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Climate Gentrification: Flooding the Cities

Rakiah Bonjour

Over 94 million Americans live in coastal counties.¹ Despite the coast’s scenic views and salty charm, more and more people are fleeing the coast as the sea engulfs their property and the cost of maintaining their ocean-view homes becomes too high.² Those who can afford to escape rising sea levels and the accompanying floods flock to high ground, pushing out those who can no longer afford to stay. This is known as “climate gentrification,” where those escaping the sea are gentrifying areas inland and causing displacement of long-term residents, usually minorities or members of impoverished communities.³

This note will discuss three types of policies commonly implemented to combat climate change and rising sea levels – protection, accommodation, and retreat policies – and will explore how they contribute to climate gentrification. It will offer solutions to balance the influx of people inland. The concept of climate gentrification has been studied in Miami and the surrounding area.⁴ This note, however, will focus on climate gentrification as a national phenomenon, and use general policy proposals to portray how those policies effect this concept.

Part II of this note gives a brief history of climate change and sea level rise, introduces climate gentrification, and how the two are related; it also introduces the governmental policies and regulations applied to combat climate change. Part III explores the three types of climate change mitigation policies, how well they work to protect property owners on the sea, and how

¹ *60 Million Live in the Path of Hurricanes*, UNITED STATES CENSUS BUREAU, <https://www.census.gov/library/stories/2018/08/coastal-county-population-rises.html> (last visited April 5, 2019).

² Jesse Keenan et al., *Climate gentrification: from theory to empiricism in Miami-Dade County, Florida*, 2018 ENVIRON. RES. LETT. 13 054001, 1.

³ *Id.*

⁴ *Id.*

those policies could affect gentrification. Part IV proposes a solution that keeps the interests of both the coastal property owners and mainland dwellers in mind. This note only aims to introduce the legal implications of the recently-introduced idea of “climate gentrification,” how to best combat those effects to prevent displacement, and how property owners on both the coasts and dry land can take note of what can happen in the near future as the law adapts to climate change. Gentrification arguments, for or against, are beyond the scope of this article.

PART II

CLIMATE CHANGE

Hurricane Michael in 2018, equipped with “unprecedented strength,” took 16 lives, destroyed hundreds of homes, erased utilities for weeks, and brought with it a toxic algae bloom in the Florida Panhandle.⁵ Michael was the first Category 4 hurricane to hit the Panhandle region, one of only four hurricanes to hit the Panhandle in the last 50 years, and the strongest hurricane to hit the continental U.S. in over 20 years.⁶ Hurricane Harvey in 2017 was nearly as destructive, if not more than Michael, accompanied by orders of evacuation and a path of destruction still being repaired to this day.⁷ Hurricanes Sandy in 2012, notorious Katrina in 2005, and Irma in 2017 also share the honor as some of the deadliest and costliest hurricanes to hit the United States.⁸ While

⁵ *Michael’s Death Toll Jumps as Crews Search for Survivors*, CBS NEWS (Oct. 12, 2018), <https://www.cbsnews.com/live-news/hurricane-michael-damage-florida-flooding-georgia-power-outage-weather-deaths-today-live-updates/>

⁶ Brandon Miller, *Michael is the Strongest Hurricane to Hit the Continental US Since Andrew*, CNN, (Oct. 11, 2018), <https://www.cnn.com/2018/10/09/weather/hurricane-michael-stats-superlatives-wxc-trnd/index.html>

⁷ *2017 Hurricane Harvey: Facts, FAQs, and How to Help*, WORLD VISION, <https://www.worldvision.org/disaster-relief-news-stories/hurricane-harvey-facts>

⁸ *Costliest U.S. tropical cyclones tables updated*, NATIONAL HURRICANE CENTER (Jan. 26, 2018), <https://www.nhc.noaa.gov/news/UpdatedCostliest.pdf>.

shocking and disturbing, these superstorms are becoming more of an expected pattern each year.⁹ Climate change researchers are watching the potential for hurricane numbers, duration, and strength rise.¹⁰ Sea surface temperature, a power source for hurricanes, is rising each year and it has been suggested that the increase in this temperature is likely correlated with the rising destructive superstorm activity.¹¹

Scientists attribute these monster hurricanes to the worsening effects of a rising global temperature.¹² Hurricane Michael's dump of a toxic algae bloom deposited a dangerous red tide phenomena which is occurring more frequently each year.¹³ Toxic algae kills massive amounts of marine life and causes respiratory illnesses in humans.¹⁴ Flooding is also a cause for concern, where storm-surges often threaten life and property as a result of additional water being pulled onto the mainland.¹⁵ Flooding events are turning more catastrophic; by 2080, 100-year flood events are expected to change to 30-year flood events, and it has even been suggested this turn may come before 2080.¹⁶ Flooding from Hurricane Sandy reached levels that occur roughly every 1000 years, but by the end of this century could occur every 20.¹⁷

Perhaps the most concerning effect, at least for purposes of this note, is the rising sea level. The sea level has risen about seven inches over the past century due to ocean expansion from

⁹ Wei Cui and Luca Caracoglia, *Exploring hurricane wind speed along US Atlantic coast in warming climate and effects on predictions of structural damage and intervention costs*, ENGINEERING STRUCTURES Volume 122, 209 (2016).

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.* at 248.

¹³ Gustaff Hallegraeff, *Ocean Climate Change, Phytoplankton Community Responses, and Harmful Algal Blooms: A Formidable Predictive Challenge*, JOURNAL OF PHYCOLOGY. 46, 220–235

¹⁴ *Michael's death toll jumps*, *supra* note 7.

¹⁵ Claire Weisz, Alan F. Blumberg, Jesse M. Keenan, *Design Meets Science in a Changing Climate: A Case for Regional Thinking to Address Urban Coastal Resilience*, SOCIAL RESEARCH VOL. 82 (Fall 2015).

¹⁶ *Id.*

¹⁷ Michael Oppenheimer, *Adapting to Climate Change: Rising Sea Levels, Limiting Risks* SOCIAL RESEARCH VOL 82, No.3 (Fall 2015).

warmer temperatures, glacier melt, and ice sheet melt.¹⁸ Three of the nine highest recorded water levels in the NY Harbor region have occurred since 2010 and eight of the largest twenty have occurred since 1990.¹⁹ As the sea level rises, coastal storms will push the sea to levels and areas it has rarely or never been in human memory, creating record high flood levels more and more frequently along the coast.²⁰ The rising sea level not only floods its surroundings: it erodes shorelines and displaces entire coastal communities.²¹ This leaves vulnerable the 94 million people who reside in coastal property in the U.S.²²

CLIMATE GENTRIFICATION

Jesse Keenan, a Harvard scholar who studies residential patterns in Miami and other coastal regions predicts that climate change will greatly influence the residential market in areas of high elevation.²³ He has coined the term “Climate Gentrification” to denote middle-to-upper-income residents leaving Miami Beach and other like-places with nuisance flooding for higher elevation, which in turn raises the price of property in those areas.²⁴

Based on his study, there are two ways in which people can be displaced around the coastal regions.²⁵ First, as population moves from coastal areas to inland urban areas, those without means can be displaced from the urban areas because the property becomes unaffordable by virtue of its resiliency.²⁶ Keenan found the rate of appreciation of a single-family property in Miami Dade

¹⁸ *Id.*

¹⁹ Weisz, *supra* note 15.

²⁰ Oppenheimer, *supra* note 17.

²¹ Robin Kundis Craig, *A Public Health Perspective on Sea-Level Rise: Starting Points for Climate Change Adaptation*, 15 WIDENER L. REV. 521, 522 (2010).

²² S. Jeffress Williams, *Sea Level Rise Implications for Coastal Regions*, JOURNAL OF COASTAL RESEARCH: SPECIAL ISSUE 63, 190 (2013).

²³ Keenan, *supra* note 2, at 2.

²⁴ Keenan, *supra* note 2, at 1.

²⁵ Keenan, *supra* note 2, at 3.

²⁶ Keenan, *supra* note 2, at 3.

County to be positively related to and correlated with incremental measures of higher elevation, thus hypothesizing that the cost of living will drastically rise as households will gradually move from the coastal barrier islands to the mainland.²⁷

The second hypothesizes that as it becomes increasingly expensive to maintain coastal property, those without means living along the coast will be displaced because it becomes unaffordable to keep up with repairs and insurance.²⁸ He states that the deterioration of environmental conditions will cause a shift in the overall cost of living, which will only be feasibly borne by wealthier and wealthier households as time goes on.²⁹ Gentrification, in this example he says, would occur inversely by the fact that vulnerable populations are unable to afford to live along the coast due to the property taxes, insurance, repairs, to even the loss of productivity due to sitting in traffic in water-logged streets.³⁰

Since the 1960s, policymakers began to seriously consider an appropriate response to climate change.³¹ These plans have focused on safety, the neighborhoods, buildings, structures, and most importantly, the residents.³² In 2008, federal and state officials urged Congress that the threat to coastal regions was irreversible and states should receive assistance from the federal government to facilitate proper solutions to cope with rising sea levels.³³ Generally speaking, there are three policy responses that local governments enact to minimize the hazards of climate change.³⁴ The policy solutions are to accommodate climate change threats through insurance or

²⁷ Keenan, *supra* note 2, at 3.

²⁸ Keenan, *supra* note 2, at 3.

²⁹ Keenan, *supra* note 2, at 3.

³⁰ Keenan, *supra* note 2, at 3.

³¹ *See, e.g.*, Clean Air Act, 42 USCS § 7401 (first enacted in 1955 and continuously revised since).

³² *Id.*

³³ Devon Applegate, *The Intersection of the Takings Clause and Rising Sea Levels: Justice O'Connor's Concurrence in Palazzolo Could Prevent Climate Change Chaos*, 43 B.C. ENVTL. AFF. L. REV. 511, 512 (2016).

³⁴ Symposium, *Post-Zoning: Alternative Forms of Public Land Use Controls: Land Use and Climate Change: Lawyers Negotiating Above Regulation*, 78 BROOKLYN L. REV. 521, 526 (2013).

building codes, to protect property with physical barriers, or to retreat from the coast.³⁵ Keenan's conclusion is that land use regulators will be tasked with evaluating the consequences of relocation and densification, particularly in higher-elevations.³⁶ He theorizes that to mitigate the influx in population and the accompanying chance of gentrification, municipalities should begin an inquiry into inclusionary zoning, the creation of affordable housing by governmental mandate.³⁷

CLIMATE CHANGE POLICIES

Accommodation policies attempt to minimize the damage to buildings from flooding, storm surges, and hurricanes.³⁸ These policies aim to decrease the damage to structures caused by flooding and storms through costly insurance policies, minimum floor elevations on newly constructed buildings, structural bracing, or building codes that comport with flood insurance policies.³⁹ These policies do exactly as their name suggests, allowing for continuous climate change abuse without trying to prevent the damage or mitigate the future risk. Protection policies defend property against the threat of sea level rise, storm surges, and floods usually through sturdy structures like levees or barriers like dunes.⁴⁰ Retreat policies aim to minimize the hazards of sea level rise by prohibiting or removing development from areas vulnerable to flooding.⁴¹ These policies will be analyzed in conjunction with Keenan's proposed solution of inclusionary zoning to understand the implication they may pose on the law. Because private property is affected in

³⁵ *Id.* See also Alice Kaswan, *Climate Adaptation and Land Use Governance: The Vertical Axis*, 39 COLUM. J. ENVTL. L. 390, 404 (2014); Alica Kaswan, *Climate Change Adaptation And Land Use: Exploring The Federal Role*, 47 J. MARSHALL L. REV. 509, 513 (2013); Jesse Reiblich, *Enabling And Limiting Conditions Of Coastal Adaptation: Local Governments, Land Uses, And Legal Challenges*, 22 OCEAN & COASTAL L.J. 156, 167 (2017).

³⁶ Keenan, *supra* note 2, at 7.

³⁷ Keenan, *supra* note 2, at 7.

³⁸ Symposium, *supra* note 34, at 526.

³⁹ Symposium, *supra* note 34, at 526.

⁴⁰ Symposium, *supra* note 34, at 526.

⁴¹ Symposium, *supra* note 34, at 526.

each of these types of policies, the Takings Clause of the Fifth Amendment will be implicated and possibly act as an impediment to the success of these policies.⁴² Furthermore, because of the complexity of these policies and the legal challenges they convey, lawmakers may end up wasting time on the hurdles they present rather than finding solutions for those on the mainland who are at risk of displacement.

PART III

ADAPTING TO CLIMATE CHANGE

TAKINGS CHALLENGES

Local governments and the federal government can regulate private property, through traditional police power, for “public use,” which the courts have interpreted to mean promoting public health, safety, welfare, or morals.⁴³ Sometimes a regulation destroys value in a way deemed to be a taking.⁴⁴ Other times, takings can occur directly through the power of eminent domain. In addition to this “public use” requirement, the government’s power to take private property is also limited by the Fifth Amendment’s “just compensation” requirement.⁴⁵ Compensation is determined by the judiciary, ensuring that the property owner would be put in the same position monetarily as he would be if his property had not been taken.⁴⁶ The Supreme Court has frequently held that the market value of property at the time of the taking is the best measure for compensation.⁴⁷

Land use regulations put in place to protect landowners from climate change will inevitably restrict private property development and will be subject to takings challenges.⁴⁸ Governments

⁴² Applegate, *supra* note 33, at 512.

⁴³ *See Kelo v. City of New London*, 268 Conn. 1, 35 (2004).

⁴⁴ *See Lucas v. South Carolina Coastal Council*, 505 US 1003, 1015 (1992).

⁴⁵ U.S. Const. amend. V.

⁴⁶ *See, infra* notes 75-85.

⁴⁷ *See United States v. Commodities Trading Corp.*, 339 U.S. 121, 123 (1950).

⁴⁸ *See Applegate, supra*, note 33; (a “regulatory taking,” *See infra* notes 87 – 118).

will also have to build barriers on private property, by taking an easement through eminent domain, also subjecting these acts to takings challenges.⁴⁹ However, Takings Clause jurisprudence “lacks both uniformity and clarity,” and judges will have to answer to landowners’ takings challenges as a result of climate change policies, ultimately becoming “chaotic.”⁵⁰

INCLUSIONARY ZONING

Kennan’s solution, inclusionary zoning, refers to a scheme that “requires developers to mitigate the adverse effects of non-residential development upon the shortage of housing either indirectly, by contributing to an affordable-housing trust fund, or directly, by actually constructing affordable housing.”⁵¹ For example, the ordinance at issue in *Holmdel Builders Ass’n v. Holmdel* allowed the developer to either build below density requirements or to contribute to a trust fund for a percentage of the purchase price of the new units.⁵² The trust fund was used for the direct benefit to the production of lower income units in a given project.⁵³ Other examples of ordinances typically allow the developer to allot a percentage of new units for lower income families or contribute to a similar trust fund.⁵⁴

The developers in *Holmdel* challenged the inclusionary ordinance, claiming the ordinance was an unconstitutional grant of statutory power and that it constituted a taking of property.⁵⁵ The *Holmdel* Court in previous years had decided *S. Burlington County NAACP v. Mt. Laurel (Mt. Laurel II)*, which had imposed an affirmative obligation on every municipality in New Jersey to

⁴⁹ *Infra* notes 75-85.

⁵⁰ Applegate, *supra*, note 33 at 512.

⁵¹ *Holmdel Builders Ass’n v. Holmdel*, 121 N.J. 550, 564 (1990).

⁵² *Id.* at 559-61.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.* at 555.

provide affordable housing.⁵⁶ In *Holmdel*, the court held that the inclusionary ordinance at issue served the purpose of providing affordable housing within a region and bore a real and substantial relationship to the regulation of land use, thereby following the *Mt. Laurel II* decision.⁵⁷ The court held there was no unconstitutional grant of statutory power because through the *Mt. Laurel II* decision and New Jersey's Fair Housing Act, each municipality had the power to enact ordinances to further affordable housing goals.⁵⁸ "The fact that defendants seek to accomplish the general-welfare goal of affordable housing by development fees rather than by mandatory set-asides does not negate a 'real and substantial relationship' of such development fees to the regulation of land."⁵⁹ As for the takings claim, the court held that as long as the ordinances were "not confiscatory and [did] not result in an inadequate return of investment," there was no injury.⁶⁰

Inclusionary zoning in theory then, takes into account the finite supply of land and ensures the opportunity and means to provide affordable housing.⁶¹ Inclusionary zoning has not proven to be as effective in practice, however. The Florida Legislature enacted the Growth Management Act (GMA), which required municipalities to take housing supply and affordability into account.⁶² Despite its intentions, the authors of the GMA admit it has resulted in more "aspirational goal-setting as opposed to realistic planning."⁶³ The goals, policies, and objectives have gone unrealized and have not been fully implemented due to a community that expresses a desire for affordable housing, establishes a comprehensive plan to achieve the goal, but then promulgates

⁵⁶ 92 N.J. 158, 219 (1983).

⁵⁷ *Holmdel*, 121 N.J. at 573.

⁵⁸ *Id.* at 582.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *See Id.*; *See also Hills Dev. Co. v. Bernards Township*, 103 N.J. 1; *Tocco v. New Jersey Council on Affordable Hous.*, 242 N.J.Super. 218, 221 (1990).

⁶² J. Michael Marshall and Mark A. Rothenberg, *An Analysis of Affordable Work Force Housing Initiatives and Their Legality in the State of Florida*, Part I, Vol. 82, No. 6, <https://www.floridabar.org/the-florida-bar-journal/an-analysis-of-affordable-work-force-housing-initiatives-and-their-legality-in-the-state-of-florida-part-i/>

⁶³ *Id.*

development regulations that cap permissible development at a density far less than the density required to achieve the plan's goals.⁶⁴

Furthermore, inclusionary zoning has been criticized for imposing “significant burdens on those who wish to develop their property.”⁶⁵ Governments vying to build new housing for low-income families do so assuming that housing needs must primarily be met with new housing.⁶⁶ However, most low-to-moderate-income housing has always been provided through “filtering,” a process by which the wealthy move into brand new homes, the moderate-income population take up older homes, and the low-income population rent or own outdated housing.⁶⁷ Revenues raised from taxing new construction could instead be spent by an inclusionary government program to assist low-income families in purchasing existing housing units.⁶⁸

All of this to say that perhaps Keenan's suggestion of implementing more inclusionary zoning policies is not the best solution to limit displacement caused by climate gentrification. As discussed below, each policy proposed to assist in climate change mitigation also presents its own legal challenges.⁶⁹ The best solution then, is to tie the inclusionary zoning into the climate change policies to introduce a new idea of transferable development rights (TDRs), which will be discussed in Part IV.⁷⁰

⁶⁴ *Id.* (No Florida statutes could be found nor case law discussing the success or failure or legality of inclusionary ordinances in Florida).

⁶⁵ *Home Builders Ass'n v. City of Napa*, 90 Cal. App. 4th 188, 194 (2001).

⁶⁶ Ellickson, Robert C., *The Irony of Inclusionary Zoning*, 54 S. CAL. L. REV. 1167, 1185 (1981).

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Infra*, notes 70 – 146.

⁷⁰ *Infra*, notes 147 – 167.

PROTECTION POLICIES

Protection policies focus on defending individual buildings and sites from flooding and shore erosion in order to combat climate change effects.⁷¹ These include building dunes, levees, floodwalls, tidal barriers or barrier islands.⁷² Local governments, and the federal government even, can take an easement from private property through eminent domain in order to build protectionist measures, discussed here.⁷³ The government may also take the entirety of a private property through eminent domain, discussed below as a form of retreat.⁷⁴

Determining “just compensation” for eminent domain purposes for a coastal property is confusing and presents an obstacle to effectively implementing protection policies. Consider a protective dune or wall on someone’s private property built by the government to save the property. How much economic value and practical use did the government usurp by stripping a family of 30 feet of beach access, or 22 feet of beach visibility? Was it possible the government added value to the home by doing so, considering this protective dune will add at least 50 years of life to the property?

This issue of just compensation arose in *Borough of Harvey Cedars v. Karan*.⁷⁵ The Borough condemned a portion of the Karan’s property to replace an existing smaller dune with a larger dune.⁷⁶ The new dune was part of a larger shore-protection project designed to protect all residents of the Borough from “the destructive fury of the ocean,” but it resulted in the Karans losing part of their view of the beach.⁷⁷ The Karans were entitled to just compensation under the

⁷¹ Applegate, *supra* note 33, at 515.

⁷² *Id.*

⁷³ Joshua Ulan Galperin, *Raisins and Resilience: Elaborating Horne’s Compensation Analysis with an Eye to Coastal Climate Change Adaptation*, 35 STAN. ENVTL. L.J. 3, 9 (2016).

⁷⁴ *See infra*, notes 121-129.

⁷⁵ 214 N.J. 384 (2013).

⁷⁶ *Id.* at 392.

⁷⁷ *Id.*

New Jersey and United States Constitutions, but the question was how to properly calculate a compensation when the Karans' property value was both lessened and enhanced by the dune.⁷⁸

Just compensation should be based on benefits that are “capable of reasonable calculation at the time of the taking.”⁷⁹ Speculative benefits should not be considered in a just compensation analysis.⁸⁰ Benefits that both sellers and buyers agree enhance the value of the property, however, should be considered in the determination.⁸¹ The court failed to define both of these terms.⁸² The Borough argued that the Karans newfound longevity and ability to stay on their property greatly increased the value of the home, while adding that the Karans' tax contribution was infinitesimal – and the court agreed and remanded the case for the jury to determine what the value of the protection was.⁸³ The court declared the fair market value of the property to be the standard in just compensation cases, but this value is ultimately a question for the jury to determine.⁸⁴ Subsequently, the Karans and the Borough settled for \$1.⁸⁵

This uncertainty in value could disadvantage littoral property owners because their expectations for the price of their property would be determined by finicky jury members. The before and after market approach likely results in little compensation, just like in *Harvey Cedars*, as the government will argue the 30 years of protection from the dune, albeit a taking, is priceless. It is likely there will be an influx of compensation challenges in the near future if governments

⁷⁸ *Id.* at 388.

⁷⁹ *Id.* at 412-13.

⁸⁰ *Id.* at 413.

⁸¹ *Id.*

⁸² *Id.*

⁸³ *Harvey Cedars*, 214 N.J. at 415-416

⁸⁴ *Id.* at 417. “We can only ensure that every person will receive just compensation, as promised by our State and Federal Constitutions. Using fair market value as the benchmark is the best method to achieve that result.”

⁸⁵ Brittany Harrison, *The Compensation Conundrum In Partial Takings Cases And The Consequences Of Borough Of Harvey Cedars*, 2015 CARDOZO L. REV. DE NOVO 31, 53 (2015).

turn to protectionist measures and take from private property in order to do the protecting.⁸⁶ However, these protectionist policies are only delaying the inevitable, because eventually the water will become impossible to hold back. Littoral property owners will eventually have to move from their coastal homes, leaving the problem of displacement to repeat itself.

RETREAT POLICIES

Retreating policies attempt to reduce the hazards created by sea level rise by restricting, prohibiting, or removing development and housing altogether from areas at risk of being destroyed by flooding.⁸⁷ These policies force populations out of their homes through either the acquisition of the entire property by eminent domain, or by prohibiting land development with land use regulations.⁸⁸ Retreating is generally deemed impossible by local governments because it is “politically unpopular and expensive,” especially when done through the purchase of already developed properties by eminent domain.⁸⁹ Although unpopular, retreating has slowly crept into city planning in urban and rural areas through zoning ordinances, and these ordinances are considered the more proactive approach of climate change policies that prevent flood disasters.⁹⁰

While some people retreat without government intervention due to high costs of maintaining their coastal property, or become disillusioned by competing with the sea, most retreat

⁸⁶ See *infra*, pp. 22-23.

⁸⁷ Applegate, *supra* note 33, at 515.

⁸⁸ Land use regulation is controlled primarily through zoning ordinances to control and direct the development of property. Zoning controls the height, use, bulk, and density of buildings. Use zones typically control if the building will be used for industry, residence, or other purposes. Height zones control limits and maximums for airspace and stories of a building. Bulk controls the lot's size, normally the lot's percentage of occupation. Density establishes population limits on the lot, by controlling how many people can occupy the space based on square feet. Cities should deny zoning ordinances which request “up-zoning,” or increasing allowable uses or developments on land near water, because these areas are at risk for flooding. “Down-zoning,” or reducing the number of allowable uses, is more appropriate for at-risk areas in recognition of the city's police power. See JULIAN CONRAD JUERGENSMEYER, ET AL., *LAND USE PLANNING AND DEVELOPMENT REGULATION LAW* 65 (4th ed. 2018).

⁸⁹ Debbie M. Chizewer and A. Dan Tarlock, *New Challenges For Urban Areas Facing Flood Risks*, 40 *FORDHAM URB. L.J.* 1739, 1756 (2013).

⁹⁰ *Id.*

occurs from direct land use regulation enacted to encourage retreat.⁹¹ Typical regulations to ward off the rising sea level would be a prohibition against residential use, or setting parcel bulk restrictions, or possibly prohibiting any further development on the property.⁹² By declining further development or residential use, the city would be exercising its police powers to protect public health, safety, and welfare, and change with the needs of the time.⁹³ Zoning regulations are generally held valid in recognition of those police powers.⁹⁴

Retreat policies may be challenged as a regulatory taking if the zoning regulations impact the property so severely that the value of the land diminishes due to an inability to use the land. In such a case, the government will have to answer to a regulatory takings challenge and might have to pay just compensation if it is found to be a taking.⁹⁵ Regulatory takings are not to be confused with eminent domain. The difference is that the government explicitly takes property by eminent domain for a specific public purpose.⁹⁶ In contrast, with regulatory takings, the government is regulating land use but does so to the point the owner has lost all beneficial use of the property.⁹⁷ A regulation is not a taking if it destroys the utility of one portion of the land, as long as the entire land as a whole remains valuable.⁹⁸

In a seminal regulatory takings challenge, *Lucas v. South Carolina Coastal Council*, a landowner paid nearly one million dollars for two residential lots on an island that was subsequently regulated by the municipality to ban any permanent habitability structures from being built.⁹⁹ Lucas contended the ban was an unconstitutional regulatory taking, even though the

⁹¹ Kaswan, *Climate Change Adaptation And Land Use: Exploring The Federal Role*, *supra* note 35, at 516.

⁹² Juergensmeyer, *supra* note 88.

⁹³ *Murphy, Inc. v. Westport*, 131 Conn. 292, 299-300 (1944).

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ *See Kelo*, 268 Conn. at 35.

⁹⁷ *See Lucas*, 505 US at 1004.

⁹⁸ *Id.*

⁹⁹ *Id.*

government did not take the land for its own use, but because it had prevented Lucas from using the land in its entirety.¹⁰⁰ South Carolina insisted the regulation was put into place to protect the land from harmful and noxious uses, which the Court had seemingly always allowed a government to do within its police powers.¹⁰¹ South Carolina argued that Lucas's development would be a nuisance in that the construction would contribute to the erosion of the island and further a public harm.¹⁰² The Supreme Court held that no matter the regulation, if a regulation deprives land of all economically beneficial use, the government may resist compensation only if the inquiry into the nature of the owner's estate shows that the proscribed uses were not part of the title to begin with.¹⁰³ That is, if the state can prove a valid nuisance ordinance or purpose that existed before the regulation prohibiting development, it will likely succeed.¹⁰⁴

The court used examples to describe regulatory takings that would not entitle a landowner to just compensation.¹⁰⁵ An owner of a lakebed denied a permit to participate in a landfill operation would not be entitled to compensation if the effect would flood others' land.¹⁰⁶ The owner of a nuclear generating plant would not be entitled to compensation if after the plant was discovered to sit on an earthquake fault, he was required to remove all improvements from the land.¹⁰⁷ Both of these regulations eliminate all economic productive use for the landowners, however, the use of these properties for the now prohibited purposes was already always unlawful, the regulations did not proscribe a productive use that was previously permissible under existing nuisance principles.¹⁰⁸

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² Lucas, 505 US at 1022

¹⁰³ *Id.* at 1010.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 1029.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ Lucas, 505 US at 1029-30.

The inquiry into nuisances entails an analysis of the degree of harm to public lands and resources; degree of harm to adjacent private properties; the social value of the claimant’s activities and their suitability to the locality in question; and the relative ease with which the alleged harm can be avoided through measures taken by the claimant and government alike.¹⁰⁹ The court remanded *Lucas*, and stated that in order for South Carolina to succeed, it must identify background principles of nuisance and property law that prohibit the uses Lucas intended in the circumstances in which the property was presently found.¹¹⁰ “Only on this showing can the State fairly claim that, in proscribing such beneficial uses, the [land use regulation] is taking nothing.”¹¹¹

Lucas may be one of few land-owner-friendly regulation cases. The question here is if regulations were enacted to protect the *landowner* against harmful or dangerous property, would they too be struck down?¹¹² If a regulation prevented a landowner from building not to protect the land as a historical site or open space, but to prevent the landowner from any physical or financial harm due to impending floods or storms, would that regulation be upheld to protect against an

¹⁰⁹ *Id.* at 1030-32

¹¹⁰ *Id.* at 1031.

¹¹¹ *Id.* at 1032.

¹¹² Additionally, if these regulations did protect the landowner from the dangers of flooding, but did not strip the land of all economic value, how would the courts rule? It is likely the courts would reject these claims brought by a landowner. For example, in Maine, a regulation restricted permits for a limited time to harvest timber on certain woodlands for the purpose of protecting wildlife. A harvesting company brought suit, claiming the regulation constituted a taking as it rendered the land “useless” and was an unreasonable exercise of Maine’s police power in violation of due process. The court rejected these claims. The harvesting company asserted that the value of the land as timberland has been destroyed, hence the value of the land for any purposes was zero; however, the court in rejecting that assertion stated there were other purposes for the land besides harvesting timber. The court held there is no place for expectations of future profits except to the extent those expectations are reflected in present market value, and because the harvesting restriction was only temporary, the land wasn’t technically useless. As for the due process claim, the court stated the requirements of due process in the exercise of police powers separated into three elements: (1) the object of the exercise must be to provide for the public welfare; (2) the legislative means employed must be appropriate to the achievement of the ends sought; and (3) the manner of exercising the power must not be unduly arbitrary or capricious. The court held the first two requirements were equally satisfied in that protecting wildlife was a valid object, and controlled cutting clearly furthered a legitimate and significant public purpose. *Seven Islands Land Co. v. Maine Land Use Regulation Com.*, 450 A.2d 475, 482-483 (1982).

existing nuisance? Or would it be struck down as in *Lucas* as stripping the landowner of the value of his property?

Courts have rejected many Fifth Amendment challenges to flood plain ordinances.¹¹³ Courts have only held regulations pertaining to flood plain zoning invalid in a few of the more than 125 appellate state and federal cases addressing floodplain regulations over the last decade, including those that challenge the regulation as a taking of private property.¹¹⁴ In *Beverly Bank v. Illinois Department of Transportation*, the court held that the Illinois legislature had the authority to prohibit the construction of new residences in the 100-year floodway and that a taking claim was premature.¹¹⁵ In *State of Wisconsin v. Outagamie County Board of Adjustment*, the court held that variance for a replacement of fishing cottage in the floodway of a river was barred by a valid zoning ordinance.¹¹⁶ A court rejected a claim that the rezoning of a 150 acre golf course from residential to strictly recreational use was a taking because the property was important for flood water storage.¹¹⁷ Land use law and flood ordinance jurisprudence suggests that the prevention of risky flood plain development, even if partially done for parental reasons, is a valid police power objective and would not withstand a takings challenge.¹¹⁸

As sea level rises, regulatory takings challenges will likely increase as local governments strive to find the best solution to protect their citizens.¹¹⁹ However, because the courts have routinely held that restricted zoning to protect citizens, or wildlife, or for preservation purposes all fall within a city's police powers, it is likely that restricting coastal living will be deemed lawful

¹¹³ Chizewer, *supra* note 89, at 1761.

¹¹⁴ Chizewer, *supra* note 89, at n. 122.

¹¹⁵ 579 N.E.2d 815 (Ill 1991).

¹¹⁶ 532 N.W.2d 147 (Wis. App. 1995).

¹¹⁷ *Bonnie Briar Syndicate, Inc. v. Town of Mamaroneck, et al*, 94 N.Y.2d 96 (NY 1999).

¹¹⁸ Chizewer, *supra* note 89, at 1760-61.

¹¹⁹ Michael Allan Wolf, *Article And Essay: The Brooding Omnipresence Of Regulatory Takings: Urban Origins And Effects*, 40 *FORDHAM URB. L.J.* 1835, 1843 (2013).

and appropriate in order to further a city's safety scheme.¹²⁰ Retreat policies, while constitutional and focus on keeping the population safe, only exacerbate the effects of climate gentrification. People would be forced out of their homes and obliged to find homes on the mainland, rushing displacement and not allowing time for any solutions to form.

As for retreat policies that would take an entire property through eminent domain, the Supreme Court has expanded eminent domain powers, by interpreting "public use" broadly, thus it is likely these would be constitutional takings.¹²¹ The Supreme Court ruled, in *Kelo v. City of New London*,¹²² that a city could take private property and redistribute it to private developers without violating the public use requirement of the Constitution's Fifth Amendment.¹²³ The Court reasoned that "public use" also meant anything could fall under the purview of "public purpose," that being economic revitalization promoted the government's interest in economic development.¹²⁴ Local governments have justified flipping the urban demographic using *Kelo*, for example New York City revitalized Harlem and Brooklyn using *Kelo*'s very principle.¹²⁵ *Kelo* has led to displacement in these instances where the original residents lost their housing to those who would be able to pay more money for the new-and-improved in the same location.¹²⁶

Retreating may seem, to coastal residents, as the most unjust form of policy.¹²⁷ Many littoral residents may not want to leave their homes due to strong ties to their communities,

¹²⁰ See *Murphy, Inc. v. Westport*, 131 Conn. at 300; *Lauridsen Family, L.P. v. Zoning Bd. of Appeals of Greenwich*, 2018 Conn. Super. LEXIS 1452, *14; *Lee County v. Morales*, 557 So. 2d 652 (1990). Also consider how the Court expanded the public use definition so easily within *Kelo*. The court could very well expand the state's police powers in the name of safety.

¹²¹ *Kelo*, 545 US 469.

¹²² *Id.*

¹²³ *Id.* at 489.

¹²⁴ *Id.* at 486.

¹²⁵ David Linhart, *Eminent Domain Conversion Of Vacant Luxury Condominiums Into Low-Income Housing*, 21 B.U. PUB. INT. L.J. 129, 138 (2011).

¹²⁶ *Id.*

¹²⁷ Kaswan, *Climate Change Adaptation And Land Use: Exploring The Federal Role*, *supra* note 35, at 514-15. ("Retreat is the most controversial response to climate impacts. Residents and local governments are loathe to relinquish settled neighborhoods.").

children, schools, and personal attachments. Moving may no longer be a choice as sea levels rise and it turns into the only option for safety¹²⁸, but forcing residents out without planning for an adjustment on the mainland only worsens the effects of climate gentrification.

ACCOMMODATION POLICIES

Americans believe that people and businesses most at risk from sea level rise should foot the bill for recovery efforts and not the general public or government.¹²⁹ Despite this belief, accommodation policies continue to aid those along the coasts. One of the most problematic accommodation policies is the National Flood Insurance Program (NFIP).¹³⁰ Enacted in 1968 as a response to the private insurance market refusing to offer flood insurance, the NFIP aimed to insure residents in the zones found on the program's flood maps, showing which areas were high risk or low risk.¹³¹ The NFIP is managed through FEMA, and participation in NFIP is not required in communities.¹³² The insurance is only available to those whose communities participate in the program by agreeing to enact certain measures to help mitigate flood risk; however, the program does not require communities to restrict or forbid building in flood-prone areas.¹³³ Flood-prone areas are found on maps drawn by FEMA.¹³⁴ The maps are not updated regularly, and as sea level

¹²⁸ Kaswan, *supra* note 35, at 514-15. ("Increasing risk exposure and the cost and fallibility of protection and accommodation measures suggest that, ultimately for some areas, retreat is the only feasible and financially affordable option.")

¹²⁹ Chizewer, *supra* note 89, at 1758.

¹³⁰ Alexander Lemann, *Trolling Back The Tide: Toward An Individual Mandate For Flood Insurance*, 26 FORDHAM ENVTL. LAW REV. 166, 182-183; H. Joseph Coughlin Jr., *With National Flood Insurance Program 'Under Water,' It's Time to Move to an All-Natural-Hazard Plan*, Environmental Due Diligence Guide, <https://www.bna.com/national-flood-insurance-n73014453161/>

¹³¹ H. Joseph Coughlin Jr., *With National Flood Insurance Program 'Under Water,' It's Time to Move to an All-Natural-Hazard Plan*, Environmental Due Diligence Guide.

¹³² Lemann, *supra* note 124 at 179.

¹³³ Lemann, *supra* note 124 at 179.

¹³⁴ Lemann, *supra* note 124 at 179.

rises and flooding occurs more frequently and regularly, the maps cannot keep up with the modern change in flood areas or predicted changes in flood-prone zones.¹³⁵

NFIP is heavily subsidized by taxpayers and \$25 billion in debt; it has been operating at a loss for over a decade.¹³⁶ Some homeowners take advantage of the program by rebuilding the same \$100,000 home over nearly two decades of recurring flood damage and superstorm beatings, using over a million dollars of the insurance's resources.¹³⁷ This ability to repeatedly rebuild storm-destroyed homes in the same storm-threatened location is "not only uneconomical and inefficient but also could significantly interfere with a local government's [climate change strategy.]"¹³⁸ Despite the interference, some local governments favor accommodation policies because compensating victims and promising for a future change is easier than encouraging people to leave.¹³⁹

Furthermore, as time continues, rates will rise in order to insure the properties repeatedly affected by climate change and the higher the rates rise, the less likely homeowners will choose to stay.¹⁴⁰ Mortgages on properties not protected by insurance on the coast are deemed unsellable.¹⁴¹ This in turn reduces the liquidity of the homes and causes higher interest rates on mortgages.¹⁴² Due to the requirement to have flood insurance; the rise in premiums seemingly every year due to

¹³⁵ Lemann, *supra* note 124 at 179.

¹³⁶ Coughlin, *supra* note 125.

¹³⁷ Coughlin, *supra* note 125.

¹³⁸ Megan M. Herzog and Sean B. Hecht, *Combatting Sea Level Rise in Southern California: How Local Governments can Seize Adaptation Opportunities While Minimizing Legal Risk*, 19 HASTINGS W.-N.W. J. ENV. L. & POL'Y 463, 507 (2013).

¹³⁹ Chizewer, *supra* note 89, at 1758.

¹⁴⁰ Shelby D. Green, *Building Resilient Communities in the Wake of Climate Change While Keeping Affordable Housing Safe From Sea Changes in Nature and Policy*, 54 Washburn L.J. 527, 527 (2015).

¹⁴¹ *Id.*

¹⁴² *Id.*

Congress's proposals; and some policies requiring mitigation, like flood proofing, the cost of homeownership on the coast becomes nearly impossible to afford, thereby favoring the wealthy.¹⁴³

Topical to this discussion would be the wildfires occurring in California in November of 2018.¹⁴⁴ These fires destroyed homes and took lives, however, homes and lives were saved among those of the richest population within Malibu and Paradise through private firefighters and access to quick getaways.¹⁴⁵ While these fires are outside the scope of this article, it is important to note that in all aspects of climate change, those who can afford to avoid the risks and protect what's theirs, do, and those who cannot afford to, lose.

HOW CLIMATE CHANGE POLICIES INFLUENCE CLIMATE GENTRIFICATION

Each of the climate change policies discussed above are short term solutions for a long-term problem. Protection policies, while a robust solution for landowners along the coast, are costly measures borne by the taxpayers. These policies could aggravate homeowners, like the Karans, and force them to flee the area into the unprepared higher elevation. Furthermore, a homeowner may have an extra 20 years added to the life of their property, but eventually the sea will engulf their property and they will be forced out. Protection policies, unaccompanied by a land use regulation or other solutions for those already living in the higher elevated areas, will only be delaying the inevitable.

¹⁴³ *Id.*

¹⁴⁴ Robert Raymond, *As California's Wildfires Raged, The Ultra-Rich Hired Private Firefighters*, HUFFINGTON POST, (Nov. 15, 2018) https://www.huffingtonpost.com/entry/california-wildfires-neoliberalism-climate-change_us_5bec0d2ce4b0caeec2c012a0

¹⁴⁵ *Id.*

Retreat policies exacerbate gentrification and displacement. Overregulating municipalities will either drive their property owners out due to frustration or force them out as soon as possible with a prohibition of use ordinance. These policies will create an influx of property owners fleeing to the mainland, possibly inundating a community with a population for which it was not intended to provide.

Accommodation policies push low-income families out of the coastal properties as rates begin to rise and living near water becomes impossible to afford.¹⁴⁶ While wealthier families will be able to bear the rising costs along the coast, an influx of low-income families will continue to strain communities on the mainland that do not have enough low-income resources already.

PART IV

THE SOLUTION

Amortization of nonconforming use, an aspect of land use regulation, allows a prior existing development with a legal use a set number of years to phase into non-use.¹⁴⁷ Amortization provisions have a presumption of validity¹⁴⁸ and the land owner must ordinarily show that the period is too short to be able to recover the money invested in the property were he to challenge the ordinance.¹⁴⁹ Amortization accompanied by a fair amount of time, is accepted as “obviating

¹⁴⁶ Additionally, regulatory takings challenges could arise in accommodation policies, if the land use regulations or other municipal ordinances mandate a specific structural requirement be added to a home or if a qualified person was required to inspect the home. In *Loretto v. Teleprompter Manhattan CATV Corp*, a law requiring landlords to allow television cable companies to place cables in apartment buildings constituted a taking. 458 U.S. 419 (1982). Regulations that compel property owners to suffer a physical invasion of their property have been routinely struck down if not accompanied by just compensation, “no matter how minute the intrusion, and no matter how weighty the public purpose behind it.” *Lucas*, 505 US at 1015.

¹⁴⁷ Jay M Zitter, Validity of provisions for amortization of nonconforming uses, 8 A.L.R. 5th 391, [2a]

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

the need for just compensation.”¹⁵⁰ To justify amortization periods, courts weigh the benefit to the public against the loss to the landowner.¹⁵¹

Cities should enact amortization periods for coastal properties, determinant on a reasonable amount of time, in order to give the property owner enjoyment of their property with notice of why they will be retreating within that reasonable amount of time. A reasonable time would be determined by the courts¹⁵², but in order to satisfy the just compensation principle, a reasonable amount of time could be proposed to be 50 years, or about the length of a generation.¹⁵³ By eliminating the coastal zone as a residential zone, the municipalities would be restricting the use of property for any reasonable purpose, and could be challenged on the Takings Clause with this kind of regulatory taking.¹⁵⁴ However, the court has concluded that the elimination of use within a reasonable amount of time does not amount to the taking of property, and municipalities would likely succeed based on nuisance principles anyway.¹⁵⁵ For consideration, the property may very well be taken by the sea within a half century anyway.

In addition to amortizing zones, cities should consider enacting a transferable development rights (TDRs) program in order to prepare higher elevated areas for the eventual population influx. TDR programs are typically implemented in historic locations or farm lands, or to protect national parks.¹⁵⁶ TDRs function by restricting development on a parcel of land that would otherwise have

¹⁵⁰ David A. Super, *From The Greenhouse To The Poorhouse: Carbon-Emissions Control And The Rules Of Legislative Joinder*, 158 U. PA. L. REV. 1093, 1117 (2010) (citing *City of Fayetteville v. S & H, Inc.*, 547 S.W.2d 94, 98 (Ark. 1977) (accepting an amortization provision as an acceptable method of eliminating nonconforming use when a city is acting pursuant to its police power)).

¹⁵¹ Zitter, *supra* note 141.

¹⁵² See 10 Zoning and Land Use Controls § 53C.08 [E] (2019).

¹⁵³ See *Id.*

¹⁵⁴ *Id.* (“Amortization has long been a controversial land use regulation technique, as owners of nonconforming uses can claim that the removal of a nonconforming use at the end of an amortization period, without compensation, is unconstitutional”).

¹⁵⁵ Nicholas R. Williams, *Coastal TDRs and Takings in a Changing Climate*, 46 URB. LAW. 139 (2014).

¹⁵⁶ *Id.*

development potential, known as the sending parcel, and allowing properties in the receiving area to exceed their zoning density through purchasing the development rights of the sending parcel.¹⁵⁷ TDRs allow the transfer of density from sites that would be identified as having a preservation status, and giving those undeveloped rights to allow for density beyond what is already built in the receiving area.¹⁵⁸

In 2008, New Jersey enacted its own TDR program, the Highlands Water Protection and Planning Act (“Highlands Act”) after the State’s legislature determined the Highlands area, which provided drinking water and farmlands to New Jersey, was being lost to development and suburban sprawl.¹⁵⁹ The Highlands Act serves to protect nearly 800,000 acres from harm by creating two areas within the region: a preservation area (sending zone) where development is strictly regulated and the development potential can be transferred, and a planning area (receiving zone), in which development is encouraged through the purchase of the sent parcels to build at a greater density than permitted.¹⁶⁰ A landowner who owned 93 acres within the preservation area challenged the Highlands Act.¹⁶¹ He claimed the legislation resulted in a taking of his property.¹⁶² The court disagreed, stating that municipalities within the Highlands area had no obligation to accept the designation as receiving zones, and property owners who had obtained TDR credits had no assurance of being offered a particular price for them.¹⁶³ Therefore, the program couldn’t be an unconstitutional taking because the Act was a voluntary, market-driven scheme that resulted in payment from property developers.¹⁶⁴

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ N.J. Stat. § 13:20-2

¹⁶⁰ *Id.*

¹⁶¹ *OFP, L.L.C. v. State*, 395 N.J. Super. 571 (2007).

¹⁶² *Id.* at 580.

¹⁶³ *Id.* at 589.

¹⁶⁴ *Id.*

In addition to TDR programs constitutionality, TDR programs are often successful, as illustrated in New York City:

A landowner who constructs a building that uses less than the entire amount of development rights available on the site, or whose site is subject to a rezoning that provides for additional density beyond what is already built, retains the use of the additional development rights. Buildings in New York City that have been designated as historic landmarks, such as churches and, famously, Grand Central Terminal, may not be permitted to alter the external appearance of their building. The owners of such buildings may, however, transfer the unused development potential of their site to adjacent or nearby parcels through a certification process. After the excess development potential has been transferred, the landowner retains title to his parcel, as well as the right to use it, provided the transferred development rights are not utilized. The owners of Grand Central Terminal can continue to operate as a train station once the building's excess development rights are sold, and agricultural land under a farmland preservation TDR program may continue to be farmed.¹⁶⁵

In a coastal context, the beachfront owner would sell their development rights, but still maintain their property under the requirement that the use would not involve any construction of new or permanent structures.¹⁶⁶

The best solution to combat displacement on the mainland from coastal expatriates is to combine an inclusionary zoning principle with climate change policies, similar to the TDR program established above. Inclusionary zoning itself is constitutional, in fact, required by some states.¹⁶⁷ Municipalities could require a tax on or percentage of an accommodation policy, like flood insurance, to be placed in a trust to assist lower income families who will be inevitably affected by the influx of people moving to the mainland. The same proposition would stand for every protection policy – a new dune or seawall – a percentage of the cost to construct would be placed in the trust. Accommodation, protection, and retreat policies each present unique challenges – no one of these policies is the perfect solution. But intertwined with a program that

¹⁶⁵ Williams, *supra* note 155, at [A].

¹⁶⁶ Williams, *supra* note 155, at [A]; *See also* Penn Cent. Transp. Co. v. New York City, 438 U.S. 104 (1978).

¹⁶⁷ Mt. Laurel, 92 N.J. at 219 (1983).

prepares for the challenges the rising sea level will bring, this solution would allow the property owner to continue living along the coast without being pushed out by retreat policies and would allow for development and inclusive programs within the mainland and urban areas to prevent displacement of underrepresented populations.

CONCLUSION

This note put forth the position that sea level rise and municipal legislation could place both coastal property owners and the urban population in a difficult situation. Climate gentrification is the process by which those who escape coastal living will gentrify areas inland and cause displacement of long-term residents. This can happen either through property on the mainland becoming unaffordable due to its high-elevated resiliency or that maintaining coastal property will become too expensive and force out those who cannot afford it into the mainland. Any of the common climate change policies that protect the coastal property owners, force them to retreat from the coast, or accommodating future living along the coast all only exacerbate climate gentrification.

This note argued that in order to protect the gentrifying areas and not harm the beachfront property owners in the process, a Transferable Development Rights program should be instated to incentivize development in the urban areas and not take property from the beachfront owners. This note also argued that an amortization period may also be a proper form of retreat for those on the coasts as flooding and sea level rise will eventually overtake their property. These solutions best protect property owners without subjecting municipalities to takings challenges.