Maine Law Review

Volume 73 | Number 1 Article 6

January 2021

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RISING TO THE CHALLENGE: MANAGED RETREAT AND THE TAKINGS CLAUSE IN MAINE'S CLIMATE CHANGE ERA

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ABSTRACT

It is a near scientific certainty that sea levels will rise between one and eight feet by the end of the century. This will wreak havoc on our infrastructure, ecology, and public health, and cause an unquantifiable amount of economic damage. Given the inevitability of sea level rise, state and local governments must facilitate the managed retreat of people and property away from vulnerable coastal areas. However, governments' ability to facilitate managed retreat comes head-to-head with the Takings Clauses of the United States and Maine Constitutions, which state that the government may not take private property without paying just compensation. This Comment analyzes two methods of managed retreat: (1) use of eminent domain and (2) implementation of rebuilding restrictions. Because eminent domain is costly, politically fraught, and can have the effect of marginalizing already vulnerable populations, local governments should instead implement rebuilding restrictions to facilitate managed retreat. Rebuilding restrictions are an optimal managed retreat tool because they gradually move populations away from the coast and are unlikely to result in successful takings claims that require the government to pay just compensation under either *Lucas v. South Carolina Coastal Council* or *Penn Central Transportation Co. v. City of New York*. Without having to pay just compensation under the Taking Clause according to fair market value of the property, the government is able to develop an alternative means of reallocating coastal communities that is more equitably attuned to the economic and social needs of vulnerable populations.

INTRODUCTION

"*If you can see the sea, the sea can see you.*"[1]

Imagine you have a house on the coast of Maine. Maybe the house has been in your family for generations as a summer home; perhaps you live in it full time. Over time you start to notice changes. They happen slowly at first, but then you notice the changes more and more: the king tides are getting a little higher, winter storms push seaweed and debris a little closer to your home every year, and the saltwater gets closer and closer to your well. Next, a hurricane hits. The rough, rising waters take out your wharf and flood your basement and first floor. The water reaches your electrical and septic systems, short-circuiting the former and flooding the latter. You have no electricity or phone lines—the road to your house floods, cutting you off from vital emergency services. If you are lucky, there are no injuries sustained, and you have enough supplies and food to wait for the waters to recede.

When the waters retreat, your house is waterlogged. Everything in your basement and first floor is ruined, covered in thick, muddy sediment that dries and becomes airborne. Mold starts to grow on everything. You repair as best you can, wait for the water to come again, and think that next time, maybe you will not be so lucky.

In early December 2019, the United Nations Secretary-General, António

1. ORRIN H. PILKEY & KEITH C. PILKEY, SEA LEVEL RISE: A SLOW TSUNAMI ON AMERICA'S SHORES 136 (2019).

Guterres declared that, concerning climate change, "the point of no return is no longer over the horizon."[2] While the statement intended to highlight the critical need to reduce greenhouse gas emissions as quickly as possible,[3] it also highlights a parallel issue. As we make efforts to reduce emissions, we must also think about ways to protect people and property if "the point of no return," the point at which we can no longer reverse the effects of climate change, does occur. Scientists believe that even if we reduce carbon emissions entirely, we will not be able to stop rising sea levels.[4] Thus, in many ways, we have already reached the projected "point of no return." The inevitability of sea level rise means that we need to actively relocate people who live in coastal areas that are vulnerable to sea level rise. This is an issue of great concern for Maine, which has 3,478 miles of coastline and a vibrant coastal economy.[5]

This Comment explores two primary methods of controlling coastal development as a means of facilitating managed retreat: (1) eminent domain and (2) rebuilding restrictions. Both eminent domain and rebuilding restrictions raise interesting legal questions vis-à-vis the Takings Clauses of both state and federal constitutions, which require the government to pay just compensation if private property is taken for a public purpose.[6] Ultimately, the government should select methods of managed retreat that avoid the just compensation obligation under the Takings Clause. In avoiding the Takings Clause, the government would be able to use its discretion to compensate coastal communities in more just and ethical ways that appropriately address the consequences of climate change.

Part I lays out the current scientific data on climate change and sea level rise, the reason that sea levels are rising, and the projected rate of rise over the next century. This part will also address the consequences of sea level rise, including the economic and health impacts and infrastructural implications. Part II provides an overview of the intersection of managed retreat and the Takings Clauses. This section will address the protections created by the Takings Clauses, and why any discussion of managed retreat requires a takings analysis. Part III discusses the first managed retreat tool, eminent domain. This section looks primarily at whether condemnation of coastal property to prevent harm from rising sea levels qualifies as a "public use" and is constitutional. Part IV explores the second managed retreat tool, rebuilding restrictions, and whether adopting these types of ordinances would constitute a regulatory taking that requires just compensation under the Takings Clause. Finally, this Comment concludes by discussing why it is important for the

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2. Imran Rahman-Jones, *Climate Change: The COP25 Talks Trying to Change the World*, BBC NEWS (Dec. 3, 2019), https://www.bbc.com/news/newsbeat-50629410 [https://perma.cc/N9M5-LAFR].

3. *See id.*

4. Oliver Milman, *Sea Levels Set to Keep Rising for Centuries Even if Emissions Targets Met*, THE GUARDIAN (Nov. 6, 2019. 5:00 PM), https://www.theguardian.com/environment/2019/nov/06/sea-level-rise-centuries-climate-crisis [https://perma.cc/ZPK6-239Y]; Cindy Han, *How Sea Level Rise Will Change Maine's Coast*, ME. PUB. RADIO (Sept. 20, 2019), https://www.mainepublic.org/post/how-sea-level-rise-will-change-maines-coast [https://perma.cc/2BHY-F6K2] (transcript on file with author).

5. *Shoreline Mileage of the United States*, NOAA OFF. FOR COASTAL MGMT., https://coast.noaa.gov/data/docs/states/shorelines.pdf [https://perma.cc/VG29-HQF2] (last visited Oct. 29, 2020).

6. U.S. CONST. amend. V; ME. CONST. art. I, § 21; *see also* Steven Gow Calabresi et al., *Individual Rights Under State Constitutions in 2018: What Rights are Deeply Rooted in Modern-Day Consensus of the States?*, 94 NOTRE DAME L. REV. 49, 102-03 (2018).

government to avoid paying just compensation under the Takings Clause. In light of climate change, it is inequitable to require the government to pay property owners according to fair market value of their property, which effectively gives people with the most expensive properties the most money, regardless of need. Equity demands that the government be able to decide who needs compensation most, thus providing a more appropriate metric than fair market value of property. The government would, therefore, be able to determine compensation for those impacted by managed retreat based on a different standard, one that does not perpetuate economic inequality.

I. CLIMATE CHANGE & RISING SEA LEVELS

"Climate Change," as its name would suggest, is the shift in climate that "occurs within a complex realm of environmental interactions, often with unpredictable results."[7] The consequences of climate change can range from rising temperatures, changes in precipitation patterns, droughts and heatwaves, extreme weather events, to, finally, sea level rise.[8] While each of these effects poses a severe risk to the future of our planet, sea level rise has unique and complex implications for the State of Maine and the people who reside along the State's 3,478 miles of coastline.[9]

A. Sea Level Rise

Global sea level rise is not a new phenomenon. Climate data from the National Aeronautics and Space Administration (NASA) suggest that between 1870 and 2013, sea levels rose over 225 millimeters or nearly 9 inches.[10] In Maine, specifically, sea

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7. GEORGE L. JACOBSON ET AL., MAINE'S CLIMATE FUTURE: AN INITIAL ASSESSMENT 3 (Univ. of Me. 2009), https://digitalcommons.library.umaine.edu/cgi/viewcontent.cgi?article=1174&context=ers_facpub [https://perma.cc/N5HE-ATWG]; *see also* U.S. GLOB. CHANGE RSCH. PROGRAM, THE IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH IN THE UNITED STATES 2 (2016), https://health2016.globalchange.gov/low/ClimateHealth2016_FullReport_small.pdf [https://perma.cc/6UTY-28NJ] [hereinafter USGCRP Health Report]. Likening the entirety of Earth's history to a single calendar year, Elizabeth Rush eloquently describes the horror of climate change in this way:

> [T]he . . . Anthropocene [era] . . . begins, launching a geologic period defined by the complete and utter dominance of certain human beings and our endless accumulation of resources. In that fraction of a second, we opened the earth's veins, exhume as much energy as possible, and pump various byproducts into the air, causing the atmosphere to warm twenty times faster than normal. We cause the polar ice caps to melt, the oceans to heat, and the coastline to change its shape. We alter the makeup of the biosphere, the twelve-mile-deep sliver of the earth that is home to all known life that has ever existed in the entire universe. "Abundant" and "geographically widespread" are two ways of describing the extent of humans' impact on the planet. Lately I have been wondering whether the descriptor "index fossil" might also soon apply.

ELIZABETH A. RUSH, RISING: DISPATCHES FROM THE NEW AMERICAN SHORE 54-55 (2018).

8. NASA, *The Effects of Climate Change*, https://climate.nasa.gov/effects/ [https://perma.cc/6ESF-HEMN] (last visited Oct. 29, 2020).

9. *Shoreline Mileage of the United States*, *supra* note 5.

10. National Ocean Service, *Is Sea Level Rising?*, NOAA, https://oceanservice.noaa.gov/facts/sealevel.html [https://perma.cc/R5ZR-S6NB] (last visited Oct. 29, 2020).

levels have increased by approximately eight inches since 1950.[11] While sea levels have been rising for the last century, data released by the Intergovernmental Panel on Climate Change (IPCC) in September 2019 states with statistical "virtual[] certain[ty]"that global mean sea levels will not only continue to rise in the future, but will do so at an accelerated rate.[12] However, rates of sea level rise may dip, spike, and fluctuate over time, potentially making it difficult to predict and plan.[13]

1. Why Are Sea Levels Rising?

Sea levels rise as a result of a complex combination of factors, including thermal expansion, volumetric increase, and interactions between the land and ocean.[14] First, sea levels rise as ocean waters warm, a process that is known as thermal expansion. As temperature increases, the water decreases in density, which causes the volume of the water to expand while the actual mass of the ocean remains the same.[15] A second contributing factor is an actual increase in the amount of water in the ocean caused by melting glaciers and ice sheets in the Arctic and Greenland that contribute to the overall volume of the ocean.[16] Melting is now projected to be the dominant source of global sea level rise.[17]

Third, approximately ten percent of sea level rise is caused by the complex interactions between the land and sea,[18] such as vertical motion of tectonic plates and changes in the earth's gravity;[19] wind patterns;[20] ice, snow, surface water, and groundwater that increase ocean volume;[21] and Gulf Stream currents.[22] Finally, sea

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11. Han, *supra* note 4; *see also* JACOBSON ET AL., *supra* note 7, at 21; INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, THE OCEAN AND CRYOSPHERE IN A CHANGING CLIMATE 55 (2019), https://www.ipcc.ch/site/assets/uploads/sites/3/2019/12/SROCC_FullReport_FINAL.pdf [https://perma.cc/CJ87-E7MH] [hereinafter IPCC Report 2019].

12. IPCC Report 2019, *supra* note 11, at 55-56. The IPCC Report defines "virtual certainty" as having a "99-100% probability." *Id.* at 42 n.1. Over the last two decades, the accelerated rate of sea level rise has already become evident. For example, over the previous twenty years, sea levels have risen at a rate of 0.13 inches per year, which is approximately twice the average rate of rise documented in the eighty years before that. GREATER PORTLAND COUNCIL OF GOV'TS, TOWN OF CHEBEAGUE ISLAND SEA LEVEL RISE VULNERABILITY ASSESSMENT 8 (2016), https://www.townofchebeagueisland.org/vertical/sites/%7B984705D3-C709-4324-9040-19247D095968%7D/uploads/2017-04-07_ltr_from_VD-4.pdf [https://perma.cc/AH2T-2T57] [hereinafter GPCG].

13. *See* GPCG, *supra* note 12.

14. *See* IPCC Report 2019, *supra* note 11, at 330-32, 339 ("For the periods 1970-2015, 1993-2015 and 2006-2015 the simulated contributions from thermal expansion, glacier mass loss and Greenland [surface mass balance] explain respectively 84%, 81%, and 77% of the observed [global mean sea level]."); Han, *supra* note 4; JACOBSON ET AL., *supra* note 7, at 17.

15. IPCC Report 2019, *supra* note 11, at 331; *see* JACOBSON ET AL., *supra* note 7, at 17.

16. U.S. GLOB. CHANGE RSCH. PROGRAM, CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT 335 (2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf [https://perma.cc/DF5H-NKHW] [hereinafter USGCRP Climate Report].

17. IPCC Report 2019, *supra* note 11.

18. *See* Han, *supra* note 4; *see also* USGCRP Climate Report, *supra* note 16, at 335.

19. IPCC Report 2019, *supra* note 11, at 331-32.

20. *Id.* at 360.

21. *Id.* at 338.

22. USGCRP Climate Report, *supra* note 16; Han, *supra* note 4; *see also Maine's Sea Level is Rising*, SEA LEVEL RISE.ORG, https://sealevelrise.org/states/maine/ [https://perma.cc/BQ2L-C79L] (last visited Oct. 29, 2020) (stating that most flooding occurs in winter).

level rise is made worse by human influences, such as infrastructure, development,[23] and habitat degradation, that exacerbate the effects of sea level rise in particular locations.[24]

2. Projected Sea Level Rise

While measuring current sea levels is relatively simple, sea level rise projections are significantly more challenging to calculate reliably. The projections are challenging to model primarily because projected sea level rise depends on which carbon emissions scenario statisticians use in the model.[25] However, the exact rate of carbon emissions in the future is currently unknown.[26] While it is impossible to precisely model future sea level rise, it is undisputed that even if humans were to stop all emissions by 2020, sea levels would still continue to rise.[27] The real question is just by how much.

The lowest projected scenario is a one-foot rise in sea level by 2100.[28] Under this scenario, sea levels will continue to rise at the same rate they are today.[29] On the other end of the spectrum, the highest projections show that by 2100 sea level will increase by 8.2 feet, which corresponds to a 1.7 inch per year increase in sea level rise.[30] This latter model accounts for melting in the Arctic.[31] Experts in Maine project a third, catastrophic scenario of localized sea level increase of between 8 and 11 feet over the next 100 years.[32] This catastrophic projection is likely to occur if humans continue "business as usual."[33]

3. The Relationship Between Sea Level Rise and Extreme Sea Level Events

Finally, it is impossible to discuss sea level rise without also discussing storm surge and severe storms, which are intertwined. Naturally occurring "extreme sea level events" such as king tides, storm surge, and hurricanes are made worse by rising sea levels and lead to more significant damage to coastal regions.[34] As a result of climate change, scientists expect that the "100-year coastal storm" that used to occur once a century will occur every two to three years.[35]

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23. Prosperity after World War II enabled people to buy second homes along the coast, drastically expanding coastal development. GILBERT M. GAUL, THE GEOGRAPHY OF RISK: EPIC STORMS, RISING SEAS, AND THE COST OF AMERICA'S COASTS 5 (2019). This development has since accelerated and is backed by federal and state governments who have incentivized coastal development through tax breaks, flood insurance subsidies, and infrastructure development. *Id.*

24. IPCC Report 2019, *supra* note 11.

25. IPCC Report 2019, *supra* note 11, at 55-56; USGCRP Climate Report, *supra* note 16, at 342.

26. *See* Han, *supra* note 4.

27. IPCC Report 2019, *supra* note 11, at 55-56; Milman, *supra* note 4; Han, *supra* note 4.

28. USGCRP Climate Report, *supra* note 16, at 342.

29. *Id.*

30. *Id.*

31. *Id.*

32. Han, *supra* note 4.

33. *Id.*

34. IPCC Report 2019, *supra* note 11, at 327-28.

35. JACOBSON ET AL., *supra* note 7, at 21; *see also* CLIMATE CHANGE VULNERABILITY ASSESSMENT, ONE CLIMATE FUTURE 23 (2019) ("[The data] illustrates how the historic 25-year 24-hour storm event is expected to be equivalent to the 16-year storm event in 2050 and to the 13-year in 2100.

The ultimate takeaway from the most recent sea level rise research is this: (1) sea levels will continue to rise, (2) extreme sea level events will increase in frequency, and (3) sea levels will continue to increase even if we collectively reduce our emissions to zero. Given the severity and inevitability of these events, our collective thinking on how to address sea level rise needs to place long-term adaptation strategies front and center.

B. Consequences of Sea Level Rise

The impacts of climate change are so complex that a researcher could make it her life's work to explore the effects of climate change on different aspects of human existence. As such, this section will merely provide a brief overview of these impacts as a foundation for why states and municipalities need to think more aggressively about retreat from threatened areas. These effects include economic impacts, infrastructural damage, ecological degradation and health impacts.

1. Economic Impacts

Economic damage as a result of sea level rise can be divide into two different categories: (1) the immediate financial harm caused by storms and floods; and (2) the gradual and projected loss in property values that occur as a result of anticipated sea level rise. The first category—direct economic harm—is one of the most prominent consequences of sea level rise. The most extreme example of this type of financial injury is the destruction of homes, buildings, and infrastructure caused by severe storms and flooding.[36]

Across the lower forty-eight states, more than one trillion dollars in property could be at risk by the end of the century due to proximity to the coast.[37] In Maine, there are currently 7,000 people at risk for flooding, and by 2050, this number will increase to 13,000.[38] In economic terms, this means that approximately 3.5 billion dollars in property in Maine is at risk of being destroyed by sea level rise.[39] Flooding and damage to property is also likely to have negative impacts on businesses and tourism in Maine, especially if beaches disappear as a result of sea level rise.[40]

Likewise, the historic 100-year 24-hour storm is expected to be equivalent to the 52-year in 2050 and to the 42-year in 2100.") [hereinafter Vulnerability Assessment]; IPCC Report 2019, *supra* note 11, at 324 (projecting, with high statistical confidence, that extreme sea level events that were once rare will occur regularly by 2100).

36. Hurricane Sandy alone caused approximately $50 billion in damage. Robin Kundis Craig, *Of Sea Level Rise and Superstorms: The Public Health Police Power as a Means of Defending Against "Takings" Challenges to Coastal Regulation*, 22 N.Y.U. ENV'T L. J. 84, 103 (2014).

37. David Charns, *Scientists Issue Dire Warning for Coastal Maine Communities*, WMTW (June 19, 2018, 3:58 AM), https://www.wmtw.com/article/scientists-issue-dire-warning-for-coastal-maine-communities/21610046# [https://perma.cc/7C8B-FVAV].

38. *Id.*

39. *Id*. In New York and San Francisco $7.7 and $8.6 billion dollar in property, respectively, will be lost by 2045. PILKEY & PILKEY, *supra* note 1, at 33. In the next fifteen years, the United Sates will lose $63 billion in property because of rising sea levels and flooding. *Id.*

40. JACOBSON ET AL., *supra* note 7, at 22 (stating that in York County, Maine "over 260 businesses representing $41.6 million in wages are at risk from coastal flooding and the resulting property destruction and higher insurance costs, although it is possible that long before storm surge reaches the

In addition to the economic impacts caused by extreme sea level events, projected sea level rise also drives down the housing market and decreases coastal property values even if the property has not yet been damaged or flooded. For example, a recent study isolating the statistical relationship between tidal flooding and home values shows that between 2005 and 2017, Maine property collectively lost $69.9 million in value as a result of rising sea levels.[41] Furthermore, homes located within a quarter-mile of a road that will be completely flooded within 15 years decrease in value by $3.71 per square foot every year.[42]

2. Infrastructure

Infrastructural damage is closely tied to economic impacts, as fixing damage to the infrastructure after a storm requires significant government expenditure. Rising sea levels are likely to damage the infrastructure in four primary ways: (1) road and bridge washouts; (2) damage to the electric grid; (3) contamination of water systems; and (4) ongoing stress to infrastructural systems caused by nuisance flooding.

First, flooding will cut off roadways and wash out bridges, essentially cutting people off from vital resources.[43] From a governmental perspective, flooding and storms that wash out and damage roads create unplanned and costly repairs.[44] A study conducted by the United States Department of Transportation found that "27% of major roads, 9% of rail lines, and 72% of ports are potentially vulnerable to flooding from [rising] sea-level[s] . . . in the central Gulf Coast region."[45] In Maine, many peninsula communities rely on one road in and one road out. As a result, these communities are vulnerable to isolation if their single-access road floods.[46]

A second major infrastructural threat caused by rising sea levels is damage to

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hotels and restaurants along Route 1, the beaches which draw tourists to Southern Maine will have disappeared").

41. First Street Foundation, *Rising Seas Swallow $403 Million in New England Home Values* (Jan. 22, 2019), https://firststreet.org/press/rising-seas-swallow-403-million-in-new-england-home-values/ [https://perma.cc/2X8V-UZRN]; *see also* Steven A. McAlpine & Jeremy R. Porter, *Estimating Recent Local Impacts of Sea Level Rise on Current Real-Estate Losses: A Housing Market Case Study in Miami-Dade, Florida*, 37 POP. RES. & POL'Y REV. 871, 875-87 (2018) (explaining the background and methodology used to assess changes in home values); Nathan Strout, *Study Says Sea Level Rise is Costing Bath Homeowners*, PORTLAND PRESS HERALD (Jan. 23, 2019), https://www.pressherald.com/2019/01/23/study-says-sea-level-rise-is-costing-bath-homeowners/ [https://perma.cc/QM6N-U87H]; Lori Valigra, *Rising Seas Swallowed $70 Million Maine Home Values, Study Says*, BANGOR DAILY NEWS (Jan. 22, 2019), https://bangordailynews.com/2019/01/22/business/rising-seas-to-swallow-70-million-in-maine-home-values-study-says/ [https://perma.cc/E3NJ-YEHG (according to the study Bath, Maine, was the city hardest hit. Homes that should be valued at $150,000 are now valued at only $90,000 because of rising sea levels).

42. McAlpine & Porter, *supra* note 41; *see also* Vulnerability Assessment, *supra* note 35, at 5.

43. *See* Island Inst., *Waypoints - Connect: Infrastructure Indicators for Maine's Coast and Islands*, ISSUE 8-9 (Feb. 17, 2020) https://issuu.com/theislandinstitute/docs/waypoints_2019_connect [https://perma.cc/V6JF-7N6U].

44. JACOBSON ET AL., *supra* note 7, at 54.

45. *Id.* at 53-54.

46. *See, e.g.*, Island Inst., *supra* note 43, at 8 (stating that if sea levels rise by two feet, 84% of roads will be inaccessible in Deer Island cutting off 1,308 addresses; 100% of roads will be cut off in Stonington making 909 addresses inaccessible; and 97% of roads will be cut off in Georgetown making 932 addresses inaccessible).

the electric grid. Rising sea levels can short circuit electrical systems leading to increased risk of fires, which could leave thousands without power for several months.[47] In Maine, a category two hurricane could put thirteen power plants and fifteen coastal substations at risk, reducing electrical output across the state by fourteen percent and leading to localized power outages.[48] During electricity blackouts, people often resort to gas generators for power without fully understanding how to use them safely to avoid a buildup of carbon monoxide. [49] As a result, electricity blackouts after an extreme sea level event tend to be associated with high rates of carbon monoxide poisoning.[50]

Third, rising sea levels pose a threat to vital water resource systems. As sea levels rise, saltwater is more likely to permeate groundwater, freshwater wells, and aquifers, leading to increased salinization of freshwater sources.[51] Freshwater salinization is of particular concern for coastal communities in Maine who may rely heavily on wells and aquifers.[52] Were the Maine coast to experience a hurricane comparable in strength to Sandy,[53] overflow of saltwater into aquifers would cause aquifers to be undrinkable for between five and twenty days.[54] Furthermore, rising sea levels and extreme weather events can overwhelm the capacity of sewage plants, causing raw sewage to overflow and contaminate vital water sources.[55] Raw sewage can subsequently contaminate drinking water, exposing humans to over 100 different pathogens.[56]

While infrastructural damage is most readily apparent during an extreme sea level event, recurrent weather stressors—such as "nuisance flooding"—tax infrastructure systems, causing them to deteriorate over time.[57] Continual stress on storm drainage systems caused by rising sea levels increases the risk of sewage overflow and water contamination when a severe storm occurs.[58] When an

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47. *See* John Manuel, *The Long Road to Recovery: Environmental Health Impacts of Hurricane Sandy*, 121 ENV'T HEALTH PERSPS. A152, A153 (2013).

48. DEP'T OF HOMELAND SEC., RESILIENCY ASSESSMENT: CASCO BAY REGION CLIMATE CHANGE 25 (2016).

49. *See* USGCRP Health Report, *supra* note 7, at 105.

50. Manuel, *supra* note 47, at A155.

51. JACOBSON ET AL., *supra* note 7, at 61; Craig, *supra* note 36, at 101.

52. *See* USGCRP Health Report, *supra* note 7, at 163.

53. Research suggests that the possibility of another hurricane with comparable strength to Sandy is not only possible, but that the frequency of such storms is increasing as a result of climate change. *See* Ning Lin et al., *Hurricane Sandy's Flood Frequency Increasing From Year 1800 to 2100*, 113 PNAS 12071, 12071 (2016); *see also* Chris Emery, *Researchers Predict Growing Number of Hurricane Sandy-Like Storm Surges in Future*, PRINCETON UNIV. (Oct. 10, 2016, 4:15 PM), https://www.princeton.edu/news/2016/10/10/researchers-predict-growing-number-hurricane-sandy-storm-surges-future [https://perma.cc/V8HR-7EBR] ("The worst-case scenario has the frequency [of Sandy-like storms] increasing by 17 times by the year 2100 . . . .").

54. DEP'T OF HOMELAND SEC., *supra* note 48, at 24.

55. *See* Manuel, *supra* note 47, at A156-57. During Hurricane Sandy, it is estimated that 2.75 billion gallons of untreated sewage flowed from a flooded sewage plant into nearby water sources. *Id.*

56. JACOBSON ET AL., *supra* note 7, at 61.

57. USGCRP Health Report, *supra* note 7, at 105; *see also* PILKEY & PILKEY, *supra* note 1, at 29.

58. USGCRP Health Report, *supra* note 7, at 105, 164 (stating that deterioration caused by rising sea levels is compounded by the effects of a naturally aging infrastructure system. It is projected that over the next thirty years, the majority of pipes used for drinking water will need to be replaced.).

infrastructural failure occurs, there is rarely a "single point of failure,"[59] such as the destruction of a road or shut down of a power plant. Instead, what often occurs is a "cascading failure," whereby a breakdown in one piece of the complex infrastructural web causes disruptions in other parts of the larger system.[60] Cascading failures eliminate critical response systems, which then diminish a community's capacity to respond adaptively.[61]

3. Ecology

In addition to the built environment, rising sea levels can devastate coastal regions' ecological health, which influences the degree to which the natural environment can flexibly adapt to changing conditions. For example, salt marshes and wetlands not only provide habitats for birds and fish but also serve as vital natural flood protection.[62] Where humans have left marshes and wetlands untouched, these ecosystems are able to adapt to rising sea levels.[63]

However, coastal development and human interference with these ecosystems has harmed the ability of these natural environments to respond adaptively to climate change.[64] When humans begin to change the environment through "ditching, plugging, draining, diking, culverting, and developing alongside and in these unique landscapes—they are yanking, even severing the ropes that tie the marsh together,"[65] thereby impacting the marsh's ability to keep pace with environmental changes.[66] If wetlands are unable to keep pace with sea level rise, they become inundated with salt water, which then causes marsh grass to rot.[67] As the marsh rots, the ground collapses, releasing all of the carbon stored by the marsh back into the atmosphere.[68] To stop the cycle of ecological degradation, marshes must be given the space to

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59. DEP'T OF HOMELAND SEC., *supra* note 48, at 43.

60. USGCRP Health Report, *supra* note 7, at 106.

61. *See id.* at 104.

62. PILKEY & PILKEY, *supra* note 1, at 76; Vulnerability Assessment, *supra* note 35, at 82; JACOBSON ET AL., *supra* note 7, at 21; Jennifer Howard et al., *Clarifying the Role of Coastal and Marine Systems in Climate Mitigation*, 15 FRONTIERS ECOLOGY & ENV'T 42, 48 (2017).

63. Tyler C. Coverdale et al., *Indirect Human Impacts Reverse Centuries of Carbon Sequestration and Salt Marsh Accretion*, 9 PLOS ONE, Mar. 27, 2014, at 1, 1; PILKEY & PILKEY, *supra* note 1, at 76; IPCC Report 2019, *supra* note 11.

64. *See, e.g.*, *In re* Katrina Canal Breaches Litig., 696 F.3d 436, 441-43 (5th Cir. 2012) (explaining that 400 plaintiffs brought suit against the federal government, arguing that construction and dredging of the Mississippi River Gulf Outlet (MRGO) destroyed buffer wetlands and caused erosion that resulted in the levees breaching during Hurricane Katrina); Theresa Chan et al., *Determining Climate Responsibility: Government Liability for Hurricane Katrina?* 49 ENV'T L. REP. NEWS & ANALYSIS 10005, 10006 (2019) (detailing the environmental consequences of the man-made MRGO); Christopher R. Dyess, *Off with His Head: The King Can Do No Wrong, Hurricane Katrina, and the Mississippi Gulf Outlet*, 9 NW J.L. & SOC. POL'Y 302, 315 (2014).

65. RUSH, *supra* note 7, at 59; *see also* Coverdale et al., *supra* note 63, at 2 (describing in Table 1 the different types of direct and indirect effects of human activity on marsh carbon sequestration).

66. JACOBSON ET AL., *supra* note 7, at 21.

67. *See* RUSH, *supra* note 7, at 55.

68. *Id.* at 57; *see also* Ashley N. Bulseco et al., *Nitrate Addition Stimulates Microbial Decomposition of Organic Matter in Salt Marsh Sediments*, 25 GLOB. CHANGE BIOLOGY 3224, 3225 (2019).

migrate inland to regain their equilibrium.[69] Doing so may ultimately require returning developed land to its natural state.[70]

4. Health Impacts

As the previous sections demonstrate, the consequences of sea level rise are complicated and interconnected. Except for drowning, many health impacts of sea level rise are not directly caused by rising waters.[71] Instead, many of the health consequences are a result of secondary effects.[72] Common secondary health impacts include respiratory problems caused by dried sediment,[73] mold growth in flooded homes, [74] carbon monoxide poisoning, and long term mental health problems such as depression, anxiety, and post-traumatic stress disorder. [75] In most situations, people are exposed to multiple factors at the same time, causing "compounding or cascading health impacts."[76]

Furthermore, not all people will experience the impacts of sea level rise in the same ways. Researchers project with high statistical confidence that climate change will exacerbate existing social and health vulnerabilities, putting specific populations such as people with disabilities, people of color, children, low-income communities, pregnant women, and the elderly more at risk.[77] These same vulnerabilities must also be taken into account in identifying ways to mitigate rising sea levels. More broadly, the cumulative impact of repeat storms and the emotional effects of being continuously concerned with climate change can take a toll on health.[78]

C. Managed Retreat from Coastal Areas

Given the inevitability of sea level rise and its harmful consequences, "the relocation of coastal communities is no longer a question of if, but when and how."[79] Climate change conversations must, therefore, include discussions of how we

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69. RUSH, *supra* note 7, at 59.

70. *Id.*; *cf.* Vulnerability Assessment, *supra* note 35, at 82 (explaining the importance of preserving and protecting marsh areas as natural barriers against rising sea levels).

71. Manuel, *supra* note 47, at A153.

72. *See* Kathryn Lane et al., *Health Effects of Coastal Storms and Flooding in Urban Areas: A Review and Vulnerability Assessment*, 2013 J. ENV'T & PUB. HEALTH 1, 10 (2013).

73. Manuel, *supra* note 47, at A156.

74. *Id.* at A153, A157.

75. USGCRP Health Report, *supra* note 7, at 220-21.

76. *Id.* at 29.

77. *See* PILKEY & PILKEY, *supra* note 1, at 36; USGCRP Health Report, *supra* note 7, at 29, 104 ("Poverty is a key risk factor, and the poor are disproportionately affected by extreme events. Low-income individuals may have fewer financial resources and social capital . . . to help them prepare for, respond to, and recover from an extreme event.").

78. USGCRP Health Report, *supra* note 7; *see also* PILKEY & PILKEY, *supra* note 1, at 37.

79. *See* Lydialyle Gibson, *Scholars Advocate "Managed Retreat"—Before Climate Change Sinks Coastlines*, HARV. MAG. (Aug. 22, 2019), https://harvardmagazine.com/2019/08/scholars-advocate-managed-retreat-from-coastlines-before-climate-change-makes-them [https://perma.cc/Z8BQ-DXZA]; *see also* Lisa Grow Sun, *Smart Growth in Dumb Places: Sustainability, Disaster, and the Future of the American City*, 2011 B.Y.U. L. REV. 2157, 2160 (2011) (explaining that because climate change is inevitable, governments must find ways to minimize its impact on communities).

sustainably, efficiently, and consciously retreat from at-risk coastal areas.[80] Movement away from coastal areas is already happening. However, it is occurring on an ad hoc basis with little consideration of broader societal goals and the inequity and marginalization that can occur without preplanning.[81] Therefore, the conversation needs to shift from *how* we are going to rebuild and protect coastal areas to whether we even *should*.[82] The longer communities put off planning for movement away from high-risk coastal areas, the harder it will become to adequately respond to the risks of rising sea levels in an equitable, efficient, and community-centered way.[83]

Far from being a depressing acknowledgment of failure, managed retreat presents a rare opportunity for communities to redesign their cities in sustainable and equitable ways.[84] The United States has a sordid history of using land use planning and housing policy in racially and economically discriminatory ways.[85] Even though these discriminatory policies have since ended, the impacts of these policies are encoded into the very structure of our communities, cities, and towns and continue to persist to this day.[86] Ultimately, undoing these impacts means rebuilding and restructuring our communities and where people live.[87] Managed retreat is a rare

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80. *See, e.g.*, Andrea McArdle, *Managing "Retreat": The Challenges of Adapting Land Use to Climate Change*, 40 U. ARK. LITTLE ROCK L. REV. 605, 618-621 (2018) (providing an overview of managed retreat in the land use context); Lewis Van Alstyne III, *Changing Winds and Rising Tides on Beach Renourishment in Florida: Short-Term Alternatives and Long-Term Sustainable Solutions Using Law and Policy From Florida and Nearby States*, 11 FLA. A&M U. L. REV. 283, 307-308 (2016) (identifying retreat as a potential response to rising sea levels).

81. A.R. Siders et al., *The Case for Strategic and Managed Climate Retreat*, 365 SCI. MAG. 761, 761 (2019); *see also* Eli Keene, *Resources for Relocation: In Search of a Coherent Federal Policy on Resettling Climate-Vulnerable Communities*, 48 TEX. ENV'T L.J. 119, 147-48 (2018) (explaining that the number of communities needing to relocate is only going to grow, which means that a coherent federal funding plan for relocation is needed).

82. *See* Gibson, *supra* note 79.

83. *See id.*

84. *Id. But see* Edward P. Richards, *The Societal Impacts of Climate Anomalies During the Past 50,000 Years and their Implications for Solastalgia and Adaptation to Future Climate Change*, 18 HOUS. J. HEALTH L. & POL'Y 131, 162 (2018) (explaining that managed retreat is not easy in part because of the psychological attachment to a particular location and "sense of place"); McArdle, *supra* note 80, at 625 (stating that there are non-economic impacts of mandated managed retreat, such as psychological effects).

85. *See, e.g.*, RICHARD ROTHSTEIN, THE COLOR OF LAW: A FORGOTTEN HISTORY OF HOW OUR GOVERNMENT SEGREGATED AMERICA 13, 44, 65 (2017) (explaining that some of these racially discriminatory practices include the Federal Housing Administration only insuring mortgages for racially segregated neighborhoods, adoption of zoning rules that segregated families, and providing mortgages only to areas where there was physical separation between races); Jon C. Dubin, *From Junkyards to Gentrification: Explicating a Right to Protective Zoning in Low-Income Communities of Color*, 77 MINN. L. REV. 739, 742 (1993) (explaining that local governments imposed "expulsive zoning" whereby implementation of "higher" zoning is used to force out low-income residents).

86. *See* Sarah Schindler, *Architectural Exclusion: Discrimination and Segregation Through Physical Design of the Built Environment*, 124 YALE. L. J. 1934, 1953-73 (2015) (discussing how municipalities use the built environment—sidewalks, dead end streets, location of bridge entrances, medians, etc.—to create physical barriers that exclude low income people and people of color); *see also* ROTHSTEIN, *supra* note 85, at XVII.

87. *See* ROTHSTEIN, *supra* note 85, at 203 (stating that integration of neighborhoods should be incentivized because segregated neighborhoods disadvantage all communities).

chance to take on this task. As such, managed retreat presents the dual opportunity to not only move communities away from vulnerable coastal areas but also to right some of the wrongs that continue to haunt the United States.[88]

Managed retreat is the movement of "people and assets away from risk . . . in a preplanned, coordinated way."[89] While the word "retreat" carries with it a connotation of failure, managed retreat "is not a goal in and of itself but a means of contributing to societal goals."[90] Thus, managed retreat from the threat of rising sea levels is more accurately a "set of tools" or methods that can be used to "strengthen [the coastline's] natural resources while assuring the recovery and long-term safety of its inhabitants."[91] These managed retreat "tools" range from development planning, flood insurance reform, zoning overlays, setbacks, building and rebuilding restrictions, building moratoria, condemnation, and buyouts, among others.[92] Each tool promotes movement away from the coast either all at once or gradually.[93]

While there are innumerable ways to incentivize movement away from coastlines, this Comment considers two managed retreat tools in particular: (1) the use of eminent domain by local and state governments, and (2) the enactment of ordinances known as "rebuilding restrictions" that prohibit or restrict rebuilding once a structure has been destroyed by rising sea levels or an extreme sea level event. These two managed retreat tools provide a useful lens through which to view and strategize around some of the Takings Clause issues that may arise in the implementation of managed retreat.

First, eminent domain, as a legally straightforward method of retreat,[94] highlights some of the broader social and political considerations that must be taken into account in deciding how and when to retreat from vulnerable areas. Furthermore, eminent domain, as an extreme option, provides a foil to other managed retreat tools that can be useful in deciding how to implement managed retreat. Second, rebuilding restrictions are a perfect vehicle for exploring the property implications of managed retreat because the exact legal consequence of a rebuilding restriction is unclear. This managed retreat tool is a useful context for exploring the various ways in which a court would apply takings jurisprudence in the novel context

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88. *See id.* at XI ("By failing to recognize that we now live with the severe, enduring effects of *de jure* segregation, we avoid confronting our own constitutional obligation to reverse it.").

89. Sophia Schmidt, *Considering 'Managed Retreat' as a Response to Sea Level Rise*, DEL. PUB. MEDIA (Sept. 6, 2019), https://www.delawarepublic.org/post/considering-managed-retreat-response-sea-level-rise [https://perma.cc/QA2C-9P6K]; *see* Gibson, *supra* note 79.

90. A.R. Siders et al., *supra* note 81; *see also* Andrea McArdle, *Storm Surges, Disaster Planning, and Vulnerable Populations at the Urban Periphery: Imaging a Resilient New York After Superstorm Sandy*, 50 IDAHO L. REV. 19, 37 (2014) (explaining that in its climate planning, New York City "slipped into the colloquial use of the term 'retreat' as a surrendering to climate change and abandonment of the coastline, which runs the risk of overwhelming the world's more specific meaning as an urban land use policy and strategy for responding to climate change").

91. Liz Koslov, *The Case for Retreat*, 28 PUB. CULTURE 259, 361 (2016). *See generally* ANNE SIDERS, COLUM. CTR. FOR CLIMATE CHANGE L., MANAGED COASTAL RETREAT: A LEGAL HANDBOOK ON SHIFTING DEVELOPMENT AWAY FROM VULNERABLE AREAS 5-7 (2013).

92. *See* SIDERS, *supra* note 91, at 5-7 (providing an overview of potential managed retreat policies and tools that can be implemented to incentivize movement away from coastlines).

93. *See id.*

94. *See* Hyo Kim & Caroline A. Karp, *When Retreat is the Better Part of Valor: A Legal Analysis of Strategies to Motivate Retreat from the Shore*, 5 SEA GRANT L. & POL'Y J. 169, 189 (2012).

of sea level rise. Moreover, building restrictions demonstrate the inherent push and pull between private property rights and public welfare, providing an avenue through which to explore broader social issues present at the intersection of the environment and property.

In the last decade, legal scholarship on climate change has exploded, likely correlated with a general increase in societal awareness, acceptance, and escalating urgency. While many legal scholars have examined facets of the intersection of rising sea levels and property rights, there has been no research specifically on its impact in Maine. Furthermore, the majority of these articles, provide a broad overview of different managed retreat options, rather than engaging in an in-depth analysis of just a few.[95]

This Comment adds to this body of research by providing an in-depth look at the takings implications of two specific managed retreat tools in the context of Maine. This focus on Maine acknowledges that climate impacts are highly site-specific. While eminent domain may be the most straightforward managed retreat tool, local governments should instead implement rebuilding restrictions because they are less likely to be "takings" under the Fifth Amendment. Moreover, when paired with a social safety net financial program, rebuilding restrictions present a unique opportunity to redistribute wealth, desegregate our communities, and undo some of the harmful social policies that have become physically ingrained in the layout of our communities.

1. Governmental Authority to Implement and Incentivize Managed Retreat

As a threshold matter, it is vital to consider not only who will be implementing these managed retreat tools but also whether that entity has the authority to do so. While the federal government could initiate managed retreat from coastal areas utilizing its Commerce Clause power,[96] state and local governments are the more likely implementers of managed retreat. For political reasons, the federal government may be unwilling to take action. Additionally, sea level rise impacts are

95. *See, e.g.*, Jeremy Patashnik, *The Trolley Problem of Climate Change: Should Governments Face Takings Liability if Adaptive Strategies Cause Property Damage*, 119 COLUM. L. REV. 1273 (2019) (addressing whether the government should face takings liability if strategies for mitigating sea level rise causes damage to others); Gary Dreyzin, *The Next Wage of Climate Change Litigation: Comparing Constitutional Inverse Condemnation Claims in the United States, South Africa, and Japan*, 31 GEO. ENV'T L. REV. 183 (2018) (analyzing the climate change impacts of inverse condemnation claims across different countries); John Lovett, *Moving to Higher Ground: Protecting and Relocating Communities in Response to Climate Change*, 42 VT. L. REV. 25 (2017) (analyzing whether property owners can bring a claim for governmental failure to protect against sea level rise); Craig, *supra* note 36, at 103 (arguing that governments should frame their climate change intervention strategies in terms of public health); Michael Allen Wolf, *Strategies for Making Sea-Level Rise Adaptation Tools 'Takings-Proof,'* 28 J. LAND USE 157 (2013) (providing an overview of different sea level rise adaptation methods and their subsequent risks); Kim & Karp, *supra* note 94 (analyzing the legal implications of mandatory setbacks, coastal armoring, cluster zoning, and mandated flood insurance).

96. *See* Kim & Karp, *supra* note 94, at 179 (explaining that, through the Commerce Clause power, the federal government has the authority to regulate all navigable waters and channels of commerce. In combination with the Necessary and Proper Clause, Congress is able to "enact most of the nation's public health-related, environmental laws . . . [which] will continue to affect development in coastal and riparian floodplains.").

localized in nature, and, as such, local governments have a better understanding of the needs, concerns, and barriers at play in a particular locale.

a. State Authority to Implement Managed Retreat

The state of Maine--and all other states implementing managed retreat—has ample authority to do so. The Tenth Amendment of the U.S. Constitution provides that all "powers not delegated to the United States [i.e., federal government] by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."[97] Subject to constitutional restraints incorporated against the States, such as the Takings, Due Process, and Equal Protection Clauses, states remain free to "establish and enforce laws protecting the public's health, safety, and general welfare, or to delegate this right to local governments."[98] Beyond these general police powers, Maine statutory provisions such as the Natural Resources Protection Act,[99] Coastal Zone Management Act,[100] and Mandatory Shoreline Zoning Act[101] have all articulated the state's authority to regulate coastal areas, plan for development, and protect natural resources.

b. Local Authority to Implement Managed Retreat

While states may articulate broad overarching policy goals or minimum requirements for the preservation of shorelines and management of development, local governments are often in charge of implementing these land use directives pursuant to their home rule authority.[102] In 1969, Maine amended its constitution to grant municipalities home rule authority, which was subsequently codified by the legislature.[103] Maine courts have treated this successive codification as being broader than the Maine Constitution, allowing local governments the wide latitude to enact ordinances that address issues beyond those that are "local and municipal in character."[104] Given the broad authority of municipal governments to pass laws that further the police powers, as delegated by the state, there is little question that local governments would be able to enact ordinances in furtherance of managed retreat.

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97. U.S. CONST. amend. X.

98. *Police Power*, BLACK'S LAW DICTIONARY (11th ed. 2019).

99. *See* 38 M.R.S.A. § 480-A (Supp. 2020).

100. *See* 38 M.R.S.A. § 1801 (1985).

101. *See* 38 M.R.S.A. § 435 (2013).

102. *See* Kim & Karp, *supra* note 94, at 181.

103. *See* ME. CONST. art. VIII, pt. 2, § 1; 30-A M.R.S.A § 2101 (1987); *see also Ordinances & Home Rule*, ME. MUN. ASS'N., https://www.memun.org/Training-Resources/Local-Government/Ordinances-Home-Rule [https://perma.cc/6SCT-U2Q3] (last visited Oct. 29, 2020).

104. School Comm. of York v. Town of York, 626 A.2d 935, 938-39 (Me. 1993). *Compare* ME. CONST. art. VIII, pt. 2, § 1 ("The inhabitants of any municipality shall have the power to alter and amend their charters on all matters, not prohibited by Constitution or general law, which are local and municipal in character. The Legislature shall prescribe the procedure by which the municipality may so act."), *with* 30-A M.R.S.A. § 3001(1) (1987) ("Any municipality, by the adoption, amendment or repeal of ordinances or bylaws, may exercise any power or function which the Legislature has power to confer upon it, which is not denied either expressly or by clear implication, and exercise any power or function granted to the municipality by the Constitution of Maine, general law or charter. . . . This section, being necessary for the welfare of the municipalities and their inhabitants, shall be liberally construed to effect its purpose.").

II. THE TAKINGS CLAUSE

The government's authority to use its police powers to protect the public health, safety, morals, and general welfare of its citizens comes head-to-head with private property rights. The importance of private property protections is engrained in our cultural values and our state and federal constitutions through the adoption of Takings Clauses.[105] As such, the primary nexus of the law and managed retreat is likely to be in the form of takings claims brought by property owners and developers.

A. The Federal Takings Clause

The U.S. Constitution provides that "private property" shall not "be taken for public use, without just compensation."[106] There are two categories of takings: (1) physical takings, where the government takes possession of the land itself, usually through eminent domain, and (2) regulatory takings, where the government enacts a regulation that affects private property.[107] While historically created to address *physical* appropriation of private property by the government,[108] the majority of modern takings litigation centers on regulatory takings.[109] Thus, the majority of contemporary takings litigation examines whether a regulation impacts private property to such an extent that it is functionally equivalent to a physical taking and should be subject to the same standard of just compensation.[110]

Within its regulatory takings jurisprudence, the U.S. Supreme Court further divides regulatory takings cases into two broad categories: (1) cases that are subject to the Court's *per se* takings rules, and (2) cases that are subject to an ad hoc balancing test.[111] The *per se* rules apply where the government regulation either authorizes a permanent physical invasion of property by a third party[112] or where the regulation deprives the property owner of "all economically beneficial use[ ] of the property."[113] If neither of these categorical rules apply, the court engages in a fact-specific, ad hoc inquiry to determine whether the regulation nonetheless authorizes a taking.[114]

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105. *See generally* Calabresi et al., *supra* note 6 (providing an overview of adoption of takings clauses in state constitutions).

106. U.S. CONST. amend. V.

107. *See, e.g.*, Kelo v. City of New London, 545 U.S. 469 (2005) (eminent domain); Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104 (1978) (regulatory taking).

108. William Michael Treanor, *The Original Understanding of the Takings Clause and the Political Process*, 95 COLUM. L. REV. 782, 785-92 (1995) (explaining the historical development of the Takings Clause).

109. *Id.*

110. *See, e.g.*, Lingle v. Chevron U.S.A., Inc., 544 U.S. 528, 539 (2005) (stating that the central "touchstone" of the Supreme Court's regulatory takings jurisprudence is "identify[ing] regulatory actions that are functionally equivalent to the classic taking in which government directly appropriates private property or ousts the owner from his domain").

111. *See, e.g.*, Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 441 (1982) (*per se* taking); Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1019 (1992) (*per se* taking); *Penn Cent. Transp. Co.*, 438 U.S. at 124 (ad hoc balancing test).

112. *See Loretto*, 458 U.S. at 441.

113. *Lucas*, 505 U.S. at 1019.

114. *See Penn Cent. Transp. Co.*, 438 U.S. at 124.

B. The Maine Takings Clause

In comparison, the takings provision of the Maine Constitution states that "[p]rivate property shall not be taken for public uses without just compensation, nor unless the public exigencies require it."[115] While Maine has not developed a substantially robust takings jurisprudence, the Law Court[116] has stated that "[its] analysis and conclusion are the same under both [the Maine and U.S.] Constitutions."[117]

The majority of regulatory takings cases in Maine (at least as decided by the Law Court) date back to the 1970s and 1980s, with the most recent major case decided in 2001.[118] In *Seven Islands Land Co. v. Maine Land Use Regulation Commission*, the Law Court established the current takings standard, stating that property is "taken" when the extinguishment of a "'fundamental attribute of ownership' . . . would render the property substantially useless."[119] In determining whether a regulation exacts a taking, the court must "determine the value of the property at the time of the governmental restriction and compare that with its value afterward, to determine whether the diminution, if any, is so substantial as to strip the property of all practical value."[120] The Law Court has labeled this a "categorical rule,"[121] and subsequent case law has treated this test as comparable to the *per se* rule adopted by the U.S. Supreme Court in *Lucas v. South Carolina Coastal Council.*[122]

Thus, because the courts have interpreted the Maine takings provision as having the same scope, and equivalent analysis as the U.S. Constitution, federal takings case law may provide guidance in considering a takings issue in Maine.[123] The Law Court and trial courts have consistently cited to federal takings jurisprudence in developing

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115. ME. CONST. art. I, § 21. In the regulatory takings context, Maine's takings standard tracks the federal standard. In the eminent domain context, Maine requires the additional element of public exigency. *See id.*

116. Maine's highest court, the Maine Supreme Judicial Court, is referred to as the "Law Court" when deciding cases in its appellate capacity. *See* Supreme Court, *State of Maine Judicial Branch*, https://www.courts.maine.gov/maine_courts/supreme/index.shtml [https://perma.cc/PYB6-PYAN] (last visited Oct. 29, 2020).

117. Bell v. Town of Wells, 557 A.2d 168, 177 (Me. 1989); *see also* MC Assocs. v. Town of Cape Elizabeth, 2001 ME 89, ¶ 10, 773 A.2d 439 (stating that an analysis of whether property has lost all beneficial or productive use is the same under both the Maine and U.S. Constitutions).

118. *See, e.g.*, *MC Assocs.*, 2001 ME 89, 773 A.2d 439; Seven Islands Land Co. v. Me. Land Use Regul. Comm'n, 450 A.2d 475 (Me. 1982); State v. Johnson, 265 A.2d 711 (Me. 1970); *see also* Michael A. Duddy, *Taking it Too Far: Growth Management and the Limits of Land-Use Regulation in Maine*, 44 ME. L. REV. 99 (1992) (tracing the development of Maine's takings clause).

119. *Seven Islands Land Co.*, 450 A.2d at 482 (quoting Agins v. Tiburon, 447 U.S. 255, 262 (1980)).

120. *Id.*

121. *See MC Assocs.*, 2001 ME 89, ¶ 11, 773 A.2d 439.

122. *See, e.g.*, *id.* (citing to both *Lucas* and Maine takings precedent in articulating Maine's categorical takings standard); *see also* Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1015 (1992).

123. *See* Madden v. Inhabitants of Frankfort, No. AP2012001, 2012 WL 9189533, at *5 n.3 (Me. Super. Ct. Sept. 26, 2012) ("The scope of the takings clause of the Maine Constitution has generally been interpreted as coextensive with the takings clause of the U.S. Constitution, so that state courts may properly consider federal case law when applying the Maine Constitution."); Fichter v. Bd. of Env't Prot., No. CV-90-624, 1997 Me. Super. LEXIS 13, at *10 (Jan. 9, 1997) ("[T]o the extent that [federal caselaw] has modified or shed light on Fifth Amendment takings law, it has also modified or shed light on the state constitutional provision.").

and applying the current Maine standard.[124] Given that the courts have interpreted the Maine takings provision as being coterminous with the federal Takings Clause, the Law Court is likely to turn to federal case law for guidance in analyzing takings issues that arise as a result of climate change and sea level rise.[125] As such, this Comment will analyze federal case law where the Maine courts have not spoken.

C. Takings Jurisprudence and Cultural Views of Property

The inclusion of private property protections within the Maine and U.S. Constitutions recognizes the right to exclude others from private property as a fundamental American value.[126] However, the government's ability to take private property "for public use" nevertheless demonstrates that, while protecting private property is of paramount importance, it must be weighed against the public good.[127] In some situations, the broader societal benefit achieved by taking private property far outstrips the impact on the private property owner.[128] However, the Supreme Court has stated that the purpose of the Takings Clause in the Fifth Amendment is to prevent the "[g]overnment from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole."[129] Thus,

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124. *See MC Assocs.*, 2001 ME 89, ¶¶ 4-6, 11, 773 A.2d 439 (citing to *Mahon*, *Penn Central*, and *Lucas* with approval); *Seven Islands Land Co.*, 450 A.2d at 482 (citing to *Penn Central* in discussing the ad hoc takings analysis and "property as a whole" against which diminution in value is measured); *Madden*, 2012 WL 9189533, at *5 (citing to *Loretto*, *Lucas*, *Penn Central*, and *Lingle* in discussing the scope of the Maine takings provision in relation to the federal standards); Wyer v. Bd. of Env't Prot., No. CV-92-1091, 1998 Me. Super. LEXIS 96, at *8 (Apr. 14, 1998), *aff'd*, 2000 ME 45, 747 A.2d 192 (citing to the *Penn Central* factors); AIU Ins. Co. v. Superintendent, No. CV-89-963, 1991 Me. Super. LEXIS 5, at *22-29 (Jan. 2, 1991) (analyzing *Penn Central* in the context of a confiscatory insurance rate).

125. While it is likely that the Law Court will use federal case law as guidance when interpreting Maine's takings clause, the importance of takings law in Maine's climate change battle may prompt a divergence at some point.

126. *See* Int'l News Serv. v. Associated Press, 248 U.S. 215, 250 (1918) (Brandeis, J., dissenting) ("An essential element of individual property is the legal right to exclude other from enjoying it."). Takings jurisprudence reflects the tension between two schools of property theory: traditional law and economics theory, and progressive property theory. Law and economic theory focuses on the efficient use of property through privatization, which internalizes the externalities thereby maximizing the efficient use of property. *See* Brandon M. Weiss, *Progressive Property Theory and Housing Justice Campaigns*, 10 U.C. IRVINE L. REV. 251, 256 (2019); Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 350 (1967). Progressive property theorists argue that there are certain social obligations inherent in owning private property because ownership of property by one person naturally means that others are excluded from and denied that property. *See* Weiss, *supra*, at 257; Timothy M. Mulvaney, *Progressive Property Moving Forward*, 5 CAL. L. REV. CIR. 349, 360 (2014); Gregory S. Alexander et al., *A Statement of Progressive Property*, 94 CORNELL L. REV. 743, 743 (2009); Laura S. Underkuffler, *Property: A Special Right*, 71 NOTRE DAME L. REV. 1033, 1039 (1996) ("If the enjoyment of a particular good by one person is protected, then the enjoyment of that same good by others is denied. The extension of property protection to one person *necessarily and inevitably* denies the same right to others."). Progressive property theorists argue the importance of integrating transparency, humility, and group identity into property decisions. *See* Mulvaney, *supra*, at 358-369.

127. Micah Elazar, *"Public Use" and the Justification of Takings*, 7 U. PA. J. CONST. L. 249, 252 (2004).

128. *See id.* at 249.

129. Armstrong v. United States, 364 U.S. 40, 49 (1960); *see also* Lingle v. Chevron U.S.A., Inc., 544 U.S. 528, 537 (2005).

any takings analysis must consider these background concepts of social responsibility, and who bears the cost.

The most clear-cut example of the use of the Takings Clause is eminent domain, whereby the government physically takes private property for a public purpose.[130] What is significantly less clear cut is whether a governmental regulation, which may affect the rights of a property owner—but where the government has not physically taken possession of the property—is nevertheless considered a taking under the Fifth Amendment (or the Maine Constitution). While the U.S. Supreme Court has created several categorical rules[131] to determine when governmental action constitutes a taking, the majority of takings disputes fall somewhere along a spectrum. As Figure 1 demonstrates, there is no exact point at which an unconstitutional taking has occurred.[132] A Maine Superior Court judge described the Takings Clause in this way:

> In land use "regulatory takings" law . . . there is a continuum along which the exercise of police powers at one point may simply implicate due process deprivation of property concerns but another point may be so onerous as to implicate the takings clause. The exact point at which a regulation becomes so onerous, or goes "too far," has never been precisely delineated by the Supreme Court and, in fact, has been recognized as impossible to locate except on an ad hoc basis. "There is no set formula to determine where regulation ends and taking begins."[133]

As seen in Figure 1, the different managed retreat tools align along the Takings Clause continuum, with eminent domain on one side (a taking that requires just compensation) and setbacks on the other end of the spectrum (not a taking).[134] While it is impossible to pinpoint the exact moment at which a regulation becomes a taking,[135] sea level rise complicates the takings analysis by raising complex questions of governmental responsibility, and which members of society should bear the cost of protecting coastal areas. While larger societal values[136] are embedded in all

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130. *See, e.g.*, Kelo v. City of New London, 545 U.S. 469 (2005).

131. *See* Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 426 (1982) (holding that a permanent physical occupation authorized by the government is a taking); Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1015 (1992) (stating that a regulation exacts a taking if it completely wipes out the value of the property).

132. *See* AIU Ins. Co. v. Superintendent, No. CV-89-964, 1991 Me. Super. LEXIS 5, at *19 (Jan. 2, 1991).

133. *Id.* (quoting Goldblatt v. Town of Hempstead, 369 U.S. 590, 592 (1962)). This case did not apply a takings analysis in the context of land use. However, Justice Perkins nonetheless provides a useful discussion of the theoretical background underpinning the takings analysis.

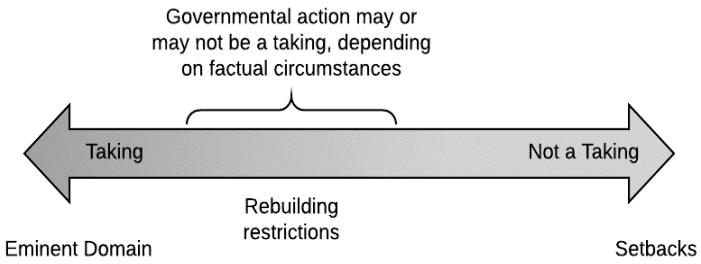
134. *See* Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Plan. Agency, 535 U.S. 302, 327 (2002) (stating that setback ordinances are not regulatory takings because they only place restrictions on a limited portion of a piece of property).

135. Some states have attempted to numerically quantify the point at which a taking occurs by passing legislation that states that a taking occurs if property is reduced in value by a specific percentage. *See, e.g.*, MISS. CODE ANN. § 49-33-7(h) (1995) (40% reduction in fair market value); TEX. GOV'T CODE ANN. § 2007.002(5)(B)(ii) (West 1997) (25% reduction in fair market value).

136. *See e.g.*, Marshall B. Knapp, *Social Values and Older Persons: The Role of the Law*, 7 MARQ. ELDER'S ADVISOR 69, 72 (2005) ("[T]he law *reflects* and embodies prevailing social attitudes by codifying and enshrining them with a formal, official, and enforceable status."); Underkuffler, *supra* note 126, at 1046 ("Property rights are, by nature *social* rights; they embody how we, *as a society*, have

takings jurisprudence, even if only implicitly, rising sea levels throw many of these considerations into a new light. As a result, the catastrophic effects of climate change may force courts to re-think how takings claims should be resolved in light of new and pressing threats to society that will be ubiquitous in coastal communities.

Figure 1. The Takings Clause Continuum



III. MANAGED RETREAT TOOL #1: EMINENT DOMAIN

The first managed retreat tool that state and local governments could use to move people away from high-risk coastal areas is eminent domain. Eminent domain is the most extreme method of managed retreat as the government physically takes possession of the property at issue, thereby engaging in a complete taking that is subject to just compensation under the state and federal Takings Clauses. When the government utilizes eminent domain, the government *must* pay just compensation equal to fair market value of the property before condemnation occurred.[137] Because the government takes physical possession of the private property through the use of eminent domain, this managed retreat tool is relatively straightforward and uncomplicated with respect to where it falls on the takings continuum [138] However, even if the government is willing to pay just compensation, the question remains whether the taking is for a "public use."[139]

In interpreting the Maine Constitution and state statutes, the Law Court has stated that for the state or a local government to exercise the power of eminent domain the following two elements must be met: (1) the property must be for public use, and (2) the use of eminent domain must be in response to public exigencies.[140] A public exigency requires the court to find the following: that "the taking was necessary, and the property interest was taken only to the extent necessary; and the property is suitable for the particular public use for which it was taken."[141] With

chosen to reward the claims of some people to finite and critical goods, and to deny the claims to some goods by others.").

137. Horne v. Dep't of Agric., 576 U.S. 351, 394 (2015) ("The Court has repeatedly held that just compensation normally is measured by the market value of the property at the time of the taking.") (quoting United States v. 50 Acres of Land, 469 U.S. 24, 29 (1984)).

138. *See* Wolf, *supra* note 95, at 164; *see infra* Figure 1 (providing a visual representation of the takings continuum).

139. *See id.*

140. *See* ME. CONST. art. I, § 21.

141. Bayberry Cove Child.'s Land Trust v. Town of Steuben, 2018 ME 28, ¶ 9, 180 A.3d 119 (quoting Portland Co. v. City of Portland, 2009 ME 98, ¶ 25, 979 A.2d 1279).

respect to public exigency, the Law Court gives a great deal of deference to the municipality, looking only to see whether the taking "was made in bad faith or through an abuse of power."[142] Because courts give substantial deference to municipalities in determining whether there was public exigency, there is little to no precedent from Maine courts analyzing this factor. Therefore, this Comment focuses solely on the issue of "public use."

A. Preservation of Coastal Ecology is a "Public Use" Justifying Eminent Domain

The central question in using eminent domain to facilitate managed retreat is whether the condemnation of private property to protect people from rising sea levels and facilitate managed retreat qualifies as a "public use." Scholars generally agree that there are few legal barriers to governments using eminent domain as a managed retreat tool,[143] especially if couched in terms of ecological preservation, which courts have consistently held to be a "public use."[144] Ultimately, courts are likely to hold that under both the U.S. and Maine Constitutions, condemning property for ecological preservation and creating a protective barrier against sea level rise is a "public use." However, this issue is likely a closer call under Maine law due to additional statutory restrictions on the use of eminent domain that go beyond the state constitution.

1. Public Use: Federal Caselaw

Since the late 1800s, the U.S. Supreme Court has interpreted the phrase "public use" as being equivalent with "public purpose"[145] and has demonstrated nearly unrestricted deference to Congress and state legislatures in determining whether the condemnation of land is for a "public use."[146] In *Kelo v. City of New London*, the

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142. *Id.* ¶ 10 (quoting Dyer v. Dep't of Transp., 2008 ME 106, ¶ 19, 951 A.2d 821) (internal quotation marks omitted); *see also Portland Co*., 2009 ME 98, ¶ 25, 979 A.2d 1279 ("[I]n an eminent domain action, a property owner has no constitutional right to have the question of public exigency judicially reviewed, except to determine whether the government acted in bad faith or abused its power.").

143. *See* Lovett, *supra* note 95, at 31; Kim & Karp, *supra* note 94.

144. *See, e.g.*, United States v. 480 Acres of Land, 557 F.3d 1297, 1300 (11th Cir. 2009) (discussing the use of eminent domain in expanding Everglades National Park); United States v. Eighty Acres of Land, 26 F. Supp. 315, 320 (E.D. Ill. 1939) (discussing the use of eminent domain in the condemnation of property for the purpose of preserving forestland); Steven A. Hemmat, *Parks, People, and Private Property: The National Park Service and Eminent Domain*, 16 ENV'T L. 935, 936-38 (1986) (explaining the use of eminent domain in obtaining land for conservation by the National Park Service); *History of the Federal Use of Eminent Domain*, U.S. DEP'T OF JUST. (May 15, 2015), https://www.justice.gov/enrd/history-federal-use-eminent-domain [https://perma.cc/9U8J-PF3B] (explaining the federal government's history of using eminent domain for historic preservation and environmental conservation).

145. Kelo v. City of New London, 545 U.S. 469, 480 (2005).

146. *See id.* at 483 ("[The City's] determination that the area was sufficiently distressed to justify a program of economic rejuvenation is entitled to our deference."); Hawaii Hous. Auth. v. Midkiff, 467 U.S. 229, 241 (1984) ("[T]he Court has made clear that it will not substitute its judgment for a legislature's judgment as to what constitutes a public use unless the use be palpably without reasonable foundation." (internal quotation marks omitted)); Berman v. Parker, 348 U.S. 26, 32 (1954) ("[W]hen the legislature has spoken, the public interest has been declared in terms well-nigh conclusive. In such

Supreme Court held that economic development was a "public use."[147] Not only had the state legislature determined that condemnation of the property was necessary for the economic revitalization of the area and was, therefore, a "public use," but promoting economic development was deemed a "traditional and long-accepted function of government."[148] The *Kelo* holding and deference to the legislature had the practical effect of allowing nearly any legislative determination of "public use" to be a permissible justification for condemning private property.[149]

The Supreme Court's deference in *Kelo* to the state legislature's determination of whether economic development was a "public use" was not a departure from precedent. Before *Kelo*, the Court consistently upheld legislative determinations of "public use" in situations that did not fall squarely into traditional conceptions of "public use." For example, in *Hawaii Housing Authority v. Midkiff*, the government upheld the condemnation of land to break up an oligopoly as a "public use."[150] In *Berman v. Parker*, the condemnation of property under a slum clearance statute was a "public use." [151] These cases demonstrate that the Supreme Court has consistently equated "public use" under eminent domain power with the state's police power to protect "public safety, public health, morality, peace and quiet, law and order."[152]

2. Public Use: Maine Caselaw and Statutes

While the Law Court has taken a relatively permissive view[153] of what constitutes a "public use," the Law Court's interpretation is not as broad as that of the U.S. Supreme Court. Maine courts have held that property is "devoted to a public use only when the general public, or some portion of it (as opposed to particular individuals), in its organized capacity and upon occasion to do so, has the right to demand and share in its use."[154] At the time the property is condemned, the land cannot be only theoretically taken for public use but must be taken for public use "in

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cases the legislature, not the judiciary, is the main guardian of the public needs to be served by social legislation . . . .").

147. *Kelo*, 545 U.S. at 483-88.

148. *Id.* at 484.

149. *See id.* at 488-89; Lynda J. Oswald, *Public Uses and Non-Uses: Sinister Schemes, Improper Motives, and Bad Faith in Eminent Domain Law*, 35 B.C. ENV'T AFF. L. REV. 45, 55 (2008).

150. *See Midkiff*, 467 U.S. at 241-44.

151. *Berman*, 348 U.S. at 31-36.

152. *See Kelo*, 545 U.S. at 501-502 (O'Connor, J., dissenting); *Berman*, 348 U.S. at 31-33; *see also Midkiff*, 467 U.S. at 240 ("The 'public use' requirement is [] coterminous with the scope of the sovereign's police power.").

153. The current standard for eminent domain in Maine is significantly more relaxed compared to the standard applied in the late 1800s, which was highly protective of private property rights. *See* Bangor & P.R. Co. v. McComb, 60 Me. 290, 295 (1872) ("This exercise of the right of eminent domain is, in its nature, in derogation of the great and fundamental principle of all constitutional governments, which secures to every individual the right to acquire, possess and defend property. As between individuals, no necessity, however great, no exigency, however imminent, no improvement, however valuable, no refusal, however unneighborly, no obstinacy, however unreasonable, no offers of compensation, however extravagant, can compel or require any man to part with an inch of his estate. The constitution protects him and his possession, when held on, even to the extent of churlish obstinacy.").

154. Bayberry Cove Child.'s Land Tr. v. Town of Steuben, 2018 ME 28, ¶ 18, 180 A.3d 119 (quoting Blanchard v. Dep't of Transp., 2002 ME 96, ¶ 29, 789 A.2d 1119).

actuality, practicality and effectiveness."[155]

Furthermore, the codification of eminent domain under Maine statutory law, which authorizes municipalities to acquire real estate for public uses, reflects general skepticism towards a broad interpretation of "public use."[156] For example, the Maine Legislature limited the scope of the eminent domain authority, preventing the State or a local government from condemning land used for "agricultural, fishing or forestry or land improved with residential homes, commercial or industrial business or other structures[] [f]or . . . private retail, office, commercial, industrial or residential development," to improve tax revenue, or for the purpose of transferring a business entity.[157] While the Legislature narrowed the scope of the State's eminent domain power, it also created an exception to this limitation—permitting municipalities to use eminent domain to eliminate blight pursuant to a redevelopment or urban renewal plan.[158] While Maine's eminent domain framework is narrower than that of the federal courts, it may not, in actuality, prevent the State or local government from using eminent domain to incentivize managed retreat.[159]

3. Ecological Preservation as Public Use

While it is unclear exactly how courts would apply eminent domain in the context of rising sea levels, there is a strong case to be made for framing the preservation of coastal ecology to mitigate sea level rise impacts as a "public use." Science tells us that marsh systems need room to expand and adapt.[160] The condemnation of private property for this use, therefore, serves the public by creating an adaptable buffer zone to help protect against rising sea levels. Moreover, courts have held that preservation and acquisition of ecologically significant areas is a legitimate public use that allows state, local, and federal governments to use eminent domain power as long as the property owner receives just compensation.[161]

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155. *Id.*

156. *See* 30-A M.R.S.A. § 3101 (2020); *Kelo*, 545 U.S. at 489 ("We emphasize that nothing in our opinion precludes any State from placing further restrictions on its exercise of the takings power."). Maine was one of many states that passed legislation in the wake of *Kelo* over concerns that the Supreme Court had defined "public use" so broadly that it would result in the erosion of private property rights. *See, e.g.*, Ilya Somin, *The Limits of Backlash: Assessing the Political Response to* Kelo, 93 MINN. L. REV. 2100, 2108-14 (2009).

157. 1 M.R.S.A. § 816(1)(A)-(C) (2006).

158. 1 M.R.S.A. § 816(2) (2006); *see also* Crommett v. City of Portland, 150 Me. 217, 218-38, 107 A.2d 841, 843-53 (1954).

159. *See* Somin, *supra* note 156, at 2115-17, 2126-27 (stating that Maine's Post-*Kelo* statutory reforms are ineffective and do not actually narrow the scope of the eminent domain power).

160. *See supra* notes 62-70 and accompanying text.

161. *See, e.g.*, United States v. Union Cnty. 16.29 Acres of Land, 35 F. Supp. 2d 773, 776-77 (D. Or. 1997) (stating that "[w]etlands mitigation is a proper public use"); United States v. Eighty Acres of Land in Williamson Cnty., 26 F. Supp. 315, 320 (E.D. Ill. 1939) (stating that the condemnation of property in order to protect forestland is a public purpose because "flood control and the prevention of soil erosion are matters of public interest, national in scope . . . [as] demonstrated through disasters affecting the whole nation"); Golden Gate Bridge Highway & Transp. Dist. v. Muzzi, 83 Cal. App. 3d 707, 713 (1978) (holding that condemning private property for the purpose of protecting marshlands is a permissible means of mitigating environmental harm).

B. Eminent Domain Should Not Be Used as the Primary Tool for Managed Retreat

While there may be no legal barriers to using eminent domain, there may be significant political, social, and cultural barriers that not only make eminent domain an untenable managed retreat tool but also a potentially harmful one.

1. Eminent Domain is Politically Fraught and Economically Inefficient

Eminent domain is an unrealistic option, first and foremost, because it is a contentious political issue. While homeowners are entitled to just compensation when the government condemns property, homeowners may have subjective attachments to that property that no amount of money can compensate.[162] Furthermore, eminent domain creates "dignitary harms," or a sense of outrage and feeling of being targeted by the government that can create ripples of anxiety within a community as people wonder if the government will take their property next.[163] The intense emotional attachments to property and the likelihood of backlash mean that few, if any, government officials are likely to endorse eminent domain as a politically viable managed retreat option.[164]

Lack of political will is also closely linked to concerns over the cost of using eminent domain for managed retreat. Eminent domain would require the allocation of a significant amount of tax dollars to condemn the most at-risk properties—coastal properties in Maine are expensive.[165] Furthermore, municipalities may be concerned that condemning land will reduce the government's tax base.[166] While this may be true in the short term, concerns about a diminished tax base fail to account for the fact that moving people away from vulnerable areas will ultimately reduce the tax dollars used to mitigate flood and storm damage in the long term.[167]

2. The Fine Line Between "Public Use" and Abuse

While governments may reject eminent domain as a managed retreat option because of economic and political infeasibility, that may not be such a bad thing.

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162. *See* Janice Nadler & Shari Seidman Diamond, *Eminent Domain and the Psychology of Property Rights: Proposed Use, Subjective Attachment, and Taker Identity*, J. EMPIRICAL L. STUD., 713, 720-21 (2008).

163. *Id.* at 721-22.

164. Imperial Beach, California is a good example of how politically fraught discussions of managed retreat and eminent domain can become. A good portion of the town is located in low-lying coastal areas and is extremely at risk of rising sea levels. *See* Marty Graham, *IB Tries to Calm Fears of Eminent Domain*, SAN DIEGO READER (Nov. 16, 2018), https://www.sandiegoreader.com/news/2018/nov/16/stringers-ib-tries-calm-fears-eminent-domain/ [https://perma.cc/4R27-KW3Z].

165. The median sale price for waterfront property in Maine in 2019 was $275,000. *Maine Real Estate Report*, MAINE HOME CONNECTION, https://www.mainehomeconnection.com/MarketValues [https://perma.cc/B9PS-QX94] (last visited Nov. 10, 2020); *see also* Wanda Curtis, *Southern Maine Real Estate Market Heating Up*, ISLAND INST. (Jan. 31, 2019), http://www.islandinstitute.org/working-waterfront/southern-maine-real-estate-market-heating [https://perma.cc/E343-ZWTF] (stating that the *average* listing prices of homes in the coastal towns of South Portland, York, and Portland were $325,000, $344,000, and $425,000, respectively).

166. *See* Koslov, *supra* note 91, at 363.

167. *See id.*; *see also* McArdle, *supra* note 80, at 623-25 (explaining that while there may be concerns about lost tax revenue, limiting re-development of coastal property can avert costs through the restoration of coastal ecosystems).

Historically, eminent domain has disproportionately targeted the indigent, minority populations, and other marginalized communities.[168] Typically, eminent domain has been used to condemn property owned by minority populations in low-income areas as part of urban renewal projects that were overtly racist in their objectives.[169] These projects often benefited the wealthy at the expense of those who were displaced.[170] For example, the use of eminent domain in *Berman v. Parker* was primarily targeted at people of color, as ninety-seven percent of the people who were displaced by the redevelopment project were Black.[171] Research shows that marginalized populations bear the brunt of eminent domain because they are politically isolated and easily targeted by local governments since they do not have the resources or political capital to fight against the use of eminent domain.[172] Thus, even though "just compensation" is intended to ensure that burdens are borne equitably across the entire population,[173] governments disproportionately use eminent domain against vulnerable and minority communities.[174]

The use of eminent domain as a managed retreat tool poses the risk that economic and socially marginalized populations will be the first to bear the costs of rising sea levels. Maine is particularly unique in that along its 3,478 miles of coastline live some of Maine's wealthiest residents and some of its poorest.[175] The lack of socioeconomic uniformity of Mainers residing on the coast means that needs,

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168. *See* Kelo v. City of New London, 545 U.S. 469, 521-22 (2005) (Thomas, J., dissenting) (stating that those most likely to benefit from eminent domain are those with political power and influence while those most likely to suffer are those who have few resources); *see also* Brief of National Association for Advancement of Colored People et al. as Amici Curiae Supporting Petitioners, Kelo v. City of New London, 545 U.S. 469 (2005) (No. 04-108), 2004 WL 2811057, at *3 (arguing that eminent domain for the purposes of economic development "disproportionately harm[s] racial and ethnic minorities, the elderly, and the economically underprivileged"); Bernadette Atuahene, *Takings as a Sociolegal Concept: An Interdisciplinary Examination of Involuntary Property Loss*, 12 ANN. REV. L & SOC. SCI. 171, 177 (2016) (stating that urban renewal projects like those in *Berman v. Parker* had severe, negative economic, social, emotional, cultural, and political consequences on people who were displaced); Carol Necole Brown, *Justice Thomas's Kelo Dissent: The Perilous and Political Nature of Public Purpose* 23 GEO. MASON L. REV. 273, 275 (2016); DICK M. CARPENTER II & JOHN K. ROSS, INST. FOR JUST., VICTIMIZING THE VULNERABLE: THE DEMOGRAPHICS OF EMINENT DOMAIN ABUSE 1-2 (June 2007).

169. *See Kelo*, 545 U.S. at 522 (Thomas, J., dissenting); Poletown Neighborhood Council v. City of Detroit, 304 N.W.2d 455, 465 (Mich. 1981) (Ryan, J., dissenting); Justin B. Kamen, *A Standardless Standard: How a Misapplication of Kelo Enabled Columbia University to Benefit from Eminent Domain Abuse*, 77 BROOK. L. REV. 1217, 1221-22 (2012) (discussing the ways in which eminent domain tends to favor wealthy communities with political power).

170. *See Kelo*, 545 U.S. at 522 (Thomas, J., dissenting).

171. *See id.*

172. Catherine E. Beideman, *Eminent Domain and Environmental Justice: A New Standard of Review in Discrimination Cases*, 34 B.C. ENV'T AFF. L. REV. 273, 291 (2007).

173. *See* Armstrong v. United States, 364 U.S. 40, 49 (1960).

174. Andrea J. Boyack, *Side by Side: Revitalizing Urban Cores and Ensuring Residential Diversity*, 92 CHI.-KENT L. REV. 435, 459-60 (2017) (stating that "twentieth century urban renewal via eminent domain decimated minority communities and failed to achieve sustainable city growth"); Beideman, *supra* note 172, at 292-93, 295.

175. *See* Island Inst., *supra* note 43, at 2-3 (2020) (explaining that ten coastal communities in Southern Maine have the highest median income in Maine, while five coastal communities in Downeast Maine have the lowest median income in Maine).

political engagement, and power vary significantly.[176] This difference creates a risk of abuse if vulnerable individuals who have less political power are the first to bear the consequences of eminent domain.[177]

As a result of this risk, any managed retreat tool, but in particular, eminent domain, will require that implementation occur through an environmental justice[178] framework.[179] Doing so will ensure that all individuals have equal access to, and involvement in, the decision-making process. All members of society, not just the most politically connected, should be protected and taken into account. While there is a significant risk inherent in all managed retreat, especially eminent domain, moving people away from the coastline creates an opportunity to plan for better functioning and more sustainable communities.

3. Maine's Coastline is Not Well Suited to Eminent Domain

While eminent domain may be both politically infeasible and can lead to abuse of vulnerable populations, eminent domain also presents the unique difficulty of deciding which property the government should take and when to do so. While sea level rise is inevitable, it is not necessarily uniform across all locations.[180] Scientific projections can predict that rising sea levels will inundate a particular piece of property, but localized factors such as subsidence, runoff, and currents make it impossible to predict whether inundation will occur next year or in ten years, for example.[181] As a result, using eminent domain runs the risk that the government will condemn property—believing that it is at high risk now—when it will not likely experience any flooding for several years.

One of the primary justifications for using eminent domain is that it would reduce governmental costs of both responding to natural disasters, and rebuilding roads and bridges after-the-fact. However, this justification does not apply equally

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176. *See generally* Sunmin Kim, *Rethinking Models of Minority Political Participation: Inter- and Intra-group Variation in Political "Styles,"* 16 DU BOIS REV. 489 (2019) (discussing the relationship between socioeconomic status and political participation among different racial groups); Henry E. Brady, et al., *Beyond SES: A Resource Model of Political Participation*, 89 AM. POL. SCI. REV. 271 (1995) (analyzing the impact of time, money, and civic skills on political participation). Additionally, it is commonly recognized in Maine that many wealthy coastal residents are not economically tied to living on the coast, compared to poorer coastal communities whose livelihoods may be based in the fishing or lobstering industry.

177. CARPENTER & ROSS, *supra* note 168, at 7.

178. "Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies." EPA, *Environmental Justice*, https://www.epa.gov/environmentaljustice [https://perma.cc/AL2M-GLQY] (last visited Oct. 29, 2020). While environmental justice has in the past primarily focused on the concentration of environmental hazards near low-income and vulnerable populations, it is nonetheless applicable in the context of eminent domain, which shares many similarities to exposure to environmental hazards in terms of forcing vulnerable populations to shoulder the effects of certain initiatives. *See* Beideman, *supra* note 172, at 293, 290-91. *But see* Keene, *supra* note 81, at 141-42 (discussing how "vulnerability" can be defined in ways that still exclude certain populations, even when applying a climate justice framework).

179. *See* Beideman, *supra* note 172, at 290-91 (discussing the intersection of eminent domain and environmental justice).

180. *See* IPCC Report 2019, *supra* note 11, at 55-57.

181. *See supra* notes 11-17 and accompanying text.

to all coastal property in Maine. For instance, someone living on an island in the Gulf of Maine who is completely off-the-grid and relies on a septic system, a well, and solar panels may be very vulnerable, but does not require the same governmental resources and infrastructure. In this situation, the justification for using eminent domain to reduce government expenditures when responding to an emergency and fixing infrastructure is not as strong. As a result, there is not always a match between the most vulnerable areas and the governmental upkeep of vital infrastructure, further complicating the process of choosing which properties to condemn. Ultimately, eminent domain should only be used on a selective basis rather than as a primary, widespread means of facilitating retreat.

4. Compensation Based on Fair Market Value of Property is Harmful in the Climate Change Context

Finally, one of the primary concerns with eminent domain is that the government *always* has to pay just compensation for the property that has been taken, based on fair market value of the property. Under a compensation scheme that is based on fair market value, the rich receive enormously high compensation, while the poor receive little in comparison.[182] Eminent domain, therefore, perpetuates the same extreme wealth differentials that presently exist. Furthermore, when property is taken by eminent domain just compensation is given to the *property owner*. If the owner has rented the property, the tenant receives nothing in the way of just compensation, even though she is losing her home.[183]

In comparison, other managed retreat tools that do not mandate just compensation avoid this fair market value problem. If the government does not have to pay just compensation under the Takings Clause, the government could develop a compensation scheme that is more appropriate for the unique impacts of rising sea levels and the large number of people who will need to move. Eminent domain therefore entrenches, and potentially worsens, our current status quo. As such, other techniques are better suited to more equitably facilitate managed retreat than eminent domain.

IV. MANAGED RETREAT #2: REBUILDING RESTRICTIONS

An alternative tool that encourages managed retreat, but also avoids many of the concerns raised by eminent domain, are rebuilding restrictions. A rebuilding

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182. *See* David Spohr, *Florida's Takings Law: A Bark Worse Than Its Bite*, 16 VA. ENV'T L. J. 313, 324 (1997) (stating that opponents of state takings statutes oppose them on the grounds that they serve only to put money in the hands of wealthy property owners).

183. *E.g.*, Nicole Stelle Garnett, *The Neglected Political Economy of Eminent Domain*, 105 MICH. L. REV. 101, 106-07 (2006) (explaining that many tenants will not receive just compensation because condemnation terminates the tenant's lease, which means that the tenant no longer has a protected property interest); Victor P. Goldberg et al., *Bargaining in the Shadow of Eminent Domain: Valuing and Apportioning Condemnation Awards Between Landlord and Tenant*, 34 UCLA L. REV. 1083 (1987) (exploring whether the landlord or tenant, or both, receive compensation based on their respective protected property interests); Frank I. Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law*, 80 HARV. L. REV. 1165, 1254-55 (1967) (stating that unless property belonging to the tenant is destroyed, "tenants are not constitutionally entitled to . . . compensat[ion]").

restriction often takes the form of conditional construction whereby an owner may only rebuild contingent on meeting setback requirements or limitations on the number of times a structure can be rebuilt. [184] This section focuses on the legal consequences of an ordinance that prevents a property owner from rebuilding property destroyed by rising sea levels when it is not compliant with setback requirements. [185]

A. Effectiveness of Rebuilding Restrictions as a Tool for Managed Retreat

Rebuilding restrictions are a useful managed retreat tool for several reasons. First, rebuilding restrictions facilitate managed retreat by requiring property owners to migrate further inland, out of high-risk areas, if they wish to rebuild destroyed or damaged structures.[186] Second, and perhaps most importantly, rebuilding restrictions phase out structures that have been grandfathered in as lawful preexisting nonconforming uses, but which do not meet the existing setback requirements. [187] The continuation of these nonconforming uses is a substantial barrier to transitioning communities away from high-risk coastal areas.[188] Rebuilding restrictions therefore place limits on the number of times a property owner can repeatedly and indefinitely rebuild, effectively amortizing the nonconforming use. While eliminating a lawful preexisting nonconforming use raises constitutional questions, the Law Court has explicitly acknowledged that abolishing nonconforming uses is not a *per se* taking, and should, in fact, be encouraged in the interest of public policy.[189]

In addition to gradually eliminating nonconforming uses, managed retreat also reduces the economic burden on the government and tax base by limiting the number of times that the public infrastructure required to access coastal areas needs to be repaired.[190] Without a rebuilding restriction or other way of limiting the

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184. SIDERS, *supra* note 91, at 85.

185. The Mandatory Shoreline Zoning Act requires that all municipalities adopt a shoreline ordinance, which, among other things, mandates minimum structure setbacks. 38 M.R.S.A § 438-A(1) (2013).

186. *Id.* Rebuilding restrictions also help mitigate long-term health consequences caused by continuing to live in once-flooded structures that exposes people to mold growth, causing respiratory issues. *See* Manuel, *supra* note 47, at A152, A157. Rebuilding restrictions also curb the high cost of owners continually rebuilding their property. *See* Beth Daley, *Houses Wrecked Repeatedly by Sea Rebuilt with Taxes*, BOS. GLOBE (Mar. 9, 2014, 5:00 AM), https://www.bostonglobe.com/lifestyle /health-wellness/2014/03/09/sea-level-rose-government-paid-nine-flood-claims-scituate-home /P9PvgncnRm3pjdQYt8mxuK/story.html [https://perma.cc/5P3C-ZFFU].

187. SIDERS, *supra* note 91, at 86.

188. *Id.*

189. *See* Gagne v. Lewiston, 281 A.2d 579, 581 (Me. 1971) ("The spirit of the zoning ordinances and regulations is to restrict rather than to increase any nonconforming uses, and to secure their gradual elimination. Accordingly, provisions of a zoning regulation for the continuation of such uses should be strictly construed, and provisions limiting nonconforming uses should be liberally construed. The right to continue a nonconforming use is not a perpetual easement to make a use of one's property detrimental to his neighbors and forbidden to them, and nonconforming uses will not be permitted to multiply when they are harmful or improper . . . . Nonconforming uses are a thorn in the side of proper zoning and should not be perpetuated any longer than necessary. The policy of zoning is to *abolish* nonconforming uses as speedily as justice will permit." (emphasis added) (quoting Inhabitants of Windham v. Sprague, 219 A.2d 548, 552-53 (Me. 1966))).

190. SIDERS, *supra* note 91, at 85.

grandfathering in of nonconforming uses, mandatory setback requirements become ineffective.[191]

The Phippsburg, Maine, Shoreline Zoning Ordinance provides a perfect example of why rebuilding restrictions are necessary. Under the ordinance, all new structures must be set back at least seventy-five feet from the high-water line.[192] However, the ordinance allows the continued nonconformity of structures that existed prior to the ordinance going into effect.[193] The ordinance further provides that if a nonconforming structure is "damaged or destroyed by 50% or less of the market value . . . [the structure] may be reconstructed in place if a permit is obtained . . . within eighteen (18) months of such damage [or] destruction."[194] If the structure is damaged by more than 50% or destroyed, the nonconforming structure can be reconstructed "to the greatest practical extent [as determined by] the Planning Board."[195]

Thus, a severely damaged nonconforming structure in a high-risk area can be rebuilt in a nonconforming state (with the Planning Board's approval) as long as the reconstruction or replacement does not *increase* its non-conformity.[196] Thus, the current ordinance allows severely damaged buildings to continuously be rebuilt in high risk areas with few limitations.[197] Furthermore, where the ordinance does place limits on rebuilding nonconforming structures, the discretion of the Planning Board creates an avenue for bypassing these existing restrictions. Rebuilding restrictions seek to address these weaknesses by ensuring that nonconformity does not continue indefinitely in the face of rising sea levels and that, when buildings are destroyed or damaged, property owners are not allowed to rebuild in the same location.

1. Rebuilding Restrictions Do Not Pose the Same Risks as Eminent Domain

While any managed retreat tool currently is, and likely will continue to be, a controversial topic,[198] rebuilding restrictions do not pose the same economic threats as eminent domain. Under eminent domain, the taking of property *always* requires just compensation. In contrast, rebuilding restrictions are analyzed on a case by case basis, and may or may not require compensation depending on whether a property owner brings suit, the unique attributes of the particular piece of property, and how a court evaluates this type of claim.[199]

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191. *See* Christopher Serkin, *Existing Uses and the Limits of Land Use Regulations.*, 84 N.Y.U. L. REV. 1222, 1283 (2009) (discussing how lawful preexisting nonconforming uses can create perverse incentives to overinvest in certain areas).

192. PHIPPSBURG, ME., SHORELAND ZONING ORDINANCE § 15(B) (2012).

193. *Id.* § 12(A).

194. *Id.* § 12(C)(3).

195. *Id.*

196. *Id.*

197. While a building damaged by more than fifty percent still has to go through the local planning board, this is not necessarily a strong enough gate keeping mechanism, since the decision is left to the whims of the planning board that may be comprised of lay persons who do not have a comprehensive understanding of sea level rise, or, perhaps, do not believe in climate change.

198. *See* Christopher Flavelle, *Trump Administration Presses Cities to Evict Homeowners from Flood Zones*, N.Y. TIMES (Mar. 11, 2020), https://www.nytimes.com/2020/03/11/climate/government-land-eviction-floods.html[https://perma.cc/MFJ6-F253].

199. *See infra* Part IV(B)(2).

Furthermore, unlike eminent domain, where the government must decide which property to condemn, the government is not required to make the same determination with a rebuilding restriction. Instead, nature effectively determines which property the rebuilding restriction applies to and when depending on how sea level rise and extreme sea level events progress in a particular area.[200] Finally, because the government is not required to determine which property the regulation applies to, there is a decreased risk that the government will unfairly target vulnerable populations through managed retreat.[201]

However, the flipside of rebuilding restrictions is that some damage and destruction (and potential loss of life) must occur before this managed retreat tool can be utilized. Thus, rebuilding restrictions are not an entirely preventive managed retreat tool. However, the hope is that if a homebuyer is aware that they will be restricted from rebuilding if their property is harmed, they will consider that in the purchase, construction, or reconstruction of a house.

B. Regulatory Takings Challenges to Rebuilding Restrictions

Rebuilding restrictions are likely to be challenged as regulatory takings.[202] In evaluating whether a rebuilding restriction is a regulatory taking, state and federal courts will apply a series of regulatory takings tests to identify whether the regulation is functionally equivalent to physical condemnation, such that just compensation is required.[203] In determining whether a rebuilding restriction is a regulatory taking, courts will look to the *per se* rule from *Lucas v. South Carolina Coastal Council*, or perform an ad hoc inquiry under *Penn Central Transportation Co. v. City of New York*.[204]

1. The Lucas/Seven Islands *Standard: A Per Se Analysis*

A property owner is likely to argue that a rebuilding restriction falls under the *per se* rule of *Lucas v. South Carolina Coastal Council*.[205] If the court invokes this rule, there is no balancing required—just compensation is automatic.[206]

In 1986, Lucas purchased two residential lots with the intention of constructing single-family homes.[207] Two years after the purchase, South Carolina enacted the

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200. *See* Wolf, *supra* note 95, at 185 (stating that in defending taking claims, it is important to "[c]larify[] that the Fifth Amendment applies to government takings not takings by the forces of nature").

201. This is not to say that rebuilding restrictions are free from bias, it is merely to say that when a group of people is responsible for determining who gets to keep their property and who must give it up, implicit—or sometimes explicit—bias is more likely to creep its way in to the decision-making process.

202. *See* Wolf, *supra* note 95, at 189. A property owner may also challenge an ordinance prohibiting rebuilding on the grounds that it is arbitrary and capricious, or that the municipality does not have the authority to enforce this type of restriction. *See, e.g.*, Lindstrom v. Cal. Coastal Comm'n., 252 Cal. Rptr.3d 817, 844 (Cal. Ct. App. 2019).

203. *See id.* at 161.

204. *See* Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1015 (1992); *Penn Cent. Transp. Co.*, 438 U.S. at 124.

205. *See* Carole Necole Brown & Dwight H. Merriam, *On the Twenty-Fifth Anniversary of Lucas: Making or Breaking the Takings Claim*, 102 IOWA L. REV. 1847, 1859-60 (2017).

206. *See Lucas*, 505 U.S. at 1019.

207. *Id.* at 1007.

Beachfront Management Act, which prevented any new construction or rebuilding within a fixed coastal area based on specific identified points of erosion.[208] The Act did not create any exceptions.[209] The trial court made two critical factual findings: (1) that the Coastal Management Act rendered Lucas's property "valueless;" and (2) that the Act was a legitimate exercise of the state's police power intended to protect a vital public resource.[210] In response to the facts before it, the Supreme Court ultimately created a new *per se* rule that if a government regulation completely wipes out all economic value in an owner's property, the government is required to provide the property owner with just compensation.[211] However, in his majority opinion, Justice Scalia also carved out several exceptions to the *Lucas per se* rule. If the behavior prohibited by the regulation would have been prohibited under state nuisance law or "background principles" of property law, the property owner is not entitled to just compensation.[212] However, the exceptions delineated by the Court blur the *per se* rule and create a substantial amount of grey area within which to examine regulatory takings.[213]

Maine's current takings standard, as outlined in *Seven Island Land Co.*, requires the state or local government to pay just compensation when the regulation "would render the property substantially useless."[214] The standard thus mirrors the Supreme Court's rule from *Lucas*[215] and requires the court to engage in the same analysis. In the context of rebuilding restrictions, the central regulatory takings issue arising under *Lucas/Seven Islands* is whether a rebuilding restriction would render property completely valueless, such that just compensation is automatically required.

a. Rebuilding Restrictions Are Not Per Se Takings Under the Lucas/Seven Islands *Standard*

At first blush, *Lucas/Seven Islands* appears exactly on point. If the Supreme Court held that the rebuilding restriction imposed by the Beachfront Management Act in *Lucas* was a *per se* taking then, logically, any other rebuilding restriction would similarly have the same outcome. However, a deep dive into the decision

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208. *Id.*

209. *Id.* at 1009.

210. *Id.* at 1009, 1022.

211. *Id.* at 1027. If the value of the property has not been completely wiped out, even if the value is diminished by ninety-five percent, the property owner cannot recover under *Lucas*. However, the property owner may be able to recover under the ad hoc balancing test put forth by the Supreme Court in *Penn Central Transportation Co. v. City of New York. See* 438 U.S. 104, 124 (1978) (stating that the court must consider "[t]he economic impact of the regulation on the claimant and . . . the extent to which the regulation has interfered with distinct investment-backed expectations" in determining whether there has been a taking, as well as the character of the government action).

212. *Id.* at 1029; *see also* Brown & Merriam, *supra* note 205, at 1858-59 (providing an overview and analysis of the *Lucas* exceptions).

213. Brown & Merriam, *supra* note 205, at 1854-62 (discussing the ambiguities inherent in the *Lucas* opinion).

214. *See* Seven Islands Land Co. v. Me. Land Use Regul. Comm'n, 450 A.2d 475, 482 (Me. 1982).

215. Even though *Lucas* was decided after *Seven Islands*, the Law Court has treated these two takings tests as being interchangeable. *See* MC Assocs. v. Town of Cape Elizabeth, 2001 ME 89, ¶ 11, 773 A.2d 439 (2001) (citing to *Lucas*, with approval, in explaining the *Seven Islands* takings standard); *see also* Madden v. Inhabitants of Frankfort, No. AP2012001, 2012 WL 9189533, at *6 (Me. Super. Ct. Sept. 26, 2012).

shows that *Lucas* creates murky precedent at best and does not create a clear-cut answer to this question.

In reaching its holding, the Supreme Court relied on one crucial finding from the trial court: the regulation rendered Lucas's land valueless.[216] By relying upon this factual finding, the Supreme Court did not engage in an analysis of whether the regulation did, in fact, reduce the economic value of Lucas's property to zero, nor did it provide guidance on how lower courts should consider this issue moving forward.[217] As a result, the Supreme Court left open the question of how to analyze whether the land is "valueless," although scholars agree that rendering property completely valueless is difficult.[218]

In Maine, several state cases at both the trial and appellate court levels have clearly articulated that coastal property still has economic value, even if the property owner is prohibited from building on the property.[219] Prior to the Supreme Court's holding in *Lucas*, the Maine Law Court considered, in *Hall v. Board of Environmental Protection*, whether the Maine Board of Environmental Protection (BEP) committed a regulatory taking when it denied a building permit under Maine's "Sand Dune Law."[220] The Halls purchased a beach lot, which included a house, for $30,000.[221] Six years later, the Halls lost their home as a result of beach erosion.[222] After purchasing the neighboring property for $200, the Halls decided to construct a new residential structure on the double lot.[223] However, the BEP denied a "sand dune permit," which prevented the Halls from building a new structure.[224]

The Halls appealed the administrative decision to the superior court, which determined that the Halls met their burden of proving that the BEP's denial of the permit "render[ed] their property substantially useless."[225] As a result, the superior court held that the denial of the permit constituted a taking.[226] The superior court's decision was based on two primary findings. First, the court reasoned that there was

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216. *See Lucas*, 505 U.S. at 1007, 1030-31.

217. *Id.* at 1016 n.7.

218. *See* Richard J. Lazarus, *Putting the Correct "Spin" on* Lucas, 45 STAN. L. REV. 1411, 1427 (1993) ("[B]ecause environmental protection law almost never result in total economic deprivation, that categorical presumption will rarely apply."); Brown & Merriam, *supra* note 205, at 1849-50 (reviewing more than 1,700 cases involving *Lucas* claims and finding that only 27 of these claims were successful (1.6% of all cases reviewed)).

219. Other jurisdictions treat coastal property similarly. *See, e.g.*, Lindstrom v. Cal. Coastal Comm'n, 252 Cal. Rptr. 3d 817, 843-44 (Cal. Ct. App. 2019) (stating that the plaintiffs were not denied all beneficial use of the property because they still *owned* the property and that the structure vulnerable to bluff erosion could always be reconstructed in a different part of the lot); Sea Cabins on the Ocean IV Homeowners Ass'n v. City of N. Myrtle, 523 S.E.2d 193, 204 (S.C. Ct. App. 1999) (holding that the destruction of a shared pier was not a taking because the pier was only one component of each property owner's lot, which, therefore, meant that the lots retained economic value).

220. Hall v. Bd. of Env't Prot., 528 A.2d 453, 454 (Me. 1987). While *Hall* was decided before *Lucas*, Justice Blackmun cited to *Hall* in his dissenting opinion in *Lucas*, using it as an example of how state courts consistently reason that land still has economic value even when a property owner is prevented from building. *Lucas*, 505 U.S. at 1044 (Blackmun, J., dissenting).

221. *Hall*, 528 A.2d at 454.

222. *Id.*

223. *Id.*

224. *Id.*

225. *Id.* at 455.

226. *Id.*

no remaining beneficial use of the property available to the Halls without being able to build a year-round permanent structure.[227] Second, the denial of the permit decreased the value of the Halls' property from $50,000 to $500, which the court considered to be approximately a 100% reduction in value.[228]

The Law Court reversed the superior court's decision, holding that the "beneficial and valuable uses of [the] property remaine[d] available to the Halls despite the denial of a building permit by the BEP."[229] The Law Court reversed the lower court's holding on two primary grounds. First, even without the building permit, the property still had 150 feet of beach, water access, sewer, and electric services, so the property could still be used.[230] Importantly, the record stated that the denial of the permit still allowed the Halls to place a temporary structure, such as a camper, on the property, which meant that the property still had economic value.[231] Second, the property adjacent to the Halls had been sold for a high price, suggesting that the Halls would still be able to sell their property for a large sum should they choose to do so.[232]

A little over a decade after the Law Court decided *Hall*, the Law Court similarly held in *Wyer* that the denial of a variance that reduced a lot's assessed value from $106,000 to $2,600[233] was not a taking.[234] Even though the owner could not build on the property, the Law Court held that "[b]ecause of the property's close proximity to Higgins Beach in Scarborough, the [lower] court properly considered the uses of the property for parking, picnics, barbecues, and other recreational uses."[235]

Similarly, in *Fichter* the superior court held that a 93% reduction in the value of a lot from $375,000 to $25,000 was not a *per se* taking under *Lucas/Seven Islands* because (1) the property still had a value of $25,000; (2) the property had recreational value and could be used for camping, swimming, picnicking, and sunbathing; and (3) the owners still had access to a private beach, which would mean they would not have to go to a public one.[236] While the public had a right to use the intertidal zone for fishing, fowling, and navigation, the property was not valueless because the property owners could engage in alternative activities in the intertidal zone beyond those permitted under the public trust doctrine.[237]

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227. *Id.*
228. *Id.*
229. *Id.* at 456.
230. *Id.* at 455.
231. *Id.*
232. *Id.* at 456.
233. Wyer v. Bd. of Env't Prot., No. CV-92-1091, 1998 Me. Super LEXIS 96, at *9 (Apr. 14, 1998).
234. Wyer v. Bd. of Env't Prot., 2000 ME 455, ¶ 1, 747 A.2d 192.
235. *Id.*; *see also Wyer*, 1998 Me. Super LEXIS 96, at *9. The lower court also considered that using the land for access to the beach, picnicking, camping, and sunbathing were all beneficial recreational uses that prevented the land from being valueless. *Wyer*, 1998 Me. Super LEXIS 96, at *9. Additionally, the property owners still possessed the right to exclude others from the property, even though they could not build a permanent structure. *Id.*
236. Fichter v. Me. Bd. of Env't Prot., No. CV-90-624, 1997 Me. Super. LEXIS 13, at *12 (Jan. 9, 1997).
237. *See id.*; *see also* Bell v. Town of Wells, 557 A.2d 168, 180 (Me. 1989) (stating that the public trust doctrine in Maine only allows access to intertidal zones for fishing, fowling, and navigation. Access to this land for other recreational activities, such as sunbathing, requires the government to pay just compensation).

Although it may be difficult for a plaintiff to argue a *Lucas/Seven Islands* taking under the best of circumstances, *Hall*, *Wyer*, and *Fichter* suggest that that fight may be even more difficult in a Maine court. These cases acknowledge that Maine courts prize coastal property beyond the ability to build a structure. The right to beach access, camping, sunbathing, and the ability to invite or restrict others from doing so, is still highly valued. Anyone who has been to a Maine beach knows that access to a swath of quiet, private sand is a rare commodity. Maine courts also recognize that even if a property owner feels as though the property has lost all economic value, others may not agree. A neighboring property owner may be willing to purchase the property for beach access, to increase the size of their lot, or as a buffer.[238]

In a state with so much coastline, it is highly unlikely that a Maine court would choose to take a legal position that devalues alternate uses of coastal property that are typically highly valued.[239] Because both the trial and appellate courts in Maine have demonstrated a willingness to find alternative uses for property besides residential use, it is unlikely that a court would hold that a regulation has wiped out all economic value in the coastal property. Thus, a rebuilding restriction is not likely to be a *per se* regulatory taking under *Lucas/Seven Islands*.

2. Penn. Central*: Applying the Ad Hoc Approach to Rebuilding Restrictions*

As Justice Scalia notes in his majority opinion in *Lucas*, if a property owner is unsuccessful in persuading the court that the categorical rule from *Lucas* applies, she is left to argue her case under the ad hoc balancing test from *Penn Central Transportation Co. v. City of New York*.[240] Although never analyzed extensively, Maine courts have cited to the *Penn Central* framework in evaluating whether there has been a regulatory taking.[241]

Penn Central concerned the validity of a New York City landmark law that restricted the construction of office space above Grand Central Terminal, which had

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238. *See* Barth v. City of Peabody, No. 15-13794-MBB, 2018 WL 1567606, at *16 (D. Mass. Mar. 30, 2018) (stating that a neighbor offering the plaintiff $1,000 to purchase the non-buildable property was evidence demonstrating that the property had not lost all economic value). *But see* Lost Tree Vill. Corp. v. United States, 787 F.3d 1111, 1117 (Fed. Cir. 2015) ("[W]e disagree that all sales qualify as economic uses. When there are no underlying economic uses, it is unreasonable to define land *use* as including the sale of land. Typical economic uses enable a landowner to derive benefits from land ownership rather than requiring a landowner to sell the affected parcel.").

239. However, this raises the question of whether alternative uses such as camping, sunbathing, and beach access is "residual value" that only functions as a "token interest." *See* Palazzolo v. Rhode Island, 533 U.S. 606, 616 (2001) ("State[s] may not evade the duty to compensate on the premise that the landowner is left with a token interest.").

240. *See* Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1019 n.8 (stating that a ninety-five percent decrease in property value is not a complete wipeout of all economic value. The property owner must, therefore, argue her case under *Penn Central* rather than *Lucas*); *see also Wyer*, 1998 Me. Super LEXIS 96, at *13 (Apr. 14, 1998) ("If [plaintiff] fails to show that he has been deprived of all economic value in his property, this court will apply the full pre-*Lucas* test as established in *Penn Central*."); *Fichter*, 1997 Me. Super. LEXIS 13, at *13 (Jan. 9, 1997).

241. *See, e.g.*, MC Assocs. v. Town of Cape Elizabeth, 2001 ME 89, ¶¶ 5-6, 773 A.2d 439; Macquinn v. Town of Lamoine, No. BCD-CV-2017-05, 2018 Me. Bus. & Consumer LEXIS 3, at *6-15 (Feb. 13, 2018); *Fichter*, 1997 Me. Super. LEXIS 13, at *13-18; AIU Ins. v. Superintendent, No. CV-89-963, 1991 Me. Super LEXIS 5, at *1-2.

been designated a "landmark."[242] In holding that the government had not committed a taking, the Supreme Court formulated an "ad hoc, factual"[243] test requiring the court to assess the following: (1) "the economic impact of the regulation"[244] on the property; (2) "the extent to which the regulation has interfered with distinct investment-backed expectations"[245] and; (3) the "character of the government action."[246]

In analyzing the first factor, Justice Brennan looked at the diminution in value caused by the regulation, ultimately reasoning that while the reduction in value was relevant, diminution in value alone does not work a taking.[247] Although the landmark law at issue in *Penn Central* unevenly impacted property owners, that alone was insufficient to prove a violation of the Takings Clause.[248] Concerning the second factor, the Court observed that when the property owners purchased the Terminal, they had expected to use it as a train station. [249] The landmark law did not interfere with or change this expected use; the trains would continue to run as intended.[250] Moreover, the Landmark Commission, which had prohibited the changes to the Terminal, did not outright ban *any* construction; instead, the development just had to fit within the requirements set by the Commission.[251] Finally, the Court reasoned that the restrictions imposed by the landmark law were "substantially related to the promotion of the general welfare,"[252] while also enabling the property owner to make "reasonable beneficial use of the landmark site."[253]

In applying this same three-part framework to rebuilding restrictions, courts must balance the *Penn Central* factors to determine the extent to which a rebuilding restriction is akin to a physical taking, thus requiring just compensation.

a. The Economic Impact of Rebuilding Restrictions

As discussed in Part III(B)(1)(a), a rebuilding restriction is likely to have a substantial economic impact on property owners who are restricted from either entirely rebuilding or rebuilding on part of the property. However, as *Hall*, *Wyer*, and *Fichter* demonstrate, the Law Court is likely to find other uses for the property.[254] Thus, a diminution in value is not, in and of itself, sufficient to render a taking under

242. Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 115-19 (1978).
243. *Id.* at 124.
244. *Id.*
245. *Id.*
246. *Id.*
247. *Id.* at 131. The Court also argued that because the landmark law conferred transfer development rights (TDRs) the property owners had not been denied *all* use of their property. *See id.* at 113-14, 137 ("[I]t is not literally accurate to say that [the landowners] have been denied *all* use of even those preexisting air rights. Their ability to use these rights has not been abrogated; they are made transferrable to at least eight parcels in the vicinity of the Terminal, one or two of which have been found suitable for the construction of new office buildings.").
248. *Id.* at 133-34.
249. *Id.* at 136.
250. *Id.*
251. *Id.* at 137.
252. *Id.* at 138.
253. *Id.*
254. *See supra* notes 217-40, and accompanying text.

the *Penn Central* analysis.[255]

b. Rebuilding Restrictions and Investment-Backed Expectations

The second *Penn Central* factor, interference with distinct investment-backed expectations, is likely to play a central role in whether a rebuilding restriction is a taking. However, like the first factor, interference with investment-backed expectations is not dispositive.[256] Courts and legal scholars have grappled with understanding what "distinct investment-back expectations" means in application.[257] While the Supreme Court has provided minimal guidance on how courts should analyze this factor, Justice O'Connor, in her concurring opinion in *Palazzolo v. Rhode Island*, intimated that courts should consider: (1) "the timing of the regulation's enactment relative to the acquisition of title,"[258] and (2) "the nature and extent of permitted development under the regulatory regime *vis-à-vis* the development sought by the claimant."[259] However, these factors are perhaps neither necessary nor sufficient, as investment-backed expectations depend on the facts and circumstances of the particular case.[260]

Rebuilding restrictions pose interesting questions concerning investment-backed expectations because it requires a court to assess the extent to which our growing knowledge about climate change renders our cultural conceptions of private property usage unreasonable. For example, at a literal level, a rebuilding restriction interferes with distinct investment-backed expectations where a landowner purchased the beachfront property either because the property already had a house on it, or because they intended to build one. From this perspective, a rebuilding restriction undercuts the very purpose for which the owner purchased the property. A court may be reticent to prevent use that was ongoing at the time of acquisition.[261]

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255. *Penn Cent. Transp. Co.*, 438 U.S. at 131.

256. *See* Palazzolo v. Rhode Island, 533 U.S. 606, 634 (2001) (O'Connor, J., concurring).

257. *See, e.g.*, John D. Echeverria, *Making Sense of Penn Central*, 39 ENV'T L. REP. NEWS & ANALYSIS 10471, 10475-77 (2009) (discussing ambiguities of investment-backed expectations); Marc R. Poirier, *The Virtue of Vagueness in Takings Doctrine*, 24 CARDOZO L. REV. 93, 99 (2002) (stating that distinct investment-backed expectations are too general and that the Court has provided too little guidance in its application); Daniel R. Mandelker, *Investment-Backed Expectations in Taking Law*, 27 URB. LAW. 215, 225-37 (1995) (critiquing investment-backed expectations as part of the *Penn Central* analysis); Lynda J. Oswald, *Cornering the Quark: Investment-Backed Expectations and Economically Viable Uses in Takings Analysis*, 70 WASH. L. REV. 91, 106-17 (1996) (discussing the ambiguities inherent in the investment-backed expectations framework).

258. *Palazzolo*, 533 U.S. at 633 (O'Connor, J., concurring).

259. *Id.* at 634 (O'Connor, J., concurring).

260. *Id.* at 635 (O'Connor, J., concurring) ("Courts [] must attend to those circumstances which are probative of what fairness requires in a given case."). Given the absence of concrete guidance, other courts have developed their own factors for assessing distinct investment-backed expectations. The Federal Circuit, for example, has developed the following test for determining the reasonableness of expectations: (1) "whether the plaintiff operate[s] in a highly regulated industry"; (2) "whether the plaintiff was aware of the problem that spawned the regulation at the time it purchased the allegedly taken property"; and (3) "whether the plaintiff could have reasonably anticipated the possibility of such regulation in light of the 'regulatory environment' at the time of the purchase." Appolo Fuels, Inc. v. United States, 381 F.3d 1338, 1349 (Fed. Cir. 2004).

261. *See* Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 136 (1978) (stating that there was no interference with distinct investment-backed expectations because Penn Central purchased the

However, this hardline "distinct" investment-backed expectation has since softened to "reasonable" investment-backed expectations.[262] The transition from "distinct" to "reasonable" is critical to the government withstanding a climate-change-based takings claim. The integration of reasonableness allows the courts to consider factors external to the property such as shifting social norms, developments in science, awareness of climate change, and knowledge of sea level rise. All of these factors shed light on whether it is reasonable for a property owner to expect that they can continue to use their property unencumbered by government regulations.[263]

While the integration of reasonableness is useful in recognizing that over time and across generations expected and reasonable uses of coastal property change as society progresses, there is no definite point at which a prior reasonable use of land (like building a house on the coast) suddenly becomes unreasonable (because of sea level rise). We are arguably in a transitional period where property rights are being re-defined in light of climate change and rising sea levels.[264] As such, the rules that have always applied to property owners are shifting in light of the new information and concerns about climate change.[265] With little court guidance, climate change takings exemplify the liminal space somewhere between unreasonable government action (as defined by our traditional conceptions of property law) and reasonable government action (as necessitated by the pressing social impacts of sea level rise).

However, as climate change becomes more severe and the need to address its impacts becomes more pressing, the line between a reasonable and unreasonable

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Terminal for use as a train station. Designation as a landmark did not interfere with the continued use of the Terminal as a train station). At the same time, however, the majority of landowners do not purchase coastal property solely *because* of the *house*, but because the house is in proximity to the ocean. From this perspective, a rebuilding restriction does not undercut all landowner expectations because the regulation does not preclude the continued use of the property for sunbathing, camping, and enjoying the view and proximity to the ocean.

262. *See* Kaiser Aetna v. United States, 444 U.S. 164, 175 (1979) (stating that the ad hoc factual inquiry from *Penn Central* requires that the court look at "interference with *reasonable* investment-backed expectations"); *see also* Danielle Nicholson, *Reasonable Expectations: An Unreasonable Approach to the Denominator Question in Takings Analysis*, 45 ECOLOGY L.Q. 353, 357-59 (2018) (discussing the Supreme Court's transition from "distinct" to "reasonable" investment-backed expectations); J. David Breemer, *Playing the Expectations Game: When are Investment-Backed Land Use Expectations (Un)Reasonable in State Courts?*, 38 URB. LAW. 81, 85-86 (2006).

263. *See* Breemer, *supra* note 262, at 86 (stating that the introduction of "reasonableness" into the distinct investment-backed expectations analysis "invite[s] examination of the *validity* of a claimant's expectations rather than examination of the effect of regulation in precluding distinctly planned, profitable uses of land"); *see also* Steven J. Eagle, *The Four-Factor Penn Central Regulatory Takings Test*, 118 PENN. ST. L. REV. 601, 620 (2014) (explaining that the transition from "distinct" to "reasonable" investment-backed expectations changed the analysis from a subjective one to an objective).

264. *See* Holly Doremus, *Takings and Transitions*, 19 J. LAND USE & ENV'T L. 1, 45 (2003) ("[R]egulatory transitions are inevitable over the long run, and often represent socially adaptative responses to changed circumstances or increased information."); Carol M. Rose, *Property and Expropriation: Themes and Variations in American Law*, 2000 UTAH L. REV. 1, 18-19 (2000) (stating that takings claims arise during periods of transitions where existing property expectations clash with new property concerns).

265. *See* Doremus, *supra* note 264, at 3 (stating that takings claims arise when there are new rules, not because of the new rule itself, but because the new rule is simply different than the old rule).

expectation may become more clearly defined. While there is no bright-line at which a previously reasonable expectation suddenly becomes unreasonable, what takings jurisprudence does tell us is that the transformation from reasonable to unreasonable investment-backed expectations does not occur upon the transfer of property.[266] While the Supreme Court has made clear that post-regulation acquisition of property does not *preclude* a subsequent landowner from receiving just compensation,[267] an existing regulation at the time of acquisition bears on the reasonableness of an owner's investment-backed expectations.[268]

Notice of an existing regulation is especially useful in the context of rebuilding restrictions. Because sea level rise is a gradual process, it is more likely to be subsequent landowners who will be impacted by the regulation, rather than the landowner in possession of the property at the time the regulation is enacted. Where the property is inherited—which is common on Maine's coast—subsequent generations who know they will inherit the property have notice of both the regulation and climate change impacts. Having notice substantially decreases the reasonableness of any expectation to use the land unrestricted.[269] As such, local governments should implement rebuilding restrictions sooner rather than later, to trigger notice as soon as possible.

While Justice O'Connor has stated that "a takings claim is [not] defeated simply on account of the lack of a personal financial investment by a postenactment acquirer of property, such as a donee, heir or devisee[,]"[270] this does not address the shifting of *expectations* that occurs as property is passed between generations, regardless of financial investment. As time passes, the awareness of climate change shifts, and with it, a landowner's expectation about what she reasonably believes she can do with her property.

For example, an owner who purchased property in the early 1900s could not imagine that one day her property would wash away because the seas are rising. However, her great-great-granddaughter could envision that this is not just a possibility, but an inevitability. While it may have been reasonable for a property owner in the 1900s to maintain her property free from government restrictions on rebuilding, the same cannot be true of her great-great-granddaughter. Because her great-great-granddaughter is, or should be, aware of sea level rise and is attuned to other governmental interventions to mitigate climate change, it would be an unreasonable expectation for her to assume that she will be able to maintain her nonconforming property in the same location it has always been, free from government regulations that are intended to protect life, limb, and property.[271]

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266. *See* Palazzolo v. Rhode Island, 533 U.S. 606, 628-30 (2001).

267. *See id.* at 628 ("A blanket rule that purchasers with notice have no compensation right when a claim becomes ripe is too blunt an instrument to accord with the duty to compensate for what is taken.").

268. *See id.* at 635 (O'Connor, J., concurring) ("Courts properly consider the effect of existing regulations under the rubric of investment-backed expectations in determining whether a compensable taking has occurred.").

269. Thomas Ruppert, *Reasonable Investment-Backed Expectations: Should Notice of Rising Seas Lead to Falling Expectations for Coastal Property Purchasers?*, 26 J. LAND USE & ENV'T L. 239, 257 (2011).

270. *Palazzolo*, 533 U.S. at 635 (O'Connor, J., concurring).

271. *See* Fichter v. Me. Bd. of Env't Prot., No. CV-90-624, 1997 Me. Super. LEXIS 13, at *15 (Jan. 9, 1997) (discussing *Avenal v. United States*, explaining that when property owners purchased oyster

However, while a property owner may be on notice of rising sea levels and could foreseeably see a time when her home can no longer be located where it is, a landowner could arguably assert that she could not have foreseen governmental intervention in this natural process.[272] In conducting a *Penn Central* analysis, the United States District Court for the Eastern District of North Carolina articulated that, while landowners were on notice that the beachfront might erode to such a degree that repair was no longer possible, "the Owners rightly expected that the Town would not attempt to accelerate that process through its unauthorized assertion of the public trust doctrine."[273] The town condemned the beachfront because it was a nuisance and was located in the public trust area after a storm damaged the property.[274]

However, it is yet to be determined whether this same logic applies to awareness of sea level rise. Coastal homeowners are not only aware of rising sea levels, but many are already experiencing the effects of harsher winter storms and increased flooding during king tides. These effects, in essence, put the property owner on notice that at some point, sea levels will rise to such a degree that the location of their home is no longer safe or practical.[275] Furthermore, the rebuilding restriction is a reasonable and effective solution to the problem. Landowners could, therefore, expect that the government would preclude building in specific locations.

c. The Character of the Taking

While interference with reasonable investment-backed expectations may tilt in favor of a property owner, the character of, and underlying rationales for, implementing the rebuilding restriction are essential to tip the balance back in favor of the government. In his majority opinion in *Penn Central*, Justice Brennan contemplated that, with respect to its character, a taking is more likely to have occurred where the property experiences something akin to a physical invasion (akin to *Loretto*),[276] rather than when the "interference arises from some public program adjusting the benefits and burdens of economic life to promote the common good."[277] What Justice Brennan suggests is that where the government can connect a regulation to the governmental police powers, a court is less likely to characterize it as a taking,

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beds they should have been aware that the government and oyster industry were beginning to address environmental concerns that had started in the 1950s).

272. While there has been a great deal of publicity about rising sea levels, we are still trying to convince climate change skeptics of its existence. *See, e.g.*, Spencer Bokat-Lindell, *So You Want to Convince a Climate Change Skeptic*, N.Y. TIMES (Jan. 2, 2020), https://www.nytimes.com/2020/01/02/opinion/climate-change-deniers.html [https://perma.cc/4RHV-8XLY].

273. *See* Sansotta v. Town of Nags Head, 97 F. Supp. 3d 713, 734 (E.D.N.C. 2014).

274. *Id.* at 718.

275. *See* Craig, *supra* note 36, at 109 ("[F]ew would grant private landowners a reasonable expectation of being able to significantly increase the risk of disease, poisoning, or catastrophic harm for the rest of the community."). While Professor Kundis's argument is compelling, in practice it raises difficult questions of causation—is it the specific landowner that *causes* the disease or harm by failing to relocate, or is it climate change that causes this harm?

276. *See generally* Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 426 (1982).

277. Penn Cent. Transp. Co. v. City of New York, 438 U.S. 104, 124 (1978). The importance of this third prong has likely decreased since the Supreme Court's holding in *Loretto*, which created a separate *per se* rule to deal with physical invasions authorized by the government. *See Loretto*, 458 U.S. at 441.

as long as it does not fall into a *per se* takings category.[278] Framing the character of the rebuilding restriction in terms of benefitting the common good requires that governments—and their lawyers—draw on well-researched, peer-reviewed studies detailing the extent of the harm the government seeks to prevent.

While a local government may choose to couch its arguments in its authority to promote the general welfare through the enactment of land use restrictions and zoning ordinances,[279] it can also use its power to protect public health and safety.[280] Outside of the takings context, courts recognize that state and local governments play a critical role in exercising their police powers to maintain public health and safety. For example, state and local governments can use their police powers to limit the spread of disease.[281] In what has become one of the most important Supreme Court cases outlining the boundaries of the police power, the Court emphasized that individual rights may be restricted where a threat to public health is present, stating:

> [T]he liberty secured by the Constitution of the United States to every person within its jurisdiction does not import an absolute right in each person to be, at all times and in all circumstances, wholly free from restraint. There are manifold restraints to which every person is necessarily subject for the common good. On any other basis organized society could not exist with safety to its members. Society based on the rule that each one is a law unto himself would soon be confronted with disorder and anarchy.[282]

Based on the deference that courts typically give to states in protecting the health of their citizens, governments would do well to emphasize the severe health consequences that they are seeking to avoid by implementing rebuilding restrictions that facilitate managed retreat.[283] Preventing people from rebuilding damaged homes would protect public health in the following ways: (1) minimizing loss of life by preventing people from living in hazardous coastal areas that are most susceptible to flooding, storm surge, and extreme sea level events; (2) decreasing respiratory problems by preventing people from moving back into homes that have been waterlogged and are susceptible to mold growth; (3) minimizing the long-term mental health impacts of homes being cyclically rebuilt and destroyed; (4) preventing exposure to communicable diseases from sewage runoff and post-flooding mosquito activity; and (5) decreasing the risk of well and aquifer

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278. *See Penn Cent. Transp. Co.*, 438 U.S. at 138 (stating that the landmark regulation was related to the promotion of the general welfare).

279. *See, e.g.*, Vill. of Euclid v. Ambler Realty Co., 272 U.S. 365, 392-97 (1926) (upholding the constitutionality of zoning laws as a legitimate exercise of the police power).

280. *See* Craig, *supra* note 36, at 109 ("[C]ourts are far more solicitous of police power arguments based on the traditional kinds of public health protections than they are of states acting purely through their land use planning powers.").

281. *See generally* Jacobson v. Massachusetts, 197 U.S. 11 (1905); *see also* City of Erie v. Pap's A.M., 529 U.S. 277, 283 (1999) ("[E]fforts to protect public health and safety are clearly within [a] city's police powers.").

282. *Jacobson*, 197 U.S. at 28. *But see* Wendy K. Mariner, Jacobson v. Massachusetts: *It's Not Your Great-Great-Grandfather's Public Health Law*, 95 AM. J. PUB. HEALTH, 581, 581-90 (2005) (arguing that the Supreme Court has become increasingly protective of individual rights in the modern era and that state laws are likely to be upheld where they have a legitimate public purpose).

283. *See* Craig, *supra* note 36, at 109.

salinization and contamination.[284]

In addition to emphasizing the public health justifications for implementing a rebuilding restriction to move people from vulnerable coastal areas, the government should also stress its role in protecting Maine's natural ecology. As this Comment has explored, Maine's wetlands, marshes, and coastlines serve as both a vital component of Maine's economy and environment. As the Law Court has stated, "[w]etlands represent[] a 'valuable natural resource of the State[]' . . . [that are] of statewide concern."[285] Thus, rebuilding restrictions help preserve Maine's natural ecology by creating new spaces for marshes and wetlands to expand into, thereby ensuring that the coastline has a natural buffer. This buffer would protect inland communities from flooding and storms, ultimately preserving public health and safety. Furthermore, moving people back from the coastline ensures that as sea levels rise—and with them, the mean highwater mark—the public still has access to coastal resources through the public trust.[286] Ensuring access to coastal areas held by the state in public trust may, in turn, preserve the coastal economy on which Maine relies.

Finally, defining a rebuilding restriction as a harm prevention measure ensures that there is some "reciprocity of advantage"[287] or "implicit in-kind compensation"[288] for the property owner. While she may not be able to rebuild her structure in the exact location, the rebuilding restriction benefits her by creating a mandatory buffer. This new buffer zone physically protects the new structure that she has constructed, and also protects the monetary investment that she made in the building. The landowner could argue that the buffer zone is the equivalent of the government building a wall and that the government is constructively possessing property and exacting a partial physical taking.[289] However, if the government wanted to build an actual sea wall, it would buy the property and do so. The government is not physically possessing this property, nor is it requiring any physical construction. As such, the buffer should be treated as a regulation. Moreover, the buffer benefits the landowner directly. While the rebuilding restriction undoubtedly creates a burden on the property owner, it also affords the property owner the same benefits that inland landowners experience.

The consequences of rising sea levels are so extreme and so undeniable that even a property owner challenging a rebuilding restriction is likely to admit that the government has a legitimate interest in protecting the health and safety of coastal property owners. Thus, it is expected that the third *Penn Central* factor will lean in favor of the government, although, as with each of these factors, it is not dispositive.

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284. *See supra* notes 71-78 and accompanying text.

285. State v. Johnson, 265 A.2d 711, 716 (Me. 1970).

286. *Cf.* Sansotta v. Town of Nags Head, 7 F. Supp. 3d 713, 717, 734 (E.D.N.C. 2014) (discussing nuisance law, the public trust doctrine, and takings law in the context of post-storm beach erosion).

287. *See* Pa. Coal Co. v. Mahon, 260 U.S. 393, 415 (1922).

288. *See generally* Brian A. Lee, *Average Reciprocity of Advantage*, BROOKLYN L. SCH. LEGAL STUD. RSCH. PAPERS, No. 410, at 2, 2-24 (May 4, 2014).

289. *See* Horne v. Dep't of Agric., 135 S. Ct. 2419, 2429-30 (2015) (holding, in the context of the National Raisin Reserve, that government appropriation of some part of an owner's property, even where the owner receives some benefit in return, is nonetheless a taking).

C. The Government Stands a Good Chance of Defeating a Takings Claim

While some coastal property has attributes that would make the property owner more likely to succeed in a takings claim, the government has a good chance of surviving a takings claim against a rebuilding restriction. Assuming that the regulation does not entirely wipe out all viable economic uses, the *Penn Central* factors provide enough flexibility for the government to justify managed retreat and rebuilding restrictions. In many ways, whether the government can withstand a takings claim depends on how the court conceptualizes private property. Whether the court defines private property in its most restrictive and protective terms, or whether the court is willing to grapple with the tensions between public benefits and private property rights laid bare by climate change, will define the outcome of any litigation. Assuming that a property owner does not succeed in bringing a takings claim, the government will not be required to pay just compensation.

V. THE ETHICS OF REBUILDING RESTRICTIONS

Between eminent domain and rebuilding restrictions, the latter is by far the better and, arguably, more ethical[290] method of managed retreat. If rebuilding restrictions are not takings under the Maine or U.S. Constitutions, the government does not have to pay just compensation according to fair market value of the property. Without having to do so, the government has the discretion to allocate funds according to need rather than property value. If the government has the discretion to distribute funds of its own accord, it can equitably allocate them according to principles of distributive justice to benefit those who are most disadvantaged.

The reality is that a rebuilding restriction is likely to have a tremendous impact on a property owner. To pretend otherwise would lead to misguided implementation and poor planning. While it may seem harsh to assert that coastal property owners will not, and should not, receive just compensation, the reality is that our current just compensation framework, as created by the Takings Clause, is not designed to address the significant changes in property law created by climate change and sea level rise. There are too many people in vulnerable coastal areas. If the government were required to pay just compensation, based on fair market value, to every property owner on the coast, the cost would be astronomical. As a result of the cost, the government will continually shy away from any action that runs the risk of a takings claim.[291]

However, by not being locked into a just compensation framework that is based

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290. Ethical in the sense that if governments are not pigeonholed into the eminent domain framework, governments have the flexibility to develop climate-change adaptation programs that are designed around equitable (not necessarily equal) resource distribution, and which take into account the impacts on historically disadvantaged and marginalized groups. This theory goes against John Rawls's principle of justice and "veil of ignorance," in which resources are distributed without knowledge or consideration of race, gender, income, class, etc., *see* JOHN RAWLS, A THEORY OF JUSTICE 136 (1971), as it recognizes that we must take into consideration the reality of our present social and political circumstances if we are to develop equitable responses to climate change.

291. *See* Spohr, *supra* note 182, at 324 (explaining that opponents of takings statutes argue that these statutes "potentially eviscerate certain government programs . . . by discouraging governments from acting against harmful uses of land").

on fair market value, the government is free to develop a new compensation scheme specifically tailored to the unique circumstances of rising sea levels and managed retreat. This new type of compensation framework should be based on genuine *need* and fundamental human rights to adequate shelter and housing.[292]

Instead of providing compensation based on fair market value, the government could instead provide everyone who will need to relocate a set stipend to offset rebuilding or relocation costs. Everyone receives the same amount regardless of the value of their property (everyone is treated *equally*). If the property is worth more than the set "stipend," any additional money that the government would have paid the property owner, had this been a taking, goes into a separate fund to provide additional financial support to those who need it (additional resources are provided *equitably*). Thus, the money that is saved by implementing rebuilding restrictions, rather than eminent domain, can go towards funding programs that help vulnerable populations relocate.

If the government does not have to pay millions to property owners (whose property in Maine may be their second or third homes), the government can reallocate that money to a social safety net compensation and relocation program. If implemented correctly, this type of social safety net program serves the dual purpose of ensuring that, as a matter of human rights, basic human needs are met, while also shaking up our current wealth inequality system.[293] By not providing the most compensation to the people who ostensibly need it the least, extreme wealth inequality in the United States, while unlikely to even out entirely, could potentially decrease. In this same vein, giving vulnerable populations assistance with relocation provides a vital opportunity to restructure our cities and communities in more equitable ways. In this respect, managed retreat is not an indication of defeat, but a

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292. *See* OFF. OF THE UNITED NATIONS HIGH COMM'R FOR HUM. RTS., FACT SHEET NO. 21, THE HUMAN RIGHT TO ADEQUATE HOUSING 3-8 (2009), https://www.un.org/ruleoflaw/files/FactSheet21en.pdf [https://perma.cc/GWS5-TPKK]; *see also* International Covenant on Economic, Social and Cultural Rights art. 11(1), Dec. 19, 1966, 993 U.N.T.S. 3; G.A. Res. 217 (III) A, Universal Declaration of Human Rights, art. 25(1) (Dec. 10, 1948).

293. *See generally* Chad Stone et al., *A Guide to Statistics on Historical Trends in Income Inequality*, CTR. ON BUDGET AND POL. PRIORITIES (Jan. 13, 2020), https://www.cbpp.org/research/poverty-and-inequality/a-guide-to-statistics-on-historical-trends-in-income-inequality [https://perma.cc/JA9N-TDVZ] (detailing that income concentration in the top 1% of the population has increased substantially since the 1970s); Juliana Menasce Horowitz et al., *Most Americans Say There Is Too Much Economic Inequality in the U.S., but Fewer Than Half Call it a Top Priority*, PEW RSCH. CTR. (Jan. 9, 2020), https://www.pewsocialtrends.org/2020/01/09/most-americans-say-there-is-too-much-economic-inequality-in-the-u-s-but-fewer-than-half-call-it-a-top-priority/ [https://perma.cc/7MR3-PKDK] ("Economic inequality, whether measured through gaps in income or wealth between richer and poorer households, continues to widen."); Pedro Nicolaci da Costa, *America's Humongous Wealth Gap is Widening Further*, FORBES (May 29, 2019, 12:10 PM), https://www.forbes.com/sites/pedrodacosta/2019/05/29/americas-humungous-wealth-gap-is-widening-further/#35f6219d42ee [https://perma.cc/2NEX-HN7U] ("In 2018, the richest 10% held 70% of the total household wealth, up from 60% in 1989."); Michael Batty et al., Michael Batty et al., *Introducing the Distributional Finance Accounts of the United States*, FIN. & ECON. DISCUSSION SERIES, DIV. OF RSCH. & STAT. & MONETARY AFFS., FED. RSRV. BD., Mar. 2019, at 26, https://www.federalreserve.gov/econres/feds/files/2019017pap.pdf [https://perma.cc/Z7DH-VGJR] ("The increase in the wealth share of the top 10% came at the expense of households in the 50th to 90th percentiles of the wealth distribution . . . whose share decreased from 36 percent to 29 percent over this period.").

unique opportunity to recreate our communities and redistribute wealth that would not otherwise be possible, were the seas not taking our coasts.

Ultimately, climate change requires that we develop a new understanding of what "just compensation" means in light of property changes that were unforeseeable when the Founding Fathers wrote the Takings Clause. The question of just compensation in this particular context raises issues of the *purpose* of just compensation. If just compensation is meant to replace the value of a home, that is very different from providing property owners with the resources necessary to move.[294] In many ways, climate change potentially shifts our understanding of what "just compensation" does, or should, mean, which in turn alters our current understanding of property. If the goal is to achieve equitable and ethical compensation, this shift is necessary. Thus, even if the government were required to use eminent domain (or if a rebuilding restriction was held a taking), courts should nonetheless reconceptualize "just compensation" as the amount of money needed to relocate, rather than fair market value of the land seized.

CONCLUSION

The fact of the matter is that our current takings jurisprudence is not equipped to address the brave new world of climate change, nor are our current responses to rising sea levels sufficient. Moving forward, local and state governments need to think strategically about how to equitably minimize risk to citizens living on the coast through the planned implementation of managed retreat. However, this also means that judges, lawyers, and the courts need to consider how takings jurisprudence that was designed pre-understanding of climate change applies in the context of current events that our framers could never have dreamed of. A strict application of current takings jurisprudence to methods of managed retreat will disincentivize necessary government action, while also failing to meet the needs of vulnerable communities who need assistance relocating. Thus, the goal should be to develop a method of managed retreat that facilitates movement away from coastal areas while simultaneously avoiding a narrow application of the Takings Clause. Through managed retreat regulations, governments can develop a climate change/sea level rise-specific compensation scheme that more accurately addresses the needs of communities as they relocate.

Tackling sea level rise is no easy task and requires coordination between all levels and branches of government. The government must proactively take steps to transition away from vulnerable coastal areas, but the courts must subsequently ensure that this is legally possible. Climate change will be devastating, and it will be more so for certain groups than others. Climate change will challenge our way of life. It will challenge our assumptions of both the role of government and the courts. To minimize the potentially devastating effects of sea level rise on vulnerable populations in the short term, the government should avoid the Takings Clause where possible. In the long run, we need to reconceptualize our views of private property

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294. *See* Brian Angelo Lee, *Emergency Takings*, 114 MICH. L. REV. 391, 401-04 (2015) (explaining that there are several different justifications for compensation: restitution or punishment, alleviating a loss not caused by any particular person or entity, compensation for an "efficient breach" of contract, and "constitutive compensation").

in such a way that allows consideration of the effects of private ownership on our communities.

Whether we like it or not, the seas are rising. The question then becomes whether we, too, will rise to meet this challenge.