homes encroaching seaward of dune vegetation lines are relocated to new land parcels on the bay side of the dune line.⁷⁸ While limitations on property rights are imposed by rolling easements, they can be relaxed under certain circumstances like when a protection mechanism offsets erosion without impairing access (e.g., beach renourishment) or is minimally invasive and maintains ecological function (e.g., living shoreline). Consequently, rolling easements are more palatable to property owners than other adaptation tools used to address rising sea levels like no-development easements.

C. *Cost-Benefit Analysis of Rolling Easements*

Rolling easements have long been proposed as a means of combating rising sea levels in coastal communities. Rolling easements adjust private property lines landward when sea levels rise to defined benchmarks at some

72. *Id.*

73. Joseph L. Sax, *The Fate of Wetlands in the Face of Rising Sea Levels: A Strategic Proposal*, 9 UCLA J. ENVTL. L. & POL'Y 143, 158 (1991).

74. *Id.*

75. *Id.*

76. *Id.*

77. Titus, *supra* note 5, at 155.

78. Sax, *supra* note 73, at 143.

submerge date.⁷⁹ To preserve public access, rolling easements typically prevent new construction and require removal of structures impairing access.⁸⁰ Additionally, rolling easements expand the public trust to include shoreline shifts from avulsive processes like hurricanes, which is especially important in a future where storm events are expected to become more frequent and intense due to climate change.⁸¹

During the 2016 El Niño season in northern California, Pacifica residents were caught off guard when storm waves broke through heavily armored seawalls, subsequently causing \$16 million dollars in property damage—nearly half of the town's operating budget.⁸² Shortly thereafter, Pacifica officials began to reconsider current armoring strategies that proved to be largely inadequate in holding back the sea from strong storm waves. To this end, officials seriously considered incorporating climate adaptation options like rolling easements into local coastal management plans.⁸³ By removing or relocating current properties and steering new development away from areas at high risk of future inundation from rising sea levels, rolling easements could minimize losses by anticipating rather than reacting to future coastal property damage from rising sea levels.

Rolling easements are an appealing tool for addressing rising sea levels, because they provide benefits to coastal property owners and the public alike. To this end, rolling easements allow coastal wetlands and beaches to migrate naturally while, at the same time, give coastal property owners the opportunity to develop and beneficially use their property in the years preceding inundation.⁸⁴ Accordingly, rolling easements impose no costs on owners until sea levels actually rise.⁸⁵ In effect, rolling easements encourage rational property owners to sell rather than to renovate or improve their property as inundation becomes increasingly apparent in order to minimize economic losses from property damage. Hence, rolling easements give a property owner the flexibility of being able to develop before inundation is expected and to sell once inundation becomes likely. Indeed, rolling easements are preferable to no-development easements which prohibit the development or profitable use of the land by property owners.⁸⁶

Additionally, rolling easements allow time for costs associated with sea level rise to be incorporated into reasonable investment-backed expectations.⁸⁷ For example, Texas requires warnings for all executory contracts that shore erosion may move the public beach to where a buyer's property is located and

79. Titus, *supra* note 5, at 23.

80. *Id.* at 15.

81. *Id.* at 37.

82. Xia, *supra* note 71.

83. *Id.*

84. Titus, *supra* note 5, at 151.

85. *Id.* at 152.

86. *Id.*

87. *Id.*

that the state can force a buyer to remove the property and pay for removal should the public beach migrate in the future.⁸⁸ Hence, rolling easements give property owners advanced warning that their properties are subject to removal so that they can sell in advance of inundation and not lose significant investment tied to improvements on their land.

Finally, rolling easements generally prohibit or severely restrict coastal armoring.⁸⁹ To this end, a rolling easement could require the removal of pre-existing structures seaward of a specific migrating shoreline (e.g., dune vegetation line, mean high-water mark, or the upper boundary of tidal wetlands).⁹⁰ As mentioned, rolling easements provide benefits to the public by preventing erosion of beaches below walls, obstruction of public access, and destruction of nursery habitats of estuarine species to minimize damage to fragile and dynamic environmental resources.⁹¹ Accordingly, rolling easements are preferable to hard- (e.g., seawalls) and soft- (e.g., beach renourishment) armoring which steepen beaches and increase coastal erosion.⁹² Moreover, by prohibiting or severely restricting armoring, rolling easements provide benefits to private property owners by preserving inland property values which are significantly reduced from obstructed beachfront views when coastal property owners armor their properties.⁹³ Such restrictions would also presumably provide benefits to both private property owners and the public by reducing costs to municipalities for upkeep of shoreline protection structures.

However, it should be noted that rolling easements do impose direct costs on municipalities via purchase, inspection, management, and relocation and litigation costs when owners attempt to avoid the terms of a rolling easement.⁹⁴ Further, implementation of rolling easements is oftentimes marred by politics. In the Pacifica example described earlier, even the prospect of rolling easements resulted in mayors being ousted, planning documents being rewritten, and recall campaigns being waged against city officials.⁹⁵ Indeed, Pacifica property owners, egged on by aggressive realtors, flooded city meetings and organized against rolling easements over concerns that their valuable properties would be “condemned” and that their town would descend into an “economic wasteland.”⁹⁶ Despite the fact that seawalls had already failed

88. TEX. NAT. RES. CODE ANN. § 61.025 (West 2019).

89. Laura M. Padilla, *Does A Rising Tide Lift All Boats? Sea Level Rise, Land Use, and Property Rights*, 51 TEX. ENV'T L.J. 27, 58-59 (2021).

90. *Id.* at 68.

91. *Id.* at 104.

92. Titus, *supra* note 5, at 3.

93. Donna Weaver, *Harvey Cedars' Dune Fight May Strain Finances*, ATL. CITY PRESS (July 2, 2010), https://pressofatlanticcity.com/news/local/harvey-cedars-dune-fight-may-strain-finances/article_617499a0-8593-11df-9725001cc4c03286.html [https://perma.cc/5KER-V9QA].

94. Titus, *supra* note 5, at 104.

95. Xia, *supra* note 71.

96. *Id.*

to protect the town, Pacifica city officials caved to public pressure by voting to extend seawall coverage along Pacifica's coast.⁹⁷ By so doing, city officials essentially chose to take their town a step backwards by voting against adopting proactive adaptation strategies like rolling easements, which would have better protected private and public properties from future storms of similar or greater magnitude. As environmentalists later pointed out, Pacifica property owners' concerns regarding their property values would become moot if their properties were to ever succumb to rising sea levels in the future.⁹⁸

Before dismissing other viable means of addressing rising sea levels in favor of rolling easements, certain questions must first be considered. For one, if coastal municipalities do not start adapting to climate realities from rising sea levels now, how much will it cost them in the future? Next, do oceanfront property owners who place great importance in the aesthetic value of their properties really want their coastal towns or cities to become one armored wall of concrete against the ocean? Also, how do inland property owners whose ocean views are obstructed by shoreline armoring factor into a municipality's decision-making process? Why should these property owners' concerns be devalued to protect the interests of oceanfront property owners? Finally, will there even be beaches to enjoy in the future or oceanfront properties remaining should municipalities continue to respond to rising sea levels by implementing the same strategies that have failed in the past?

Another important consideration when examining the costs versus benefits of rolling easements is the value of the natural shore versus the value of private property lost to a rolling easement. Coastal communities must decide whether the value of preserving a natural shoreline is greater than the value of assets threatened by sea level rise less the cost of shore protection.⁹⁹ For example, in California, \$150 billion dollars of coastal property is at risk of flooding and two-thirds of the state's beaches and salt marshes could vanish by 2100.¹⁰⁰ However, for most people, the time value of money factors in where the year 2100 is seen as too far into the future to be of concern to them in the present. To this end, owners of highly valued oceanfront properties are not going to readily give them up now for some event that may or may not materialize in the future. In fact, many owners will likely not give up their properties until inundation is imminent, perhaps even up to the point where their properties are physically underwater.

Additionally, tax consequences weigh heavily on a property owner's decision to sell his highly valued oceanfront property. For one, capital gains taxes associated with the sale of such property would likely dissuade the owner from selling.¹⁰¹ While the owner could defer capital gains taxes through a 1031

97. *Id.*

98. *Id.*

99. Titus, *supra* note 5, at 137.

100. Xia, *supra* note 71.

101. 26 I.R.C. § 1011 (2021).

like-kind exchange or an umbrella real estate investment trust (UPREIT), this requires time and effort on the part of the owner to meet the exhaustive requirements under both deferral options.¹⁰² Further, capital gains taxes would eventually come due upon the sale of the substituted property in a 1031 like-kind exchange or upon the conversion of operating partnership units into REIT shares in an UPREIT.¹⁰³ Finally, the 2017 Tax Act under IRC Section 67(g) has limited any deductions from casualty losses (both business and personal) to those attributed to federally declared disasters in the taxable years from 2018 to 2025.¹⁰⁴ Since the owner benefits from the deferral of capital gains by excluding them from his gross income and may or may not be allowed a deduction for casualty losses, the property owner will likely be incentivized to hold rather than to sell his property to minimize tax burdens if the submerge date is sometime far into the future.

Perhaps rolling easements are best applied in rural, undeveloped coastal areas where land is less valuable and owners are more open to the idea; however, at some point, rolling easements will need to be considered as an adaptation tool to combat rising sea levels in densely developed coastal cities where land is highly valued and private property owners are overwhelmingly hostile to rolling easements. In crafting adaptation strategies, local governments must find a way to preserve coastal resources threatened by rising sea levels while, at the same time, acknowledging the concerns of private property owners, including diminution of property values and tax consequences associated with future sales of highly valued coastal properties.

II. TAKINGS JURISPRUDENCE SURROUNDING ROLLING EASEMENTS

An issue of concern surrounding rolling easements is whether a coastal owner's concomitant loss of private property rights constitutes an unconstitutional taking without just compensation under the Fifth and Fourteenth Amendments to the US Constitution. To this end, if a coastal property owner has the right to hold back the sea, then what degree of interference with this right rises to the level of a government taking? Can a coastal property owner bring a takings challenge for a rolling easement regulation before a property is threatened, or must he wait until the property is under immediate threat of inundation?

Rolling easements interfere with a property owner's "bundle of sticks" rights, including (1) the right to exclude the public from private property by giving the public access to areas once considered private property and (2) the right to protect private property with shoreline protection by prohibiting armoring. Takings claims arise when government actions involve: (1) the

102. WILLIAM BRUEGGEMAN & JEFFREY FISHER, *REAL ESTATE FINANCE & INVESTMENTS* 710 (16th ed. 2018).

103. *Id.*

104. 26 I.R.C. § 67(g) (2021).

actual physical occupation of a property via eminent domain, which requires just compensation and (2) the imposition of regulations that are “so onerous that their effect is tantamount to ouster.”¹⁰⁵ Regarding regulatory takings, “per se takings” eliminate all economic use of the land and require just compensation.¹⁰⁶ Purchased and donated rolling easements eliminate the risk of a successful takings claim, since the government or easement holder compensates (or receives through a donation) an interest from the property owner that might otherwise be taken. However, in other situations involving rolling easements, the takings question is less clear. This Article will evaluate whether a rolling easement constitutes an unconstitutional taking under the *Lucas*, *Nollan-Dolan*, and *Penn Central* tests.

A. *Lucas Test*

Under the *Lucas* test, per se takings require compensation when a regulation denies all economically beneficial or productive use of the land.¹⁰⁷ If a regulation codifies limits on uses already existing under background principles,¹⁰⁸ then a regulation is shielded from a *Lucas* takings claim.¹⁰⁹ Accordingly, when a government regulation codifies background principles of law that would have been imposed on property use by the state even in the absence of the regulation, no taking results.¹¹⁰ Background principles include customary use and the Public Trust Doctrine.¹¹¹ Rolling easements would survive a *Lucas* takings claim because they allow property owners to develop and beneficially use their property in the years preceding inundation and thus, do not deny all productive use of the land. As summarized by Titus:

Although productive use would eventually end if and when the sea level rises to a particular elevation, the regulation itself does not prevent productive use when instituted. Moreover, because the contingency would generally be decades—perhaps centuries—away, the impact on property values would be very small.¹¹²

Moreover, if considered as part of a state’s background principles (e.g., as a nuisance or under the public trust doctrine, custom, or public necessity), prohibitions on shoreline protection under a rolling easement do not constitute a taking under *Lucas*, since they do not change the existence of fundamental

105. Margaret E. Peloso & Margaret R. Caldwell, *Dynamic Property Rights: The Public Trust Doctrine and Takings in a Changing Climate*, 30 *STAN. ENVTL. L.J.* 51 (2011).

106. *Id.* at 62.

107. *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1029 (1992).

108. Background principles are common, shared understandings of permissible limitations derived from the state’s legal tradition which “inhere in the title itself.” *Id.* at 1029.

109. James L. Huffman, *Background Principles and the Rule of Law: Fifteen Years after Lucas*, 35 *ECOLOGY L.Q.* 1, 2 (2008).

110. *Lucas*, 505 U.S. at 1029.

111. Huffman, *supra* note 109, at 24.

112. Titus, *supra* note 9, at 1357.

property rights enjoyed by the property owner. The easement has always been there—it does not place any imposition on the property owner but rather, is part of the nature of the property itself.¹¹³ Since the easement inherently burdens the property, the owner never had a right to construct a structure to hold back the sea in the first place, especially if the structure (e.g., a seawall) significantly accelerates erosion near neighboring properties.

Rolling easements rooted in customary use shield them from takings claims under *Lucas*. In *Severance v. Patterson* (Texas) and *Daytona Beach v. Tona-Rama, Inc.* (Florida), both courts held that the public obtained an easement to privately owned, dry sand beaches from longstanding public use based on the doctrine of custom.¹¹⁴ Generally, customary use can be used to grant an easement over beach property by demonstrating that the use has been “ancient, continuous, peaceable, and free from dispute” in addition to being “reasonable, certain, obligatory, and consistent with other laws.”¹¹⁵ Customary use easements rely on the same rationale as prescriptive public easements where long-established public use creates an expectation that the public has a right to use the property, even if use is confined exclusively to access.¹¹⁶ In *Stevens v. City of Cannon Beach*, the court held that a rolling easement regulation prohibiting a seawall did not rise to the level of a taking under *Lucas*, since other beneficial uses like improvements to the property (e.g., provision of utilities and construction of streets) were possible.¹¹⁷ The court also held that since the public had a longstanding right to access along the shore, building a seawall was never part of the property owner’s title to begin with.¹¹⁸

Rolling easements also rooted in the Public Trust Doctrine further immunizes them from takings claims. Coastal property owners do not have an inherent right to violate the Public Trust Doctrine, which limits coastal development to protect the public’s interest in land.¹¹⁹ In *Matthews v. Bay Head Improvement Association* and *Raleigh Avenue Beach Association v. Atlantis Beach Club, Inc.*, New Jersey expanded the public trust further than any US state has by giving the public the “right to cross from the nearest road or path to the water’s edge—perpendicular access—as well as lateral access along the wet sand.”¹²⁰ Recently, California’s Land Commission added language to title settlements and boundary line agreements indicating that “lands not currently part of the public trust may become inundated by sea level rise in the future and

113. Huffman, *supra* note 109, at 3.

114. *Severance v. Patterson*, 370 S.W.3d 705, 713 (Tex. 2012); *City of Daytona Beach v. Tona-Rama Inc.*, 294 So.2d 73, 78 (Fla. 1974).

115. Meg Caldwell & Craig Holt Segall, *No Day at the Beach: Sea Level Rise, Ecosystem Loss, and Public Access Along the California Coast*, 34 *ECOLOGY L. Q.* 533, 555 (2007).

116. *Id.* at 556.

117. *Stevens v. City of Cannon Beach*, 854 P.2d 449, 460 (1993).

118. *Id.*

119. Huffman, *supra* note 109, at 2.

120. *Matthews v. Bay Head Improvement Ass’n*, 95 N.J. 306, 471 (1984); *Raleigh Ave. Beach Ass’n v. Atlantis Beach Club, Inc.*, 185 N.J. 40, 879 (2005).

subject to a public trust easement.”¹²¹ Finally, in the context of beach access, to the extent that a rolling easement is adopted by dedication of a piece of property from the private property owner to the public (expressly or impliedly) or by prescription—where public use of a property occurs for an extended period of time without a grant from the property owner—government regulation of the beach is not considered a taking.¹²² Therefore, since rolling easements do not completely deny coastal property owners of all economically beneficial or productive use of their land and are typically rooted in background principles, they are not considered a taking under the *Lucas* test.

B. *Nollan-Dolan Test*

Under the *Nollan-Dolan* test, the state must establish that a rolling easement regulation is legitimate and not arbitrary.¹²³ As noted earlier, legitimate purposes of rolling easements as established by a state legislature include: (1) promoting health and safety by keeping people and structures out of the dangers from rising sea levels and (2) preserving beaches and beach access. For one, as discussed previously, the easement line only shifts when the ocean is precipitously close to the dune. At that time, reinforcing permanent structures like beach houses becomes prohibitively expensive or physically impossible. Accordingly, the structure is already in immediate peril from sea level rise when it is scheduled to be removed or relocated. Additionally, there are no large economic deprivations for property owners, since decades pass before the property may be lost from rising sea levels (which most experts project to occur sometime during the second half of 21st century).¹²⁴ Accordingly, rolling easements would have no immediate practical impact on how coastal property owners use their land. Finally, rolling easements are not arbitrary, since they attach to all high-hazard coastal properties to achieve important safety, environmental, and municipal goals. Therefore, since rolling easements serve legitimate purposes and are not arbitrary, they are not considered a taking under the *Nollan-Dolan* test.

An exaction of a rolling easement in exchange for a permit to develop vacant land is also not considered a taking under the *Nollan-Dolan* test if: (1) the rolling easement mitigates a type of harm otherwise caused by the development and (2) mitigation is proportional to the harm expected from the development.¹²⁵ In the permitting process, Titus recommends that a rolling

121. Melius & Caldwell, *supra* note 6, at 23.

122. *Seaway Co. v. Att’y Gen. of Tex.*, 375 S.W.2d 923 (1964).

123. *Lingle v. Chevron U.S.A., Inc.*, 544 U.S. 528, 548 (2005).

124. Chris Mooney, *Why scientists are so worried about sea-level rise in the second half of this century*, WASH. POST (November 7, 2016), <https://www.washingtonpost.com/news/energy-environment/wp/2016/11/07/why-scientists-are-so-worried-about-sea-level-rise-in-the-second-half-of-this-century> [<https://perma.cc/ECS6-2VU3>].

125. Alan Romero, *Two Constitutional Theories for Invalidating Extortionate Exactions*, 78 NEB. L. REV. 348, 349 (1999).

easement be obtained as an exaction to prevent a takings claim, since successful claims would have to be litigated at the time of the exaction rather than at the time such claims would normally be brought when the structure is at high risk of inundation from sea level rise and is subject to removal by the state.¹²⁶ For example, if a property owner wants to build where sea levels are expected to rise in upcoming decades, a permitting entity can condition approval on the owner dedicating land to preserve public beaches at a high risk of disappearing. In Texas, individual structures, coastal land development projects, and activities involving the filling of wetlands are considered “subject to” rolling easements as a condition for obtaining a building permit.¹²⁷ However, this dynamic may be futile in states like California where developers exert great influence over planning commissioners and would balk at any additional conditions imposed on them when taking out construction loans or other future advances. To demonstrate the power wielded by developers over California planning commissioners one only has to look to the city of Los Angeles where planning commissioners have granted 90 percent of exception requests by developers (i.e., variances) since the year 2000.¹²⁸

C. *Penn Central Test*

Under *Penn Central*, a court uses an ad-hoc factors test that analyzes: (1) the regulation’s character or whether the regulation supports legitimate health and safety concerns, (2) the regulation’s economic impact on the parcel as a whole, including whether there is any remaining value in the entire parcel, and (3) a landowner’s distinct investment-backed expectations.¹²⁹ As it concerns character, rolling easements protect coastal communities from sea level rise hazards, preserve ecosystem habitats, and expand public access. Regarding their economic impact, rolling easements allow coastal property owners to fully use their property until some future submerge date when predetermined benchmarks are met. Accordingly, this prong is inapplicable, as an owner can, in fact, derive economic value from his property until it is completely inundated. With respect to a coastal property owner’s investment backed expectations, such expectations are shaped by: “(1) knowledge of heightened flood and erosion risks for coastal properties and the (2) likelihood that the property may be subject to greater regulation because of these risks.”¹³⁰ As described by Titus:

126. Titus, *supra* note 5, at 135.

127. *Galveston East Beach, Inc. v. Texas*, No. 97,893 (10th Dist. Ct. Galveston Cnty, Tex. 1965).

128. Dakota Smith & Ben Poston, *When developers want to build more than zoning allows, L.A. planning commissioners almost always say yes, Times analysis finds*, L.A. TIMES (February 10, 2017), <https://www.latimes.com/local/lanow/la-me-ln-planning-commission-zoning-changes-20170210-story.html> [<https://perma.cc/NE7E-PD88>].

129. *Penn Central Transp. Co. v. New York City*, 438 U.S. 104, 105 (1978).

130. Titus, *supra* note 5, at 91.

Rolling easements . . . do not impair the property's use today, and by the time they must be enforced, many decades may have passed. As a result, the rolling easement will have plenty of time to become part of the investment backed expectations in areas that are developed in the future, and perhaps even in areas that have already been developed.¹³¹

Rolling easements implemented via regulations are generally considered to provide adequate notice to property owners about limitations on their property rights as a consequence of sea level rise.¹³² Under the so-called Notice Rule, a takings claim based on a regulation is extinguished upon the sale of a property under the theory that "activities prohibited by the regulation would not be among the property rights the owner has purchased, since he had notice that the property did not include those rights."¹³³ For example, the Texas Open Beaches Act provides statutory notice to buyers that their title is subject to loss as a result of natural events.¹³⁴ However, in *Palazzolo v. Rhode Island*, the US Supreme Court held that the Notice Rule imposed an unfair burden on coastal property owners wishing to sell their property before a claim is litigated.¹³⁵ Nevertheless, the court in *Palazzolo* was silent on whether regulations altering rights associated with land titles must always require compensation.¹³⁶ Since rolling easements adhere to many of the *Penn Central* factors, they should survive a takings claim under the test.

As demonstrated above, rolling easements are likely to be immunized from takings claims under the *Lucas*, *Nollan-Dolan*, and *Penn Central* tests. Accordingly, states have legal authority to establish a rolling easement over a particular land parcel through statute, regulation, purchase, donation, or permitting. Such legal certainty lends support to the viability of rolling easements as an adaptation tool to address sea level rise in coastal communities.

III. APPLICATION OF ROLLING EASEMENTS IN TEXAS

A. *Texas Open Beaches Act*

Texas was the first US state to adopt rolling easements in 1959 through the Texas Open Beaches Act (TOBA).¹³⁷ Rather than being rooted in environmental concerns, Texas' application of rolling easements was based on a 150-year tradition stemming from its early days as a Republic.¹³⁸ Since 1836, Texans have had unfettered beach access along barrier islands facing the Gulf

131. Titus, *supra* note 9, at 1355.

132. Steven J. Eagle, *The Regulatory Takings Notice Rule*, 24 U. HAW. L. REV. 533, 533-34 (2002).

133. Titus, *supra* note 5, at 98.

134. Peloso & Caldwell, *supra* note 105, at 100.

135. Titus, *supra* note 5, at 98.

136. *Id.*

137. Caldwell & Segall, *supra* note 115, 539-40.

138. *Seaway Co. v. Att'y Gen. of Tex.*, 375 S.W.2d 923, 930-37 (1964).

of Mexico (approximately 367 miles of beaches) for activities like transportation, camping, fishing, swimming, and other public uses.¹³⁹ Up until 2012 (before *Severance v. Patterson*, discussed in detail below), TOBA gave the Texas General Land Office the authority to implement a dynamic public beach easement for public use activities that covered all dry sand areas from the mean high tide line to the natural line of vegetation—wherever that line moved.¹⁴⁰

The easement could be created from gradual processes like accretion (e.g., erosion) or rapid processes like avulsion (e.g., storms) so long as it unearthed new, dry sand areas.¹⁴¹ In other words, whenever land lost vegetation and became a dry sandy area, the rolling easement allowed the conversion of private beachfront land into public beaches.¹⁴²

Further, TOBA prohibited coastal property owners from “creating, erecting, or constructing any obstruction on the ‘dry beach’ that prevented public access to the beach and waters of the Gulf of Mexico.”¹⁴³ The authority for creating a rolling easement on dry sand beaches derived from background principles of Texas law including prescription, dedication, and continuous right.¹⁴⁴ According to TOBA:

If the public has acquired a right of use or easement to or over an area by prescription, dedication, or has retained a right by virtue of a continuous right in the public, the public shall have the free and unrestricted right of ingress and egress to the larger area extending from the line of mean low tide to the line of vegetation bordering on the Gulf of Mexico.

TOBA also permitted the state to impose several restrictions on coastal owners when private property was positioned seaward of the vegetation line and considered to be on a “public beach” easement.¹⁴⁵ These restrictions included: (1) any structure on land seaward of the vegetation line being subject to uncompensated removal as an encroachment on the public beach easement;¹⁴⁶ (2) banning repairs undertaken by owners of homes on such property after storm damage;¹⁴⁷ (3) preventing owners from excluding the public from such property or representing such property as private;¹⁴⁸ (4) prohibiting the rebuilding of homes or other structures in the event of destruction by storms;¹⁴⁹ and (5) banning construction of a vacant parcel on land seaward of the vegetation line by the owner.¹⁵⁰

139. *Id.*

140. McLaughlin, *supra* note 15, at 366.

141. *Id.* at 374.

142. *Id.* at 367.

143. TEX. NAT. RES. CODE ANN. § 61.013(a) (West 2021).

144. NAT. RES. § 61.011(a) (West).

145. NAT. RES. § 61.018(a) (West).

146. *Id.*

147. 31 TEX. ADMIN. CODE § 15.11(c) (West 2022).

148. NAT. RES. § 61.014 (West).

149. 31 TEX. ADMIN. CODE § 15.5 (c) (West).

150. *Id.*

Prior to *Severance v. Patterson*, Texas courts were highly deferential to policies administered under TOBA. Consequently, the public acquired easements by prescription or dedication along Texas beaches facing the Gulf of Mexico.¹⁵¹ From the 1980s until the end of the 2000s, the Texas legislature amended TOBA to reinforce the rolling easement doctrine as described below. One such amendment was a requirement that all executory contracts contain language expressly providing that a “purchaser acknowledge that [he] has acquired an easement up to the vegetation line” and that such acquired property be “subject to a lawsuit by the state to remove [the property] should it become seaward of the vegetation line.”¹⁵² In effect, such language put purchasers and lessees on notice that their properties were subject to a rolling easement and could be removed if found to be in violation of TOBA. The Texas legislature also eliminated a requirement that the public easement be “subject to proof.”¹⁵³ Instead, a common law right or easement in favor of the public would be presumed for beaches located seaward of the vegetation line.¹⁵⁴ In 2009, the legislature further strengthened TOBA via a referendum supported by 77 percent of the voters, which made it exceedingly more difficult for future legislators to weaken or change TOBA.¹⁵⁵

In addition to statutory developments favoring TOBA’s rolling easement doctrine, case law from the 1980s to the end of the 2000s typically granted summary judgment to the government for removal of structures seaward of the vegetation line, even when there was no public use in the disputed areas.¹⁵⁶ For instance, in *Feinman v. State*, the court addressed whether TOBA required the state to reestablish its rolling easement each time the vegetation line moved.¹⁵⁷ This case arose in 1983 after Hurricane Alicia relocated several homes in Galveston seaward of the new vegetation line.¹⁵⁸ Former Texas Attorney General, Jim Mattox imposed a rolling easement which prevented property owners from repairing hurricane-impacted homes and instead required the homes to be removed from the beach.¹⁵⁹ The *Feinman* court held that the vegetation line is not stationary and rolling easements are implicit in TOBA, since the purpose of TOBA is to provide the public with unrestricted access to Texas beaches.¹⁶⁰

151. Neal E. Pirkle, *Maintaining Public Access to Texas Coastal Beaches: The Past and the Future*, 46 BAYLOR L. REV. 1093, 1097–1100 (1994).

152. NAT. RES. § 61.025 (West).

153. Coastal Management—Beach Access and Preservation, Dune Protection, and Coastal Erosion Act, 1991 Tex. Sess. Law Serv. Ch. 295 (S.B. 1053) (West) (codified at TEX. NAT. RES. CODE ANN. § 61.020).

154. NAT. RES. § 61.020 (West).

155. TEX. CONST. Art. I § 33 (West 2021).

156. Shannon H. Ratliff, *Shoreline Boundaries Part I: Legal Principles*, 21–24 (2005), <http://texascoastgeology.com/papers/ratliff1.pdf> [<https://perma.cc/4MBH-H72K>].

157. *Feinman v. State*, 717 S.W.2d 106, 113 (Tex. App. 1986).

158. *Id.* at 107.

159. *Id.*

160. *Id.* at 110.

Accordingly, in order to adequately provide public access, the court reasoned that the easement must automatically move with a changing vegetation line whether the changes occur inland or toward the sea.¹⁶¹

In *Arlington v. Texas General Land Office*, the court addressed whether the state is required to prove that the public actually uses the area bounded by the new vegetation line.¹⁶² In 1998, Tropical Storm Frances damaged the Arlington family's Galveston beach house and subsequently moved the vegetation line of the beach onto their property.¹⁶³ The *Arlington* court held that, once a public beach easement is established, it is implied that the easement moves up or back to each new vegetation line, and the state is not required to continually reestablish that an easement exists up to the new vegetation line.¹⁶⁴ Instead, the state only needs to make a showing that the vegetation line has moved.¹⁶⁵

In *Brannan v. State*, the court addressed whether rolling easements applied equally to existing structures as they do to new structures.¹⁶⁶ Following the destruction of properties on Surfside Beach from Tropical Storm Frances in 1998, property owners received letters from the state informing them that their homes were slated for removal, since they were considered as encroachments on the public beach.¹⁶⁷ The *Brannan* court held that TOBA's authority to enjoin encroachments on the public easement applied equally to existing structures, such as longstanding homes, and new structures introduced onto current public easement areas.¹⁶⁸ Hence, TOBA applied to any structure that interfered with the public's use of a rolling easement. Moreover, the *Brannan* court held that no regulatory taking occurred "either under common law or under [TOBA], because the public's easement was established by dedication under the common law" which constitutes a background principle of Texas law and is hence immunized from a takings claim under *Lucas*.¹⁶⁹

For years, private property owners were reluctant to challenge TOBA due to the weight of statutory and judicial precedent which entrenched the rolling easement doctrine in Texas. Instead, coastal property owners accepted that Texas beaches would be eternally burdened by public access easements. Then, in 2006, Carol Severance—a California resident who bought beachfront properties in West Galveston as rental investments—finally contested TOBA's authority in a battle that would forever change Texas' rolling easement doctrine.¹⁷⁰

161. *Id.*

162. *Arlington v. Tex. Gen. Land Off.*, 38 S.W.3d 764, 766 (Tex. App. 2001).

163. *Id.* at 765.

164. *Id.* at 766.

165. *Id.*

166. *Brannan v. State*, 365 S.W.3d 1, 21 (Tex. App. 2010).

167. *Id.* at 6.

168. *Id.* at 21.

169. *Id.* at 26.

170. *Severance v. Patterson*, 370 S.W.3d 705, 711 (Tex. 2012).

B. *Severance v. Patterson Rejects TOBA's Definition of Rolling Easements*

The 2012 Texas Supreme Court's ruling in *Severance v. Patterson* took a knife to the heart of the rolling easement doctrine established under TOBA. Before *Severance*, Texas had long prided itself in providing the public with unrestricted access to beaches along its 367-mile coastline.¹⁷¹ The procedural history of *Severance* is quite complex. Following the aftermath of Hurricane Rita in 2005, Severance received a letter from Texas' General Land Office informing her that her Galveston properties were now on a "public beach."¹⁷² The vegetation line had moved "partly" or "wholly" inland of Severance's properties that were now subject to removal by the state and Severance would be reimbursed \$40,000 dollars for removal costs.¹⁷³ In response, Severance filed a complaint in federal court a year later alleging that: (1) there was no common law "rolling easement" doctrine in Texas; (2) TOBA could not mandate public access on land that was never proven to be subject to an easement; and (3) imposition of public access on Severance's dry sandy land is an unreasonable seizure of private property and a taking without just compensation.¹⁷⁴ The district court summarily dismissed Severance's complaint.¹⁷⁵ On appeal, in a two-to-one decision, the circuit court affirmed that Severance had stated a claim for seizure of her properties through imposition of a public beach easement.¹⁷⁶ The circuit court punted the question of reasonableness to the Texas Supreme Court who would have to answer questions about the lawfulness and scope of TOBA under Texas law in order to determine whether the state's seizure of Severance's properties was "unreasonable."¹⁷⁷

The issues before the Texas Supreme Court in *Severance* were: (1) does Texas recognize a "rolling" public beachfront access easement?; (2) if Texas recognizes such an easement, is it derived from common law doctrines or from construction of TOBA?; and (3) if a rolling easement shifts onto a lot previously unencumbered by any easement, is the property owner entitled to any compensation?¹⁷⁸

Upending longstanding judicial and statutory precedent, the Texas Supreme Court ruled that rolling easements exist under Texas law if they are created by slow processes like erosion and accretion but do not exist if created by sudden processes like avulsion.¹⁷⁹ Thus, the court held that rolling ease-

171. Neena Satija, Debating *What's More Sacred in Texas: Private Land or Public Beaches*, TEX. TRIB. (Sept. 28, 2014, 6:00 AM), <https://www.texastribune.org/2014/09/28/openbeaches-law-uncertain> [<https://perma.cc/4EXN-HV FH>].

172. *Severance*, 370 S.W.3d at 720.

173. *Id.*

174. *Id.* at 712.

175. *Id.*

176. *Id.*

177. *Id.*

178. *Id.* at 708.

179. *Id.* at 723–25.

ments are no longer applicable in providing public access to beaches impacted by hurricanes and other storms: “avulsive events such as storms and hurricanes that drastically alter pre-existing littoral boundaries do not have the effect of allowing a public use easement to migrate onto previously unencumbered property.”¹⁸⁰ Instead, private beachfront property owners could now exclude the public from using significant portions of the state’s beaches and prevent the state from removing structures currently obstructing public easements or disrupting dune rehabilitation.¹⁸¹

The Texas Supreme Court also held that public beachfront access easements are not considered to “roll” with shifts in Gulf of Mexico waters and vegetation lines and, hence, the state cannot force the relocation of homes built on the beach within the beachfront access easement without compensation to property owners.¹⁸² The court reasoned that it would be unreasonable to assume that a “public easement can suddenly encumber an entirely new portion of a landowner’s property that was not previously subject to that right of use.”¹⁸³

Finally, the Texas Supreme Court ruled that “if changes occur suddenly and perceptibly to materially alter the boundaries of the beachfront property, the easement attached to the land lost to the ocean is also lost to the public trust.”¹⁸⁴ Accordingly, the state must seek to “establish another easement as permitted by law on the newly created dry beach.”¹⁸⁵ The court reasoned that it would simply be “unfair” and “unlawful” to impose such demanding conditions on a property owner without compensation.¹⁸⁶ The *Severance* ruling stunned the Texas legal community. Former Texas land commissioner, Jerry Patterson echoed how many Texans felt about *Severance*’s weakening of public access to Texas beaches by dubbing it the “Californication of Texas beaches” in an apparent slight to California resident, Carol Severance, who brought the suit against TOBA in the first place.¹⁸⁷ Following *Severance*, several limitations of the majority’s ruling became quite apparent, as will be discussed below.

C. *Limitations of Severance v. Patterson*

When evaluating the Supreme Court’s ruling in *Severance*, several limitations stand out. For one, the court’s “avulsion” versus “erosion” characterization is a false distinction, since coastal erosion is, in of itself, a process which is not static in nature. As observed by Professor Richard McLaughlin: “no coastline can be viewed through the ‘snapshot’ of a limited span of time . . . coastal erosion is episodic, not either ‘imperceptible’ or ‘avulsive’ as

180. *Id.* at 725.

181. *Id.* at 723.

182. *Id.* at 724.

183. *Id.* at 723.

184. *Id.* at 724.

185. *Id.*

186. *Id.*

187. Satija, *supra* note 171.

indicated in the court's majority opinion."¹⁸⁸ Indeed, "imperceptible" shifts may narrow a beach to accelerate coastline degradation, even in the absence of an avulsive event. Additionally, formation of naturally protective dunes will not occur if structures are permitted to remain on the beach. Consequently, the state is arguably abandoning its duty to prevent the degradation of Texas' coastline by no longer requiring the removal of structures seaward of the dune vegetation line.

In fact, a week after the Texas Supreme Court issued its initial ruling in *Severance*, a \$40 million dollar beach renourishment project was immediately cancelled, which would have prevented the erosion of beaches on the west end of Galveston Island.¹⁸⁹ Additionally, several Home Owners Associations in Kemah (approximately 25 miles west of Galveston Bay) promptly started mandating hard armoring, including bulkhead obstructions in front of every single newly acquired private property.¹⁹⁰ By narrowing beaches, accelerating coastal erosion, and failing to protect against strong storm surges, additional armoring in Kemah further exacerbates problems rolling easements are designed to fix. The court's ruling also resulted in the public's exclusion from increasingly larger portions of Gulf-facing beaches as property washed away from avulsive events now continues to be held by private property owners rather than passing over to the public trust. As noted by Justice Lehrmann in her dissent, this would seem antithetical to the purpose of TOBA, which was to provide the public with "unrestricted access to Texas beaches facing the Gulf of Mexico."¹⁹¹

Moreover, there is no clear definition of "avulsion" which will likely result in ambiguity requiring clarification from courts in the future. In his dissenting opinion, Justice Medina harshly criticized the majority's "erosion" versus "avulsion" distinction as "a game of semantics."¹⁹² Indeed, the *Severance* court did not establish a narrow definition of "avulsion." Accordingly, the court left unresolved the question of whether the definition of "avulsion" only includes storms that result in the migration of public easements. Since the court did not constrain the meaning of the term "avulsion," coastal property owners could claim all types of storms to be avulsive. And if characterized as avulsive, property owners would then have the authority to rebuild or fortify structures seaward of dune vegetation lines, which would further hinder the state's ability to effectively respond to the impacts of sea level rise on coastal communities. While the avulsion doctrine post-*Severance* intended to protect coastal property owners against unreasonable government seizures from sudden or unexpected weather events, the doctrine should evolve to a

188. McLaughlin, *supra* note 15, at 382.

189. Harvey Rice, *State Calls Off Big Galveston Beach Project: Recent Texas High Court Ruling on Open Beaches Act Gets Blame*, HOUS. CHRON. (NOV. 15, 2010), <http://www.chron.com/disp/story.mpl/metropolitan/7295713.html> [<https://perma.cc/P7DS-Y34W>].

190. *Id.*

191. *Severance*, 370 S.W.3d at 754.

192. *Id.* at 734.

world where severe weather events and flooding are frequent and predictable occurrences due to climate change.

Additionally, the court's precise definition of an easement is not workable in the context of many coastal regions because shorelines are dynamic. As noted by one observer, the *Severance* court viewed Galveston Island as a "single entity, which, once underwater, would be destroyed."¹⁹³ However, McLaughlin has noted that "daily tidal fluctuations, sea level rises, and catastrophic weather events" in coastal communities suggest that easements over dry sand beaches "should not be treated as precise, permanent boundaries but should shift with dynamic natural changes of the beachfront."¹⁹⁴ Indeed, by freezing the easement in place, the court ignored the properties of expansion or contraction inherent to rolling easements which possess boundaries that shift naturally with changes in the shoreline. To best secure and preserve public beach access, the boundary should instead be dynamic to mimic real-world conditions.

Finally, the court prioritized oceanfront owners' private property interests at the expense of wider community interests. Rather than establishing a balance between private property interests and the public's right to shoreline protection and access, the court elevated oceanfront owners' private property interests over wider community interests of public access, recreation, and preservation of Texas beaches. As discussed in Justice Lehrmann's dissent, the majority's ruling is particularly unfair to non-littoral property owners who purchased property near beaches assuming that they would have access to the beach.¹⁹⁵ In fact, non-littoral property and rental values have decreased, on average, following the Texas Supreme Court's ruling in *Severance*.¹⁹⁶

Limitations present in the *Severance* court's ruling create confusion and issues with respect to the status of TOBA that require clarification. In 2013, the Texas Legislature responded to *Severance* by passing House Bill 3459 which allocates decision-making authority to the General Land Office which can suspend determination of the vegetation line after it is destroyed by a "sudden meteorological event."¹⁹⁷ Accordingly, Texas' Land Office is now given latitude on how to determine a new location for the vegetation line to protect beaches from future erosion.¹⁹⁸

Despite its limitations and statewide unpopularity, the ruling in *Severance* continues to be the law of the land in Texas. Nevertheless, *Severance* is

193. Kevin J. Mahoney, *Mitigating Myopia: Climate Change, Rolling Easements, and the Jersey Shore*, 44 SETON HALL L. REV. 1130 (2014).

194. McLaughlin, *supra* note 15, at 386.

195. *Severance*, 370 S.W.3d at 755.

196. Satija, *supra* note 171.

197. TEX. A&M AGRILIFE EXTENSION, *Rolling Easements & the Texas Open Beaches Act*, COASTAL RESILIENCE (last visited Nov. 2, 2022, 11:09 PM), <https://coastalresilience.tamu.edu/home/wetland-protection/policy-framework/bay-and-ocean-side-submerged-lands-some-fundamental-differences-in-law-and-management/the-texas-open-beaches-act-an-exceptional-example-of-a-rolling-easement> [<https://perma.cc/YW2W-85HX>].

198. *Id.*

only persuasive authority in other states and the application of a rolling easement doctrine is still possible as a means of addressing sea level rise in coastal communities throughout the US. Accordingly, states should continue to look to TOBA as a model on how to incorporate rolling easements into coastal management plans. The next section will explore the potential application of rolling easements to states positioned along the Atlantic and Pacific coasts, namely in New Jersey and California.

IV. APPLICATIONS OF ROLLING EASEMENTS TO NEW JERSEY AND CALIFORNIA

A. *Application to New Jersey*

In 2012, Hurricane Sandy stunned coastal communities in New Jersey. Never before in its 225-year history had New Jersey experienced such a powerful storm. The storm was estimated to cost New York and New Jersey over 71 billion dollars.¹⁹⁹ Unfortunately, coastal communities in New Jersey did not learn any lessons from Hurricane Irene, which ravaged New York a year earlier. In fact, in the coastal town of Mantoloking, 56 homes were wiped directly off their foundations by floodwaters during Hurricane Sandy, while another 200 homes were destroyed.²⁰⁰ In nearby Seaside Heights, the town's iconic beachfront amusement park and boardwalk were completely decimated.²⁰¹ Incredibly, the amusement park's Jet Star Rollercoaster was still submerged in ocean waters five months after Hurricane Sandy made landfall.²⁰²

In the aftermath of Hurricane Sandy, it became quite clear to New Jersey officials and residents alike that current armoring mechanisms employed by coastal property owners were woefully inadequate. Then-Governor Chris Christie attempted to push for implementation of rolling easements on beachfront properties but was met with fierce resistance from private property owners, who threatened litigation.²⁰³ In brash New Jersey style, Governor Christie threatened to publicly name coastal property owners who believed

199. Hilary Russ, *New York, New Jersey Put \$71 Billion Price Tag on Sandy*, REUTERS (Nov. 26, 2012), <https://www.reuters.com/article/us-storm-sandy-cost-nyc/new-york-new-jersey-put-71-billion-price-tag-on-sandy-idUSBRE8AP0SZ02121127> [<https://perma.cc/4U3E-5EF9>].

200. *Witnessing What's Left of Sandy-Ravaged Mantoloking, N.J.*, CBS N.Y. (Jan. 15, 2013), <http://newyork.cbslocal.com/2013/01/15/exclusive-witnessing-whats-left-of-sandy-ravaged-mantoloking-n-j> [<https://perma.cc/K2YN-LVZC>].

201. Erin O'Neill, *Some Rides Reopen, But Submerged Roller Coaster Still Main Attraction in Seaside Heights*, NJ.COM (Mar. 31, 2013, 9:40 PM) http://www.nj.com/ocean/index.ssf/2013/03/seaside_heights_casino_pier_sandy.html [<https://perma.cc/D3RW-HBA3>].

202. *Id.*

203. Kirk Moore, *Easements Still Stalling Some N.J. Beach Restoration*, ASBURY PARK PRESS (Jan. 15, 2013, 12:49 PM), <http://www.app.com/article/20130114/NJNEWS/301140114> [<https://perma.cc/3688-AZ3M>].

that “their view of the Atlantic Ocean was more important than the lives and the property of their neighbors.”²⁰⁴

Governor Christie’s municipal acolytes including Long Beach Township mayor Michael Mancini (not to be confused with the Melrose Place character) went one step further by listing property owners’ addresses on the township’s website.²⁰⁵ Mayor Mancini even enforced a never before used ordinance requiring property owners who did not sign storm reduction easements to construct their own dunes at cost to the property owner.²⁰⁶

Governor Christie and his municipal acolytes did everything in their power to inflame already raw tensions between private property owners and government officials. In fact, many New Jersey coastal residents shrugged off the Governor and local officials’ warnings. They would simply not be pressured into signing anything, especially if it meant losing control of their properties or decreasing their property values.²⁰⁷ Echoing the words of Ronnie from the popular MTV show, *The Jersey Shore*, New Jersey residents effectively told Governor Christie, “Come at me, bro.” One New Jersey resident succinctly summed up the conflict between private property owners and government officials in the aftermath of Hurricane Sandy: “people from New Jersey are a breed of their own . . . they have this ‘let’s come back together stronger and better’ attitude . . . they would rather rebuild their communities than retreat from them.”²⁰⁸ Heightened tension between property owners and city officials further highlights the challenges that municipalities face when seeking to implement rolling easements in coastal communities.

Given that New Jersey is the most densely populated state in the US and that 80 percent of New Jersey’s 127-mile coastline is highly vulnerable to flooding,²⁰⁹ a comprehensive adaptation plan should include rolling easements as a means of combatting rising sea levels. If New Jersey residents have learned anything from Hurricane Sandy, it is that New Jersey cannot carry on with the

204. Jenna Portnoy, *Christie to Personally Call Out Residents Who Fight Dunes in Wake of Sandy*, STAR-LEDGER (Mar. 27, 2013, 5:27 PM) http://www.nj.com/politics/index.ssf/2013/03/christie_to_personally_call_ou.html#incart_river_default [<https://perma.cc/ZA3T-UN4B>].

205. *Long Beach Township Mayor Blames Misinformation for Blocking Dune Projects*, N.J. SPOTLIGHT NEWS (March 29, 2013), <https://www.njspotlightnews.org/video/long-beach-township-mayor-blames-misinformation-for-blocking-dune-projects> [<https://perma.cc/ZUD9-Q2PZ>].

206. MaryAnn Spoto, *Long Beach Mayor: Dunes tab Is on Residents*, NJ.COM (Nov. 26, 2012, 12:05 PM) https://www.nj.com/politics/2012/11/long_beach_mayor_dunes_tab_is.html [<https://perma.cc/Q7YJ-TXHB>].

207. Kristina Fiore, *Shifting Sands*, N.J. MONTHLY (May 9, 2011), <https://njmonthly.com/articles/jersey-shore/shifting-sands> [<https://perma.cc/T6FS-S56C>].

208. Mahoney, *supra* note 193, at 1158.

209. DAVID CLING & JAMES N. SANCHIRICO, RES. FOR THE FUTURE, AN ADAPTATION PORTFOLIO FOR THE US COASTAL AND MARINE ENVIRONMENT 14 (2009), <https://web.archive.org/web/20090804152143/https://www.rff.org/rff/documents/RFF-Rpt-Adaptation-KlingSanchirico.pdf> [<https://perma.cc/6PKL-LNNF>].

status quo of armoring to hold back rising sea levels if the state intends to preserve coastal environments and economies.

Northeastern states like New Jersey are projected to experience higher than average levels of sea level rise. Specifically, climate change is expected to increase sea levels along north Atlantic coastlines by 10 to 14 inches, on average, over the next 30 years.²¹⁰ Unlike other parts of the country, New Jersey's coastline is also highly susceptible to nor'easters, which can be even more devastating than hurricanes in terms of their toll on coastal communities.²¹¹ Rising sea levels will not just shift New Jersey's coastline inland but will also accelerate coastal flooding through storm surges comparable to or even greater than the one experienced during Hurricane Sandy.²¹²

Historically, New Jersey has adopted shoreline armoring as a means of preventing coastal degradation and preserving beaches.²¹³ From a 15-foot seawall in Sea Bright and Monmouth Beach to a beach renourishment program in Long Beach, shoreline armoring is the most common approach to hold back the sea in New Jersey.²¹⁴ Strong storm waves can penetrate armoring structures to cause significant damage to coastal communities. Thus, should New Jersey continue on its current path of ineffective shoreline protection, coastal properties may one day succumb to a rising sea. Consequently, rolling easements should be seriously considered in coastal management plans as an alternative approach for addressing sea level rise in these communities.

Post-*Severance*, states like New Jersey have grappled with the question of how to incorporate avulsive events into rolling easement doctrines. Under New Jersey law, when avulsion occurs, property lines do not shift, and the previous mean high-water mark remains the dividing line between public and private property.²¹⁵ Recently, the New Jersey Supreme Court's holding in *City of Long Branch v. Liu* expanded the avulsion doctrine in New Jersey to include both natural and man-made events.²¹⁶ In *City of Long Branch v. Liu*, the government pursued the Lius' land through eminent domain.²¹⁷ For valuation purposes, the Lius contended that the 225-foot extension of dry beach placed in front of their home by the government extended their property to the mean high-water mark, which the Lius claimed they were entitled to under their deed.²¹⁸ The court held that man-made additions of dry beach in front of the Lius' home was an avulsive event, and, thus, "state-held public land."²¹⁹

210. Sweet et al., *supra* note 1, at 19.

211. NORBERT P. PSUTY & DOUGLAS D. OFIARA, COASTAL HAZARD MANAGEMENT: LESSONS AND FUTURE DIRECTIONS FROM NEW JERSEY 110-12 (2002).

212. *Id.* at 135.

213. *Id.* at 162.

214. *Id.* at 41-43.

215. *City of Long Branch v. Liu*, 4 A.3d 542, 550 (N.J. 2010).

216. *Id.* at 551.

217. *Id.* at 547.

218. *Id.* at 545.

219. *Id.* at 554.

As described by legal scholar Kevin Mahoney, the court's holding in *Liu* was unique by showing that the "avulsion doctrine can actually assist in New Jersey's restoration efforts by shielding newly created beaches from claims by nearby private property owners."²²⁰

One suggestion proposed by Titus is a de facto rolling easement program prohibiting coastal property owners from armoring their properties to allow the rising sea to naturally migrate inland without any obstruction.²²¹ This policy would put future owners or lessees on notice of the risks associated with property ownership and tenancy near the shore, including the inability to hold back the sea through shoreline armoring.²²² However, this policy would likely be political kryptonite for New Jersey officials seeking reelection, as residents of dense coastal communities in that state—particularly on barrier islands—rely on armoring to protect their valuable properties. Additionally, as discussed in Section I.B regarding the case study in Del Mar, once local officials start talking about retreat, coastal property owners equate the word "retreat" to "condemnation" and are no longer interested in any further discussion on the topic.

In New Jersey, the issue of just compensation is an important consideration relating to the implementation of rolling easements, since state and local officials largely acquire rolling easements through eminent domain. In *Borough of Harvey Cedars v. Karan*, the court addressed whether quantifiable increases in a property's value from shore protection efforts can be used to offset a property's loss of value from obstructed oceanfront views when determining the amount of just compensation in a partial takings claim.²²³ Here, the Borough sought an easement over the Karans' beachfront property to construct a 22-foot dune which obstructed the Karans' oceanfront views and reduced their property's value.²²⁴ The Borough later acquired the easement via eminent domain after the Karans refused to convey it.²²⁵ The Karans sought compensation not only for loss of their property's value but also for loss of their beach and oceanfront views.²²⁶

The New Jersey Supreme Court acknowledged two types of benefits arising from a public project: general benefits enjoyed by the subject property and public, and special benefits unique to the property owner that increase the value of the property taken.²²⁷ In New Jersey, general benefits are not considered when setting compensation for a partial takings claim, while special benefits are.²²⁸ As

220. Mahoney, *supra* note 193, at 1150.

221. Titus, *supra* note 5, at 65.

222. *Id.* at 65-66.

223. *Borough of Harvey Cedars v. Karan*, 70 A.3d 524, 526-27 (N.J. 2013).

224. *Id.* at 541.

225. *Id.* at 527-28.

226. *Id.* at 530-31.

227. *Id.* at 529.

228. *Id.*

noted in the majority's ruling, "[only] the benefits that both a willing buyer and seller would agree enhance the value of the property should be considered."²²⁹ Accordingly, a rational buyer would likely place value on the protection that a dune barrier provides to the property by preventing storm damage. In effect, the court held that quantifiable benefits from dune barrier protection must be considered when determining the amount of just compensation, irrespective of whether others in the community are enjoying similar benefits.²³⁰

Incorporating benefits of shore preservation efforts into compensation awards for takings claims undoubtedly resulted in significantly less litigation pursued by property owners post-*Harvey Cedars*, as the costs of litigation became prohibitively expensive. In fact, the plaintiffs in *Harvey Cedars* settled with the Borough for only one dollar when their house was worth a fair market value of \$1.9 million dollars.²³¹ It stands to reason that New Jersey officials can use the leverage granted to them by the court's holding in *Harvey Cedars* to incorporate a rolling easement doctrine via eminent domain to preserve eroding beaches along New Jersey's coastline. In fact, Governor Christie implemented an executive order in 2013 authorizing New Jersey's Attorney General to "coordinate . . . legal proceedings necessary to acquire [roughly 1000] easements or other interests in real property for the system of Flood Hazard Risk Reduction Measures."²³² Further, the executive order authorizes the creation of the Office of Flood Hazard Risk Reduction Measures within New Jersey's Department of Environmental Protection to "acquire the necessary interests in real property to assist in flood reduction along the New Jersey Coast."²³³ To date, Governor Christie's easement acquisition program remains in effect in New Jersey with over 80 percent of the easements sought after for beach preservation efforts successfully acquired by the government via eminent domain.²³⁴

As New Jersey emerged from the devastation of Hurricane Sandy, alternative adaptation tools were adopted including the forceful use of eminent domain to acquire beachfront easements to reduce flooding along the state's coastline. Judicial rulings in *Liu* and *Harvey Cedars* expanded the use of eminent domain for beach preservation projects at lower costs to the state. In the future, such an approach can be used to acquire rolling easements in an effort by the state to adapt to rising sea levels threatening vulnerable communities

229. *Id.* at 540.

230. *Id.*

231. Jonathan Stempel, *New Jersey Couple Loses Ocean View, Gets \$1*, REUTERS (Sept. 25, 2013), <https://news.yahoo.com/jersey-couple-loses-ocean-view-gets-1-201056742—sector.html> [<https://perma.cc/DE7Z-NC3R>].

232. N.J. Exec. Order No. 140, 3-4 (Sept. 25, 2013), <http://nj.gov/infobank/circular/eocc140.pdf> [<https://perma.cc/MU3Y-U59J>].

233. *Id.*

234. STATE OF N.J. DEP'T OF ENV'T PROT. BUREAU OF CLIMATE RESILIENCE DESIGN AND ENG'G, *Easement Acquisition Program* (January 6, 2022), <https://www.nj.gov/dep/floodresilience/easements.htm> [<https://perma.cc/A5JU-YQER>].

along New Jersey's coastline. If successful, New Jersey may succeed in preserving its coastline for generations to come.

B. *Application to California*

By 2050, sea levels are projected to rise by at least a half a foot in California due to climate change, placing communities along California's 1200-mile coastline at great risk.²³⁵ In fact, sea levels are already rising at approximately two millimeters per year in the San Francisco/Monterey region.²³⁶ Increased coastal flooding and intensified beach erosion from strong storm waves pose acute dangers to homes and businesses worth at least \$1.4 trillion dollars in value that are positioned only an eighth of a mile from the coastline.²³⁷ According to the United States Geological Survey, in Southern California alone, bluffs could erode by nearly 100 feet and up to 67 percent of beaches could vanish over the next 80 years.²³⁸ California's underlying geology, comprised largely of unconsolidated materials, complicates the issue when intense El Niño storms pound the coastline and trigger the collapse of bluffs and the structures they support.²³⁹

In addition, disappearing beaches along California's coastline may cause the state to lose a core part of its identity. When polls asked Americans to name a word that they relate to California, respondents consistently chose the word "beaches" which was among the top five words used to describe the state.²⁴⁰ Given that over 85 percent of Californians reside in coastal counties,²⁴¹ the state would be well advised to amend its coastal management programs to include adaptation strategies like rolling easements in its efforts to combat rising sea levels and adapt to the realities of climate change.

Similar to New Jersey residents, Californians prefer armoring (e.g., seawalls and beach renourishment) over managed retreat strategies (e.g., rolling easements) as a means of protecting their coastal properties. In fact, one-tenth of California's shoreline has some form of a seawall, including one-third of

235. CAL. LEGIS. ANALYST'S OFF. *What Threat Does Sea-Level Rise Pose to California?* (2020), <https://lao.ca.gov/Publications/Report/4261> [<https://perma.cc/A5JU-YQER>].

236. William V. Sweet, et al., *Sea Level Rise and Nuisance Flood Frequency Changes around the United States* 5 (Nat'l Oceanic & Atmospheric Admin., 2014) https://tidesandcurrents.noaa.gov/publications/NOAA_Technical_Report_NOS_COOPS_073.pdf.

237. Fleming et al., *Fourth National Climate Assessment, Chapter 8: Coastal Effects*, U.S. GLOBAL CHANGE RSCH. PROG. (2018) <https://nca2018.globalchange.gov/chapter/8> [<https://perma.cc/RV9U-53AE>].

238. S. Vitousek, et al., *A Model Integrating Longshore and Cross-shore Processes for Predicting Long-term Shoreline Response to Climate Change*, 122 J. GEOPHYS. RES. EARTH SURF. 782, 800 (2017); Smith, *supra* note 70.

239. Caldwell & Segall, *supra* note 115, at 534.

240. G. Suarez, *How would you describe California in one word?*, S.F. GATE (Mar. 24, 2015), <https://www.sfgate.com/national/article/How-would-you-describe-California-in-one-word-6148831.php> [<https://perma.cc/V6CB>].

241. Cal. Dept. Just., *Climate Change Impacts in California*, <https://oag.ca.gov/environment/impact> [<https://perma.cc/5HNC-5RB7>] (last visited April 25, 2022).

southern California's shoreline.²⁴² For example, the Embarcadero Seawall protects the financial district and Market Street in San Francisco, while breakwaters, jetties, and other retention structures hold in sand for beaches in Santa Monica and Venice.²⁴³ California's Coastal Act allows shoreline armoring so long as structures maintain public trust rights.²⁴⁴ The California Coastal Commission typically grants armoring permits if: "(1) there is an existing structure, public beach, or coastal-dependent use that is (2) in danger from erosion and (3) the shoreline protection is both required to address the danger (i.e., the least environmentally-damaging, feasible alternative) and (4) designed to eliminate or mitigate impacts on sand supply."²⁴⁵ However, armoring rights are not absolute in California—public trust rights always trump armoring rights.²⁴⁶

While armoring may provide temporary relief against rising sea levels, it has proven to be ineffective in holding back the sea during large storm events, as witnessed during the aforementioned 2016 El Niño season where storm waves broke through existing seawalls to cause \$16 million in property damage to the town of Pacifica near San Francisco Bay.²⁴⁷ In Gleason Beach (San Francisco), shattered seawall pieces from previous storms still surround beach houses perched over crumbling cliffs which are at high risk of succumbing to the sea.²⁴⁸ Further, shoreline armoring poses distinct problems, including the narrowing of California's beaches, which also hastens coastal erosion.²⁴⁹ For example, Santa Cruz's scenic bluff-top roadway, West Cliff Drive, is continuing to erode and could imminently collapse, endangering nearby homes—despite the city's longstanding beach renourishment program where sand has been added 58 times to offset erosion since 1965 at a cost of \$18 million dollars.²⁵⁰

Additionally, costs of updating seawalls may be excessively high. The Embarcadero Seawall, for instance, requires improvements estimated to cost over two billion dollars.²⁵¹ Since over 80 percent of California's coastline is actively eroding,²⁵² armoring may not be the best approach to combat rising sea levels. Instead, rolling easements provide a better alternative for California's coastal communities to address the impacts of climate change—including

242. Caldwell & Segall, *supra* note 115, at 539.

243. Xia, *supra* note 71.

244. Caldwell & Segall, *supra* note 115, at 554.

245. CAL. COASTAL COMM'N, SEA LEVEL RISE POLICY GUIDANCE: INTERPRETIVE GUIDELINES FOR ADDRESSING SEA LEVEL RISE IN LOCAL COASTAL PROGRAMS AND COASTAL DEVELOPMENT PERMITS (2015).

246. Caldwell & Segall, *supra* note 115, at 559.

247. Xia, *supra* note 71.

248. *Id.*

249. Titus, *supra* note 5, at 3.

250. Smith, *supra* note 70.

251. Xia, *supra* note 71.

252. Gary B. Griggs, *California's Coastline: El Niño, Erosion and Protection*, Proc. from Cal.'s Coastal Nat. Hazards Conf. 36, 36-55 (1998).

accelerated rates of sea level rise, enhanced erosion, and inundation from storms that are projected to become even more frequent and severe.

There is ample legal authority for rolling easements in California via: (1) the Public Trust Doctrine, (2) customary use, (3) public nuisance principles, and (4) permit conditions.

1. Public Trust Doctrine

In California, courts have long acknowledged that “navigable waters and the public beaches along them are held in trust for the public’s benefit by the state.”²⁵³ In *National Audubon Society v. Superior Court*, California expanded its Public Trust Doctrine to include preservation of ecosystem functioning.²⁵⁴ California courts consequently interpret the Public Trust Doctrine to include protection of “ecological units for scientific study, an open space, and environments which provide food and habitat for birds and marine life.”²⁵⁵ Therefore, it stands to reason that the Public Trust Doctrine could support regulatory and statutory efforts to prohibit armoring under rolling easements should armoring impair public trust rights (e.g., by threatening coastal habitats). According to California’s Coastal Act, overly broad armoring privileges which violate public trust principles were never held by coastal property owners despite the existence of administrative permit grants.²⁵⁶

In California, the public trust attaches to the shoreline no matter where it moves.²⁵⁷ The ambulatory nature of California’s Public Trust Doctrine was reaffirmed in *Lechuza Villas West v. California Coastal Commission*.²⁵⁸ In this case, the Coastal Commission denied a developer a permit on grounds that: (1) the mean tide line had extended onto lands planned for development through the gradual erosion of the shore and (2) the development project encroached on public tidelines.²⁵⁹ The *Lechuza* court’s rationale can be applied to shoreline prohibitions included in rolling easements, since armoring structures like seawalls oftentimes prevent the mean high tide line from migrating inland to deny the public its reversionary trust interest.²⁶⁰ Hence, with rising sea levels, such armoring would be considered an encroachment on public tidelines in violation of public trust rights of access, navigation, fishing, and ecosystem functioning.²⁶¹

2. Customary Use

Another source of legal authority for rolling easements is customary use. In the companion cases *Gion v. Santa Cruz* and *Dietz v. King*, the courts held

253. Caldwell & Segall, *supra* note 115, at 552.

254. *Nat’l Audubon Soc’y v. Superior Court*, 33 Cal. 3d 419, 437-40 (1983).

255. *Id.* at 435.

256. Caldwell & Segall, *supra* note 115, at 555.

257. Titus, *supra* note 9, at 1369.

258. *Lechuza Villas West v. Cal. Coastal Comm’n*, 60 Cal. App. 4th 218, 235-241 (1997).

259. *Id.*

260. Titus, *supra* note 9, at 1370-72.

261. *Id.*

that the public can acquire a prescriptive easement over private, dry sand areas of beach so long as they can show “genuine,” past public use.²⁶² The application of prescriptive easements based on customary use is best described by the *Gion* court: “[plaintiffs] seeking to show that land has been dedicated to the public need only produce evidence that persons have used the land as they would have used public land . . . if the land involved is a beach or shoreline area, they should show that the land was used as if it were a public recreation area.”²⁶³ To this end, under California law, prescriptive easements allow for natural migration of the shoreline where customary use follows the beach as it moves.²⁶⁴ Application of easements in this context is confined to preservation of popular beaches rather than to preservation of California’s shoreline as a whole.²⁶⁵ Therefore, a rolling easement can be based on customary beach use, but the degree to which the customary use doctrine applies will vary based on the history of use for a particular beach.

3. Public Nuisance Principles

Additionally, public nuisance principles can be used to implement rolling easements. California defines public nuisance as “an obstruction to freely use a property, so as to interfere with the comfortable enjoyment of life or property, or unlawfully obstruct the free passage or use of any navigable bay, stream, canal, or basin.”²⁶⁶ Armoring structures could be included under this definition, since such structures would “interfere with the public’s use of coastal public lands and would unlawfully obstruct such use and interfere with the comfortable enjoyment of life or property.”²⁶⁷ Further, harms caused by hard armoring structures like seawalls such as “increased erosion, visual blight, loss of public beaches and ecosystem services, and creation of physical and hazardous conditions” could also be considered as public nuisances under California law.²⁶⁸ In fact, in *Scott v. City of Del Mar*, the court held that the legislature has the power to declare certain uses of property as a nuisance and can define armoring in vulnerable locations as a nuisance.²⁶⁹ The *Scott* court found that private seawalls, riprap, and patios on the plaintiffs’ properties completely obstructed access to a public sidewalk area.²⁷⁰ Accordingly, the court deemed the plaintiffs’ improvements to be nuisances per se and ruled that the city of Del Mar had the power to declare them as such and subsequently remove

262. *Gion v. City of Santa Cruz*, 2 Cal. 3d 29 (1970); *Dietz v. King*, 80 Cal. Rptr. 234 (1969).

263. *Gion*, 2 Cal. 3d at 39.

264. Caldwell & Segall, *supra* note 115, at 556.

265. *Id.*

266. Cal. Civ. Code § 3479 (West 2006).

267. Caldwell & Segall, *supra* note 115, at 557 (internal quotations omitted).

268. *Id.* at 558.

269. *Scott v. City of Del Mar*, 58 Cal. App. 4th 1296, 1305-07 (1997).

270. *Id.* at 1299.

them.²⁷¹ Therefore, armoring prohibitions embedded in rolling easements can be based on public nuisance principles.

4. Permits

Finally, rolling easements can be implemented via permits. Under California law, coastal land use is regulated by the Coastal Commission.²⁷² The Coastal Commission's recent Sea Level Rise Policy Guidance advises use of rolling easements in a section on Adaptation Strategies where rolling easements can be implemented by the Coastal Commission through a permit, lease, or other regulatory device that is not considered to be an easement per se.²⁷³ For example, the Coastal Commission has the authority under Section 30253 of the Coastal Act to require all new structures to be setback from the coast by a certain amount that is calculated based on historical erosion and slope stability data.²⁷⁴ This was recently reaffirmed in *Lindstrom v. California Coastal Commission*, where the court found that the California Coastal Commission did not abuse its discretion by requiring that the Lindstrom's house be set back from the edge of a bluff as a condition for authorizing a permit that allowed the owners to build on a vacant oceanfront lot in the city of Encinitas.²⁷⁵ While not technically an easement, this condition does provide for the managed retreat of the shoreline.

Additionally, structures along the coast can be removed in California via permit when the sea reaches a certain threshold level.²⁷⁶ At the aforementioned Gleason Beach, a municipal project known as the "Bridge Project" is scheduled to remove a culvert from a nearby creek as well as debris on the beach and cliffs from old armoring and uninhabitable houses.²⁷⁷ The cliffs will, instead, erode naturally to replenish sand on the beaches below and restore habitat at the mouth of the creek, which will allow the waterway and nearby wetlands to revert back to a more natural state.²⁷⁸

Finally, the Coastal Commission can place "no future armoring" conditions in future permits where public trust rights are at stake.²⁷⁹ Therefore, rolling easements restricting development of armoring structures and requiring the removal of structures when the sea reaches a certain threshold level can be implemented via permits.

Undoubtedly, there is pre-existing legal authority for rolling easements in California, which renders their implementation easier than in other states.

271. *Id.* at 1305.

272. Cal. Coastal Comm'n., *Our Mission*, <https://www.coastal.ca.gov/howeare.html> [<https://perma.cc/8BTM-N2LH>] (last visited April 25, 2022).

273. CAL. COASTAL COMM'N, *supra* note 245.

274. Cal. Pub. Res. Code § 30235 (West 2016); Cal. Coastal Comm'n, Memorandum: Establishing Development Setbacks From Coastal Bluffs (2003).

275. *Lindstrom v. Cal. Coastal Comm'n.*, 40 Cal. App. 5th 73, 99-103 (2019).

276. Smith, *supra* note 70.

277. *Id.*

278. *Id.*

279. Caldwell & Segall, *supra* note 115, at 535.

Currently, California is at a crossroads. The state has two options: carry on with the status quo using the same ineffective, and oftentimes, counterproductive shoreline armoring, or implement novel adaptative retreat tools like rolling easements. In either event, climate change will continue to fundamentally reconfigure California's coastline, both gradually through erosion and rapidly through intense storm events. Ultimately, the choice the state makes has dire consequences for preserving the future of its beaches and coastlines.

CONCLUSION

Impacts of rising sea levels from climate change have forced coastal communities in the US to reevaluate armoring instruments that they have used to hold back the sea for generations. This Article explored the possibility of rolling easements as a viable tool to address sea level rise in coastal communities. Whether by statute, regulation, purchase, donation, or permitting, rolling easements may be implemented to help coastal areas circumvent the inconvenient economic and environmental impacts of rising sea levels on coastal communities. Accordingly, local and state governments would be well advised to anticipate rather than to react to future property damage from rising sea levels.

The Texas Open Beaches Act was the first widescale adoption of a rolling easement doctrine in the US and can serve as a model for other states that are serious about incorporating the doctrine into future coastal management plans. While *Severance* limited the rolling easement doctrine in Texas, rolling easements may still be used to address rising sea levels in coastal communities throughout the US, such as in New Jersey and California. Eventually, state and local governments will be forced to take action as acute impacts of rising sea levels directly threaten coastal economies and environments.

As noted by California State Controller Betty Yee, "the riskiest response to sea level rise is inaction."²⁸⁰ Hopefully, states get ahead of these impacts before it is too late. Otherwise, state and local budgets will be decimated, and beaches may not be around for future generations to enjoy. As astutely observed by Norwegian actor Christopher Heyerdahl: "Mother Nature is the great equalizer. You can't get away from it."²⁸¹

280. Smith, *supra* note 70.

281. Christopher Heyerdahl Quotes, BRAINYQUOTE, https://www.brainyquote.com/quotes/christopher_heyerdahl_509435 (last visited April 25, 2022).