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Erica Goldring

The Rising Storm: How New Jersey Beach Replenishment Projects And Just Compensation Are Not The Answers To The Water Management Crisis

Part I: Introduction

Property law is founded on concepts of stability, but the growth of hurricanes and flooding on New Jersey beaches make coastal residential life unstable. To remedy this growing concern, New Jersey implemented a public project to build sand dunes along the Jersey Shore. Since some beachfront property owners would not voluntarily relinquish easements, the government has “taken” land for sand dunes through its eminent domain power. This spawned litigation concerning the value of just compensation for the partial takings. In 2013, the New Jersey Supreme Court created a new standard for partial takings compensation, which now allows juries to consider not only the loss of value but also the benefits the sand dunes confer on property owners in the form of storm protection. This new standard helps prevent windfalls to property owners, but also promotes the government’s role in using structural mitigation techniques to “protect” against rising sea levels and natural disasters. Scholars such as Daniel Barnhizer and Henk Ovink argue that this is not enough: They contend that America must implement new forms of water management for true long-term protection. Instead of revising compensation equations to save the government short-term money, America must adapt to new ideas and policies of water management in the face of ever increasing climate change.

A detailed inquiry into the interconnectedness of property law, land development, and climate change is discussed in this note. Section I examines how natural disasters and resulting government initiatives uproot our basic understandings of property law. Section II explains how New Jersey’s response to recent hurricanes has created problems for coastal development and has led to tug-of-war litigation between property owners and the government. Section III discusses

how other countries are responding to inevitable rising sea levels and how America could benefit from a new perspective on coastal land use. Finally, Section IV concludes.

Part II: A Theoretical Approach to Property Rights and the Effects of Natural Disasters

Environmental transformations resulting from sudden natural phenomena effectuate changes in property law.¹ Common characteristics shared by large-scale natural upheavals include: (1) suddenness; (2) unexpectedness; (3) intense societal disruption and (4) vast geographic extension.² These factors are not all inclusive or dispositive; rather they are indicative of past examples of “radically changed circumstances.”³ One effect of natural disasters on property law concerns the relationships between property owners and shared or common resources.⁴

Since property law is founded on concepts of stability,⁵ the effects of natural disasters present a challenge by imposing conditions of upheaval and unpredictability.⁶ Often, these natural disasters occur as the result of climate change, which is inherently uncertain.⁷ Property owners may be faced with fear of losing resources that are central to a stable life.⁸

In the aftermath of a natural disaster, there are several repeat problems that property owners tend to face. First, property owners may seek to preserve or conserve a common resource.⁹ They will have to address difficult questions to determine the appropriate course of action.¹⁰ These questions often involve allocation of responsibility, ability for resource improvement, consent

¹ John A. Lovett, *Property and Radically Changed Circumstances*, 74 TENN. L. REV. 463, 470 (2007).

² *Id.* at 473.

³ *Id.* at 470.

⁴ *Id.* at 474.

⁵ Abraham Bell & Gideon Parchomovsky, *A Theory of Property*, 90 CORNELL L. REV. 531, 538 (2005).

⁶ Lovett, *supra* note 1, at 476.

⁷ See generally JARED DIAMOND, *COLLAPSE: HOW SOCIETIES CHOOSE TO FAIL OR SUCCEED* 287 (2005) (discussing how societies around the world have responded to dramatic environmental shifts).

⁸ Lovett, *supra* note 6.

⁹ Symeon C. Symeonides & Nicole Duarte Martin, *The New Law of Co-Ownership: A Kommentar*, 68 TUL. L. REV. 69, 113 (1993).

¹⁰ Lovett, *supra* note 1, at 481.

among commoners, financial reimbursement, and default property law rules.¹¹ Second, property owners must contemplate and make decisions on whether substantial physical alterations or improvements of common resources should occur due to changed environmental circumstances.¹² Last, property owners are likely to address the effects of individuals' exit and entrance from property relationships.¹³ Embedded in these questions is the state's role in facilitating functional property relationships to uphold the public welfare. More specifically, the question is raised: What is the extent of protection afforded to property regimes by federal disaster aid and disaster protection laws?¹⁴

New natural disaster laws may help property owners move from a reactive approach to a proactive one.¹⁵ In New Jersey, the devastation surrounding Superstorm Sandy in 2012 implicated a host of restrictive provisions.¹⁶ For example, when New Jersey was deemed a "state of emergency," price gouging was prohibited and mandatory overtime restrictions for healthcare personnel were lifted.¹⁷ But in the wake of the storm, New Jersey is now retrospectively regulating against future natural disaster destruction.¹⁸ Specifically, flood prevention measures not agreed to by coastal property owners have become a major public initiative backed by the State's eminent domain power.¹⁹

The taking of private property in post-hurricane recovery periods has widespread

¹¹ *Id.* at 482.

¹² *Id.*

¹³ *Id.* at 482-83.

¹⁴ Joshua F. Cheslow, *The Future of the Law Four Practice Areas on the Horizon*, NEW JERSEY LAWYER MAGAZINE, August 2013, at 35, 36.

¹⁵ *Id.* at 35.

¹⁶ *Id.*

¹⁷ *Id.* at 36.

¹⁸ *Id.*

¹⁹ *Id.*

consequences to reshaping devastated areas.²⁰ Though State condemnation power has been deemed both constitutional and useful when exercised to benefit a public use, property owners affected by natural disasters also desire a say in the policy that affects them.²¹

Part III: Beach Replenishment and Partial Takings

A. New Jersey's Waterfront Evolution

New Jersey's use of eminent domain power to carry out public beach replenishment projects after Sandy stems from the State's storm damage reduction initiative, beginning in 1999.²² Coastal municipalities, in collaboration with the New Jersey Department of Environmental Protection ("NJDEP") and the United States Army Corps Engineers designed a project to combat shoreline erosion along Long Beach Island.²³ Efforts included pumping 11 million cubic yards of sand into the area, with an additional two million cubic yards of sand every seven years for the next 50 years, and construction of sand dunes with specific height restrictions based on the locations.²⁴ In order to build the dunes, voluntary easements were needed from coastal property owners.²⁵ For many beachfront residents, this property right was not easily relinquished and caused municipalities to take legal action.²⁶

In 2009, President Barack Obama enacted the American Recovery and Reinvestment Act, which provides extensive funding for science, engineering research, and infrastructure.²⁷ Within

²⁰ Shelby C. Stone, *Two Tales of One City: Eminent Domain Post-Katrina and A Response to Kelo*, 53 LOY. L. REV. 115, 117 (2007).

²¹ Kevin Ramakrishna, *Subduing the Ceaseless Storm: Breaking the Build-Destroy-Rebuild Cycle Following Major Catastrophes Through Taxation and Responsibility*, 2 ALB. GOV'T L. REV. 328, 333 (2009).

²² Water Resources Development Act of 1999, Pub. L. No. 106-53, 106th Cong. §§ 337-39 (1999).

²³ NJDEP BUREAU OF COASTAL ENG'G, BEACH NOURISHMENT (2012).

²⁴ NJ DEP'T OF ENG'R, BARNEGAT INLET TO LITTLE EGG INLET: FINAL FEASIBILITY REPORT AND INTEGRATED FINAL ENVTL IMPACT STATEMENT A (1999).

²⁵ *Id.* at 1.

²⁶ MaryAnn Spoto, *Fight Against Emergency Beach Replenishment Causing Waves Among Shore Towns*, NJ.COM (Apr. 13, 2012, 8:04AM), http://www.nj.com/news/index.ssf/2012/04/emergency_beach_replenishment.html.

²⁷ American Recovery and Reinvestment Act of 2009, Pub L. No. 111-5, 123 Stat. 115, 516 (2009).

New Jersey's share of the Act, the state government created its own New Jersey Recovery and Reinvestment Plan, allocating \$51,259,000 worth of public funding for beach replenishment projects along the state's coastline.²⁸ Beach replenishment is a process that restores eroded shorelines, but does not prevent future erosion.²⁹ Therefore, beach replenishment projects are not a long-term solution, particularly with the threat posed by rising sea levels.³⁰ Under the New Jersey Recovery and Reinvestment Plan, however, the State took a proactive approach, mandating sand dune easements from private beachfront property owners as a condition precedent to administering public funds.³¹

Although New Jersey's plan specifies a fifty-year replenishment period, coastal property owners recognize that continuous beach maintenance will extend far into the future.³² Beach replenishment requires perpetually ongoing work to remain effective due to the natural forces of wind, water, and land.³³ As such, many attempts by State agencies to acquire private easements have been unsuccessful due to concerns about declining property values and never-ending beach construction and restoration.³⁴

In October 2012, Hurricane Sandy showed the New York Metropolitan Area the power of wind and water.³⁵ The storm peaked at one thousand miles wide and left fifty billion dollars in

²⁸ NJ RECOVERY AND REINVESTMENT PLAN, ARMY CORPS OF ENGINEERS, (2013), available at <http://www.nj.gov/recovery/infrastructure/acoef.html>.

²⁹ Don Barber, *Beach Nourishment Basics*, COASTAL GEOLOGY AT BRYN MAWR COLLEGE, available at <http://www.brynmaur.edu/geology/geomorph/beachnourishmentinfo.html>.

³⁰ Spoto, *supra* note 26.

³¹ *Id.*

³² *Id.*

³³ Jessica Vantine & Tiffany B. Zezula, *The Beach Zone: Using Local Land Use Authority to Preserve Barrier Islands*, 20 PACE ENVTL. L. REV. 299, 309 (2002).

³⁴ Lauren Wanko, *Ship Bottom Residents Reluctant to Sign Easements to Build Dunes*, NJ TODAY (Apr. 3, 2013), <http://www.njtvonline.org/njtoday/video/ship-bottom-residents-reluctant-to-sign-easements-to-build-sand-dunes/>.

³⁵ David M. Abramson & Irwin Redlener, *Hurricane Sandy: Lessons Learned, Again*, 6 DISASTER MEDICINE AND PUBLIC HEALTH PREPAREDNESS (4th ed. 2012), file:///Users/ericagoldring/Downloads/Abramson_and_Redlener_Hurricane_Sandy_Lessons_Learned_Again_DMP_HP_2012.pdf.

damages in the aftermath.³⁶ Though other areas of the United States have experienced more frequent, violent storms, the impact of Hurricane Sandy on one of the most populated areas in the country made it the second costliest Atlantic hurricane in history.³⁷ The devastating consequences of natural resource depletion, destroyed homes, and lost lives facilitated the enactment of the federal Disaster Relief Appropriations Act of 2013, which included the Sandy Recovery Improvement Act (“SRIA”).³⁸

SRIA allocated seventeen (17) billion dollars to federal agencies in immediate support to the victims and communities damaged by Hurricane Sandy.³⁹ The NJDEP, in turn, was given the responsibility of acquiring the necessary property interests to carry out federal initiatives, including sand dune easements along the beachfront.⁴⁰ For property owners that did not voluntarily provide easements, their property was to be “taken” under the authority of the Federal and New Jersey Constitutions.

B. Personal Property and Doctrinal Roots

The 5th Amendment of the Federal Constitution states, “no person shall be...deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.”⁴¹ Further, the New Jersey Constitution, the controlling authority of the state, also provide that, “private property shall not be taken for public use without just compensation. Individuals or private corporations shall not be authorized to take private property for public use without just compensation first made to the owners.”⁴² The Eminent Domain Act

³⁶ *Id.*

³⁷ Shaddick Enders & Brandi Kalena, *Sand Politics: Coastal Dunes against Property Rights in Post-Superstorm Sandy New Jersey*, SETON HALL LAW EREPOSITORY (2014), http://scholarship.shu.edu/student_scholarship/569.

³⁸ Disaster Appropriations Act, H.R. 152, 113th Cong. (2013).

³⁹ *Id.*

⁴⁰ *Margate City v. U.S. Army Corps of Engineers*, No. 1:14-cv-07303 (D.N.J. filed Nov. 24, 2014).

⁴¹ U.S. Const. amend. V, §2.

⁴² N.J.S.A. Const. Art. 1, § 20.

of 1971, which further defines property as what can be loosely characterized as “real estate,” provides a four-step condemnation process that applies to all eminent domain proceedings.⁴³ Additionally, the Eminent Domain Act of 1971 proscribes the process for awarding just compensation, which is a term that is not defined by either the Federal or State Constitutions.⁴⁴ It requires that redress granted to the property owner should reflect fair market value for a total taking or diminution in fair market value to the remainder parcel for a partial taking.⁴⁵

The constitutional norm of just compensation is in accordance with property law’s concepts of stability. In 1215, the Magna Carta read, “No constable or other of our bailiffs shall take corn or other chattels of any man without immediate payment, unless the seller voluntarily consents to postponement of payment.”⁴⁶ This clause denotes that compensation was expected when the King took rations from the people.⁴⁷ As history progressed, just compensation became a common feature of government that evolved into an established common law principle.⁴⁸ As such, scholars have explained that the just compensation principle is grounded in natural law, identified by John Locke as the rights to “life, liberty, and property.”⁴⁹

C. Property’s Philosophical Framework

John Locke is among one of the most influential political thinkers of the modern period.⁵⁰ His treatment of property is generally thought to be among his most important contributions in political thought.⁵¹ To understand Locke’s concept of natural law, one must travel back into the

⁴³ N.J.S.A. 20:3-1 (1971).

⁴⁴ *Id.*

⁴⁵ City of Ocean City v. Maffucci, 740 A.2d 640, 641 (N.J. App. Div. 1999).

⁴⁶ James W. Ely, Jr., *The Historical Context of Just Compensation: "Just Compensation" Does Not Necessarily Mean "Fair Compensation,"* THE PRACTICAL REAL ESTATE LAWYER 9 (2014).

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.* at 10

⁵⁰ Alex Tuckness, *Locke’s Political Philosophy*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY (2005), <http://plato.stanford.edu/entries/locke-political/>.

⁵¹ *Id.*

state of nature.⁵² There, the governing law is that of reason, which bespeaks individual preservation and sustainment of others.⁵³ According to Locke, each person has a responsibility to preserve mankind, so long as such efforts do not work against the individual himself.⁵⁴ Locke's concept of preservation is premised on the notion of secure individual rights.⁵⁵ Among these is the right to property, something that is "justly" appropriated through self-ownership.⁵⁶

To Locke, personal property is inextricably linked to the law of nature.⁵⁷ Much of Locke's thinking in this area focuses on the importance of the earth as a whole, which he views as the property of all the people in the world.⁵⁸ It follows that Locke believes the earth must be justly appropriated to ensure the collective benefit and survival of all individuals.⁵⁹ As such, Locke attempts to balance sustainability with personal property and ownership.⁶⁰ In *Two Treatises on Government*, Locke wrote:

"The same law of Nature that does by this means give us property, does also bound that property too . . . As much as any one can make use of to any advantage of life before it spoils, so much he may by his labor fix his property in. Whatever is beyond this is more than his share, and belongs to others So that, in effect, there was never the less left for others because of his enclosure for himself. For he that leaves as much as another can make use of does as good as take nothing at all."

⁶¹

Though written in 1698, the pillars of Locke's work remain relevant to property law today.⁶² When exercising its eminent domain powers, the government often cites "public good" or "public

⁵² Paul J. Otterstedt, *A Natural Rights Approach to Regulatory Takings*, 7 TEX. REV. L. & POL. 25, 31 (2002).

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ John Locke, *Two Treatises on Government* (Peter Laslett ed.) (3rd ed. 1698).

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² John G. Sprankling, *Understanding Property Law*, LEXISNEXIS 21 (3rd ed. 2012).

necessity” as a socially accepted justification for use of its sovereign power.⁶³ Thus, the government’s check on individual property, when used to the detriment of others, mirrors Locke’s rhetorical question that asks, “. . . May [anyone] engross [the earth] as much as he will? To which I answer, Not so.”⁶⁴ Despite the individualist school of thought that one has the right to do with her property as she wishes, the personal right to property must compromise with the environmental interests of the community.⁶⁵ Just compensation attempts to strike such a balance by protecting individuals from bearing public the burdens of climate change and natural accretion.⁶⁶

D. Governmental Restrictions on Access to Private Property: Just Compensation

While the Federal and New Jersey Constitutions guarantee just compensation, or fair value, for any property taken, the more tumultuous issue often arising is whether the valuation method used to derive a monetary amount affords the litigant due process or unjust enrichment.⁶⁷ It is well established that valuation methods in partial takings of easements are more complex than when dealing with an entire taking.⁶⁸ New Jersey courts have generally followed one of two computation formulas: The “‘Per Se’ Rule” or the “Before and After Rule.”⁶⁹ The Per Se rule adds the market value of the land taken to the difference between the value of the remainder before and after the taking [Value of land taken + (value of remainder area before taking – value of remainder area after taking) = just compensation].⁷⁰ The Before and After Rule merely computes damages as the difference between the value of the entire parcel before the taking and the remainder after the

⁶³ Nasim Farjad, *Condemnation Friendly or Land Use Wise? A Broad Interpretation of the Public Use Requirement Works Well for New York City*, 76 FORDHAM L. REV. 1121 (2007).

⁶⁴ Locke, *supra* note 57.

⁶⁵ John T. Vaughan III, *Just Compensation or Unjust Enrichment? Critiquing Attempts to Circumvent State Sovereignty in Regulatory Takings Law*, 54 RUTGERS L. REV. 323, 324 (2001).

⁶⁶ *Id.* at 345.

⁶⁷ Robert C. Downie, II, *Quasi - Judicial Proceedings and Constitutional Rights: What Is Happening to Separation of Powers?*, FLA. B.J., 44, 45 (1997).

⁶⁸ 21 N.J. Prac., Skills And Methods § 37:14 (3d ed.) (West 2015).

⁶⁹ *Id.*

⁷⁰ *Id.*

taking [Value of entire parcel before taking – value of remainder parcel after taking = just compensation].⁷¹ Under both formulas, testimony of a real estate appraisal expert is required.⁷²

There are, however, a variety of limitations to awarding just compensation.

Relevant to the issue of just compensation is the evidence of current and prospective uses of a partially condemned property.⁷³ A real estate appraisal expert must consider both the use of the property at the time of the condemnation and its “highest and best use.”⁷⁴ However, “[e]lements affecting value that depend upon events or combinations of occurrences which, while within the realm of possibility, are not fairly shown to be reasonably probable, should be excluded from consideration, for that would allow mere speculation and conjecture to become a guide for the ascertainment of value . . .”⁷⁵ The highest and best use of a parcel must be considered under the applicable zoning regulations and typically reflect the legal value of the highest dollar amount.⁷⁶

Prior to 2013, New Jersey law was well settled as to the benefits that could offset just compensation. General benefits, which are benefits produced by partial condemnation and shared in common with all other property owners in the area, could not affect an award of damages.⁷⁷ Special benefits, however, are benefits that accrue “directly and proximately” to the remainder parcel and are unique to the individual property owner.⁷⁸ This distinction between general and special benefits previously prevented juries from hearing testimony about the benefits provided by

⁷¹ *Id.*

⁷² *Maffucci*, 740 A.2d at 638.

⁷³ Mark S. Dennison, *Probable Zoning Change As Bearing On Proof Of Market Value In Eminent Domain Proceeding*, 40 AM. JUR. PROOF OF FACTS 3d 395 (West 2016).

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ Dennison, *supra* note 73.

partial takings implementing storm surge protection.⁷⁹

E. The Turning Point: *Harvey Cedars* and Beyond

The New Jersey Supreme Court's seminal decision in *Borough of Harvey Cedars v. Karan* set a new valuation standard in partial takings cases.⁸⁰ There, the Court held that just compensation must be based upon a consideration of "all relevant, reasonably calculable, and non-conjectural factors that either decrease or increase the value of the remaining property."⁸¹ The issue in *Karan* concerned a partial condemnation proceeding against one of sixteen holdouts that refused to give the State a voluntary easement for sand dune construction across a Long Beach Island home.⁸² The property-owners argued that the sand dune obstructed their panoramic oceanfront view, which decreased the market value of their coastal residence.⁸³ The Borough, however, argued that the landowners obtained a benefit from the added storm protection that must be calculated into their compensation award.⁸⁴

The trial court found that the sand dune construction did not confer a special benefit to defendants, but rather a general benefit that protected Long Beach Island and its inhabitants from the "destructive impact of hurricanes and nor'easters."⁸⁵ As such, the jury awarded the Karans \$375,000 in damages.⁸⁶ The Appellate Division affirmed, finding that the loss of oceanfront view was compensable and significantly reduced the market value of the property.⁸⁷ Additionally, the new sand dune would occupy a strip of the Karan's private beach property, resulting in loss of

⁷⁹ *Id.*

⁸⁰ *Borough of Harvey Cedars v. Karan*, 70 A.3d 524 (2013).

⁸¹ *Id.* at 527.

⁸² *Id.* at 527-28.

⁸³ *Id.* at 530.

⁸⁴ *Id.*

⁸⁵ *Borough of Harvey Cedars v. Karan*, 40 A.3d 75, 77 (N.J. App. Div. 2012) *rev'd*, 70 A.3d 524 (2013).

⁸⁶ *Id.*

⁸⁷ *Id.*

recreational use.⁸⁸ Citing to decade old New Jersey precedent, the Appellate Division followed *City of Ocean City v. Maffucci* in holding that “ocean view, beach access, use and privacy are fundamental considerations in valuing beachfront property.”⁸⁹

In *Karan*, the central question for the New Jersey Supreme Court was whether the formula used by the courts below, which does not permit consideration of quantifiable benefits resulting from partial condemnation to increase the value of the remainder property, reflects the owner’s true loss.⁹⁰ The high court disagreed, finding that the new sand dune conferred unique storm protection on the Karans.⁹¹ This departure from the historical valuation approach used by the lower courts reflects a dramatic change in eminent domain compensation. Ultimately, the Karans settled for a symbolic one dollar (\$1.00) for their loss.⁹² The decision in *Karan* implicates a new standard that now allows juries to hear a broader scope of evidence, drastically affecting the outcome of subsequent sand dune partial takings cases by lowering the compensation awards.

Shortly after the seminal *Karan* decision, the New Jersey Appellate Division published two back-to-back appeals in *Petrozzi v. City of Ocean City*.⁹³ Although not a condemnation case, *Petrozzi* made clear that *Karan*’s departure from the general versus special benefits approach to partial valuation would not be easily limited. In *Petrozzi*, Ocean City sought a proactive approach to storm surge protection and beach replenishment.⁹⁴ But rather than exercising its power of eminent domain, the City acquired voluntary easements for sand dunes from Ocean City’s property owners through use of a height restriction.⁹⁵ The “easement agreements” were premised on the

⁸⁸ *Id.*

⁸⁹ *Id.* quoting *Maffucci*, 740 A.2d at 641.

⁹⁰ *Karan*, 70 A.3d at 527.

⁹¹ *Id.* at 532.

⁹² Scott Salmon, *Necessary Change: Recalculating Just Compensation for Environmental Benefits*, 6 WASH. & LEE J. ENERGY, CLIMATE & ENV’T 552, 581 (2015).

⁹³ *Petrozzi v. City of Ocean City*, 78 A.3d 998 (N.J. App.Div. 2013).

⁹⁴ *Id.* at 1002.

⁹⁵ *Id.* at 1002-03.

condition that the sand dune would not impede the landowners' coastal view.⁹⁶ Natural accretion, however, unsurprisingly caused the sand dunes to grow in size, exceeding their initial conformance.⁹⁷ When the property owners' showed concern over the dune's enlargement, they learned that since their initial assent to the easement agreement, New Jersey had implemented the Coastal Area Facility Review Act ("CAFRA").⁹⁸ This statute required that the City get permission from the NJDEP before maintaining or reducing dune elevation.⁹⁹ Subsequently, the City's request for the necessary permit was denied by NJDEP due to "non compliance with government regulations."¹⁰⁰ This resulted in the landowners filing suit against Ocean City, alleging that the easement agreements were breached due to loss of beachfront view, access, and privacy.¹⁰¹

The trial court found in favor of the plaintiffs and awarded compensation for loss of view.¹⁰² The Appellate Division, however, remanded the case back to the trial court.¹⁰³ In doing so, it instructed that, "the fixing of an appropriate restitutionary amount must consider the value of that which plaintiffs have been deprived, including loss of, or interference with, their ocean views due to the accretive effects. But offset against the burdens suffered by plaintiffs are the potential gains conferred by the partial consideration performed by Ocean City to date, namely *the non-speculative, reasonably calculable benefits arising from the municipality's dune project.*"¹⁰⁴ Thus, *Petrozzi* evidences the broadly precedential effect of the *Karan* valuation formula created by the New Jersey Supreme Court.

About a year after the Appellate Division decided *Petrozzi*, it was clear that the scope and

⁹⁶ *Id.* at 1002.

⁹⁷ *Id.* at 1003.

⁹⁸ *Petrozzi*, 78 A.3d at 1003.

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.* at 1007.

application of the new valuation approach would extend down to New Jersey trial courts. In *Borough of Harvey Cedars v. Groisser*, defendants sought an \$800,000 award for the government's partial condemnation of their property to create a sand dune easement.¹⁰⁵ Specifically, the Groissers argued that the easement was worth approximately \$200,000, while their damages for loss of view was worth \$600,000.¹⁰⁶ Prior to the New Jersey Supreme Court's holding in *Karan*, an Ocean County Superior Court jury awarded the plaintiffs \$265,000.¹⁰⁷ But after applying the new *Karan* standards and weighing the potential increase in property value resulting from the dune's insulation, the Groissers were awarded a mere \$300 on remand.¹⁰⁸ Acting Attorney General John J. Hoffman called the verdict "an important legal win for the state's beachfront property efforts, for our vital natural resources along the coast, and for the citizens of New Jersey. . ."¹⁰⁹ Clearly, the tide had turned on coastal residents.

Part IV: New Approaches to Water Management: Moving Away from Sand Dunes and the Compensation Conundrum

A. Land Use Management: Moving Away from Water

Though it appears that the new valuation approach will prevent windfalls to property owners and further the public coastal replenishment initiative, some scholars suggest that these efforts produce latent difficulties. Professor Daniel D. Barnhizer of Harvard University believes that current governmental responses to rising sea levels will not ultimately diminish flood

¹⁰⁵ *Borough of Harvey Cedars v. Groisser*, No. L-001429-09 (N.J. Super. Ct. Ch. Div. June 24, 2014).

¹⁰⁶ Patricia A. Miller, *Harvey Cedars Couple Sought \$800,000 For Dune Easement, Jury Awards \$300*, BARNAGET-MANAHAWKIN PATCH (July 1, 2014, 2:06PM), <http://patch.com/new-jersey/barnegat-manahawkin/harvey-cedars-couple-sought-800000-for-dune-easement-jury-awards-300>.

¹⁰⁷ Donna Weaver, *Jury Awards Harvey Cedars Couple \$300 For Easement To Complete Dune Project*, THE PRESS OF ATLANTIC CITY (June 30, 2014, 5:30PM), http://www.pressofatlanticcity.com/news/breaking/jury-awards-harvey-cedars-couple-for-easement-to-complete-dune/article_d0ba717a-009d-11e4-bf66-0019bb2963f4.html.

¹⁰⁸ *Id.*

¹⁰⁹ Statement of John J. Hoffman, N.J. Att'y Gen., *N.J. Wins Another Cheap Easement of Beach Dune Project*, LAW 360 (Sept. 22, 2015, 11:00 AM), <http://law360.com/articles/553508/nj-wins-another-cheap-easement-for-beach-dune-project>.

damages.¹¹⁰ Rather, he argues that, over the next 20 years approximately 26 million people will become seaside property residents under the mistaken belief that their homes are shielded from natural disasters by government protection mechanisms.¹¹¹ Currently, over half of the American population lives in coastal counties that amount to only seventeen percent of habitable land.¹¹² Little do they know, government action such as beach replenishment projects and partial condemnation for sand dune easements have unintended consequences that actually *increase* potential beachfront damage.¹¹³

It is well established that flooding is the leading cause of natural disaster damage in the United States.¹¹⁴ However, such damage would not exist without human development in the floodplains.¹¹⁵ Floodplains are defined as

“uniquely impermanent and changeable landforms, subject to destruction or catastrophic alteration through erosion during flood events. Oceanfront property. . . is eroding constantly and hundreds of feet of beach may disappear in a single storm. Compared to “dry” real estate that remains permanently in place and responds only to tectonic forces, floodplains are not “real land,” but rather may disappear under the property owner’s feet at any time.”¹¹⁶

Despite this, over 50% of the American population lives within 50 miles of the coast.¹¹⁷

This increasing ratio does not explain how beachfront property owners understand and deal with the uncertainties of flood damage. Though property law and self-ownership depend on concepts of stability,¹¹⁸ it appears that beachfront homeowners are not concerned with changing

¹¹⁰ Daniel D. Barnhizer, *Givings Recapture: Funding Public Acquisition of Private Property Interests on the Coasts*, 27 HARV. ENVTL. L. REV. 295, 374 (2003).

¹¹¹ *Id.*

¹¹² Kelley M. Jancaitis, *Florida on the Coast of Climate Change: Responding to Rising Seas*, 31 ENVTL. L. & POL’Y J. 157, 191 (2008).

¹¹³ Barnhizer, *supra* note 110.

¹¹⁴ Oliver A. Houck, *Rising Water: The National Flood Insurance Program and Louisiana*, 60 TUL. L. REV. 61, 62 (1985).

¹¹⁵ Barnhizer, *supra* note 110.

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ Lovett, *supra* note 1, at 476.

weather patterns, rising sea levels, and global warming.¹¹⁹ What is the reason for this inconsistency? “Givings,” defined as government actions that increase the value of private property, may be the answer to individuals’ false sense of shelter.¹²⁰ In the context of coastal protection, givings encompass sand replenishment projects like those discussed in *Karan, Petrozzi, and Groisser*.¹²¹ These public projects are known as “structural mitigation” responses to flooding, which are mechanisms designed to prevent or reverse erosion of the floodplain.¹²² Two of the primary issues related to structural mitigation givings like sand dunes include (1) who should retain the increased value to private property, and (2) when can the government force owners to pay or forego compensation for the measureable benefits of givings.¹²³ These questions must be considered in the context of the *Karan* valuation standard and subsequent cases that follow the new damages formula.

Sand dunes are structural mitigation givings in two ways: they are “direct givings” and “fiat givings.”¹²⁴ Sand dunes offer beach armor and are considered a “direct giving” because they counteract the dangerous effects of flood damage through soft barriers.¹²⁵ In turn, property owners underestimate the danger of flood risks under the misconception that they are protected from water damage entirely.¹²⁶ Due to these beliefs, property values for coastal properties rise as a result of government’s structural mitigation techniques.¹²⁷ The market does not yet account for a

¹¹⁹ Dan R. Anderson, *Catastrophe Insurance and Compensation: Remembering Basic Principals*, 53 CPCU J. 76 (2000).

¹²⁰ Abraham Bell & Gideon Parchomovsky, *Givings*, 111 YALE L.J. 547, 550 (2001).

¹²¹ NAT’L RESEARCH COUNCIL., BEACH NOURISHMENT AND PROTECTION 20, 45-49 (1995).

¹²² Barnhizer, *supra* note 110.

¹²³ RICHARD A. EPSTEIN, TAKINGS: PRIVATE PROPERTY AND THE POWER OF EMINENT DOMAIN 12-14 (1985).

¹²⁴ Barnhizer, *supra* note 122.

¹²⁵ *Id.*

¹²⁶ Gilbert F. White, *Strategic Aspects of Urban Floodplain Occupance*, 1 GEOGRAPHY, RESOURCES AND ENVIRONMENT 84, 90 (Robert W. Kates & Ian Burton eds. 1986) (1960).

¹²⁷ Edward Thompson, Jr., *The Government Giveth*, ENVTL. FORUM 26 (1994).

relationship between land values and flood risk.¹²⁸ Sand dunes are also considered fiat givings because property owners believe they have the government's guarantee that their property will continue to exist.¹²⁹ Fiat givings are "givings that result where the government declares . . . that it will not permit a floodplain landowner's property to move, erode, or disappear. By declaring its intent to guard floodplain properties against future encroachments by nature, government has in effect created 'dry' land by fiat . . ." backed by the full faith and credit of the federal or state government . . ."¹³⁰ There is "government-created reliance that the existing state of [protection] will be maintained."¹³¹

The categorization of sand dunes as "direct" and "fiat" givings begs the question whether the government must pay for these self-created givings when they purchase or take private property for public use.¹³² In other words, will government have to pay for increased value that it has created? Although givings, like ecosystems, are extremely difficult to value monetarily, it appears that New Jersey has taken the position that government should not have to pay increased costs for implementing conservation structures. This is reflected by the new just compensation valuation approach initially established in *Karan*.

One of the primary justifications for creating a new valuation standard in *Karan* was that "homeowners are entitled to the fair market value of their loss, not to a windfall, not to a pay out that disregards the home's enhanced value resulting from a public project."¹³³ Aside from concerns about property owners' unjust enrichment for sand dune easements, hefty compensation

¹²⁸ INSURANCE INST. FOR PROPERTY LOSS REDUCTION & INSURANCE RESEARCH COUNCIL, COASTAL EXPOSURE AND COMMUNITY PROTECTION: HURRICANE ANDREW'S LEGACY, 8-9 (1995).

¹²⁹ Barnhizer, *supra* note 110.

¹³⁰ *Id.*

¹³¹ *Id.* at n. 99.

¹³² Barnhizer, *supra* note 110.

¹³³ *Karan*, 70 A.3d at 527.

for government flood responses may distort market reactions to flood risks.¹³⁴ This reinforces market misconceptions about residential development of floodplains and discourages property owners' independent use of protective measures.¹³⁵ "Additionally, overcompensation further shifts the risk of flood losses to taxpayers, requiring them to subsidize the decisions of floodplain property owners at even greater rates."¹³⁶ All together, these factors require government entities to continue maintaining and building structural flood controls.¹³⁷ But as Professor Barnhizer points out, more beachfront residential ownership is induced by dune creation that sends the message that ownership is safe and secure.¹³⁸

To combat the perpetual problem of costly flood damages, Professor Barnhizer argues that a land use management approach, rather than a structural mitigation approach, is most appropriate.¹³⁹ Land use management is a proactive, non-crisis focused decision-making process that focuses on current and future floodplain occupation.¹⁴⁰ This method maximizes the economically beneficial use of floodplains while minimizing the economic loss related to human residential development.¹⁴¹ Although this strategy is best implemented before the expanse of coastal homes is as far-reaching as it is today, a modified exercise of land use management must be applied in place of current structural mitigation techniques that are unsustainable.¹⁴² A recent study indicates that a quarter of all homes within 500 feet of the coast will be subject to shoreline

¹³⁴Bell & Parchomovsky, *supra* note 120, at 554.

¹³⁵ NAT'L WILDLIFE FED'N, HIGHER GROUND: A REPORT ON VOLUNTARY BUY-OUTS IN THE NATION'S FLOODPLAINS 7-8 (1999).

¹³⁶ Barnhizer, *supra* note 110.

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ Gilbert F. White, Human Adjustment to Floods: A Geographical Approach To Flood Problems In The United States (1945) (published dissertation, University of Chicago) (on file with the University of Michigan).

¹⁴¹ Raymond J. Burby, Steven P. French & Beverly A. Cigler, *Flood Plain Land Use Management: A National Assessment*, 5 STUDIES IN WATER POLICY & MANAGEMENT (1985).

¹⁴² Barnhizer, *supra* note 110.

erosion and flooding within the next sixty years.¹⁴³ However, before attempting an effective land management plan, the proper regulations and economic incentives must be put into place to start to change the American way of thinking about residential development and investment.¹⁴⁴ Significant changes suggested by Professor Barnhizer include (1) public acquisition of floodplain property; (2) government compensation for property owners' legitimate expectations, not "givings" attributable to government flood response; and (3) government must establish a federal property acquisition program aimed at high-risk or environmentally valuable floodplain properties.¹⁴⁵

These proposed reforms should begin with immediate prohibitions to residential flood plan development through land use restrictions such as zoning and police power regulations.¹⁴⁶ Although these regulations may be authorized by statute, the public-trust doctrine and ancient nuisance law serve as alternate justifications.¹⁴⁷ The public-trust doctrine requires that the state hold its coastal resources in a perpetual trust for the public benefit.¹⁴⁸ Though this doctrine originally meant to preserve the shorelines for navigation, commerce, and public recreation, "there is a growing public recognition that one of the most important public uses of the tidelands . . . is the preservation of those lands in their natural state."¹⁴⁹ The trust attaches to the coast, wherever it moves.¹⁵⁰ Thus, as sea levels rise and coastal properties are flooded, the public-trust doctrine

¹⁴³ *Id.*; John H. Heinz III, Ctr. for Sci., Econ. & the Env't, Evaluation of Erosion Hazards xxi, 128 (2000).

¹⁴⁴ Jancaitis, *supra* note 112, at 187.

¹⁴⁵ Barnhizer, *supra* note 110.

¹⁴⁶ *Id.*

¹⁴⁷ Gilbert L. Finnell, Jr., *Public Access to Coastal Public Property: Judicial Theories and the Taking Issue*, 67 N.C. L. REV. 627 (1989).

¹⁴⁸ Meg Caldwell & Craig Holt Segall, *No Day at the Beach: Sea Level Rise, Ecosystem Loss, and Public Access Along the California Coast*, 34 ECOLOGY L.Q. 533, 551 (2007).

¹⁴⁹ *Id.* at 553; quoting James M. Titus, *Rising Seas, Coastal Erosion, and the Takings Clause: How to Save the Wetlands and Beaches Without Hurting Property Owners*, 57 MD. L. REV. 1279, 1368 (1998).

¹⁵⁰ *Id.* at 553.

requires that private property give way to shoreline erosion.¹⁵¹ Moreover, sand dunes and other structural mitigation techniques run the risk of impeding on this common law principle. By artificially preventing the tide from moving freely, the public is being denied its reversionary trust interest in the beach.¹⁵²

Basic nuisance principals also support coastal property regulation changes. According to the Restatement, “[a] public nuisance is an unreasonable interference with a right common to the general public Circumstances that may sustain a holding that an interference with a public right is unreasonable include . . . whether the conduct is of a continuing nature or has produced a permanent or long-lasting effect, and, as the actor knows or has reason to know, has a significant effect upon a public right.”¹⁵³ This definition could easily encompass current coastal problems, including both residential overdevelopment and sand dune storm “protection.” By recognizing particular harms such as increased erosion, visual blight, loss of beachfront, and the creation of physically hazardous flood risks, the suggested prohibitions on coastal development align with the goals of common law nuisance.

By grounding coastal land development regulation in the public trust doctrine and basic nuisance principles, the government will be immunized from constitutional takings challenges.¹⁵⁴ Though some property rights activists have suggested that courts unfairly impose these common law doctrines against private property interests, history shows us that the public trust doctrine is inherent in the chain of title of all New Jersey properties that boarder waterways.¹⁵⁵ “It is not an imposition on the property owner but part of the nature of his or her property.”¹⁵⁶ Therefore, the

¹⁵¹ *Id.*

¹⁵² *Id.* at 554.

¹⁵³ Restatement (Second) of Torts § 821B (1979).

¹⁵⁴ Caldwell & Segall, *supra* note 148, at 553.

¹⁵⁵ Timothy M. Mulvaney & Brian Weeks, “Waterlocked”: Public Access to New Jersey’s Coastline, 34 *ECOLOGY L.Q.* 579, 585 (2007).

¹⁵⁶ Caldwell & Segall, *supra* note 148, at 568.

government has the freedom to take a direct approach to preventing development in the dangerous floodplains.¹⁵⁷ James Titus, a scholar on the rising sea level, has advocated for the merits of rolling conservation easements to *prohibit* flood control structures like sand dunes.¹⁵⁸ The idea behind rolling easements is that since it is unrealistic to prevent coastal development altogether, an alternative is to allow development with the conscious understanding that land will be abandoned when and if the sea level rises enough to submerge it.¹⁵⁹ This is a way of averting or mitigating prospective violations of the public trust doctrine or public nuisances. In stark contrast to the easements perpetuated by the U.S. Army Corps of Engineers and taken in *Karan*, these rolling easements are intended to counter the false sense of coastal property protection resulting from current government givings. Without dunes and other structural mitigation forms, flood damage will occur naturally and the risk factor will be directly reflected in the beachfront residential housing market.¹⁶⁰ As such, concerns about government condemnation discussed in *Karan* and beyond will no longer exist, and the market will adjust to the natural and inevitable future of rising seas.

States like Maine, Rhode Island, South Carolina, and Texas currently regulate their shorelines through rolling easements.¹⁶¹ In these states, the government holds an easement that allows for beachfront development on the condition that, if the sea rises to dangerous levels, the structure will be removed.¹⁶² This “build at your own risk” approach puts landowners on notice that the future of their coastal properties is unpredictable, but like the changing climate, carry an inevitable fate.

¹⁵⁷ *Id.* at 553.

¹⁵⁸ *Id.* at n. 209.

¹⁵⁹ James A. Titus, *Rolling Easements*, CLIMATE READY ESTUARIES (2011), available at <https://www.epa.gov/sites/production/files/documents/rollingeasementsprimer.pdf>.

¹⁶⁰ *Id.*

¹⁶¹ Jancaitis, *supra* note 112, at 193.

¹⁶² *Id.*

Not surprisingly, aspects of land use management have roots in national policy initiatives. Specifically, the Coastal Zone Management Act (“CZMA”), a congressional declaration of national policy, mandates that states protect their natural resources and manage shoreline development to minimize loss of life and property.¹⁶³ Though this policy has not been widely acknowledged in New Jersey, other states have taken steps in a direction likely to gain the approval of Professor Barnhizer and other coastal management proponents. Nagshead, North Carolina, for example, has adopted a land development moratorium following natural disasters.¹⁶⁴ There, during the thirty days following a disaster, zoning laws and disaster mitigation strategies may be adopted in response to the changing environment.¹⁶⁵ All subsequent land use development must comply with these new standards.¹⁶⁶ Similarly, environmentalists in Maine are concerned with protecting their shorelines.¹⁶⁷ Unlike New Jersey’s active use of structural mitigation techniques as protections for beachfront development, Maine’s Coastal Sand Dunes Law (“MCSDL”) is highly precautionary.¹⁶⁸ The MCSDL requires that before new structures are built on the coast, there must be accountability for environmental concerns including sea level rise, changing shorelines, and wildlife habitat.¹⁶⁹ And unlike New Jersey’s efforts to rebuild the damage caused by Hurricane Sandy in the same manner as before, Maine requires permits and approvals to relocate and rebuild structures severely damaged by natural disasters.¹⁷⁰

¹⁶³ 16 U.S.C. § 1452(2) (2006).

¹⁶⁴ John R. Nolon, *Disaster Mitigation Through Land Use Strategies*, 23 PACE ENVTL. L. REV. 959, 974 (2006).

¹⁶⁵ *Id.* at 975.

¹⁶⁶ *Id.*

¹⁶⁷ Jancaitis, *supra* note 112, at 188.

¹⁶⁸ ME. REV. STAT. ANN. tit. 38 § 480-D (2007).

¹⁶⁹ *Id.*

¹⁷⁰ 355 ME. CODE R. § 5(c) (Weil 2007).

B. Designing With Water, Not Against It

In considering the proper techniques for a new land use management initiative, it may be reasonable to look to the Netherlands' approach to water management. Unlike America, Europe has focused on climate change as a major public concern for more than a decade.¹⁷¹ As such, the Dutch have already radically adapted their infrastructure to the rising seas.¹⁷² Because approximately half of the Netherlands lies below sea level,¹⁷³ it has developed a communal society of flood planning in every region.¹⁷⁴ Not only are three out of every five Dutch citizens living at or below sea level, but two-thirds of products in the Dutch economy are produced in areas threatened by such climate change.¹⁷⁵ In fact, the Dutch motto is “Water should get space before it takes it!” which may be attributable to a governmental public relations campaign called “*Nederland left met water*” (“The Netherlands lives with water”.)¹⁷⁶ In contrast to the American system of individualism, Dutch cities do not have the autonomy given to American municipalities by way of unique protection mechanisms.¹⁷⁷ Rather, Dutch water management and the finance system behind it are highly decentralized and focus on adaptation.¹⁷⁸ The Dutch are now using innovative building techniques such as the construction of floating houses and office buildings, and digging craters that will act as storage for runoff.¹⁷⁹ Additionally, the Dutch have included water management as a central feature to their urban development plans.¹⁸⁰ For example, Dutch

¹⁷¹ Damien Leonard, *Raising the Levee: Dutch Land Use Law as a Model for U.S. Adaptation to Climate Change*, 21 GEO. INT'L ENVTL. L. REV. 543, 545 (2009).

¹⁷² Russell Shorto, *How to Think Like the Dutch in a Post-Sandy World*, N.Y. TIMES, April 9, 2014, available at <http://www.nytimes.com/2014/04/13/magazine/how-to-think-like-the-dutch-in-a-post-sandy-world.html>.

¹⁷³ J.K. Vrijling, *Probabilistic Design Of Water Defense Systems In The Netherlands*, 3 RELIABILITY ENG. SYST. SAFE 74, 337 (2001).

¹⁷⁴ Shorto, *supra* note 172.

¹⁷⁵ Leonard, *supra* note 171, at 546.

¹⁷⁶ *Id.*

¹⁷⁷ Shorto, *supra* note 172.

¹⁷⁸ P. E. Lindhout, *Application of the Cost Recovery Principle on Water Services in the Netherlands*, 10 J. EUR. ENVTL. & PLAN. L. 309, 311 (2013); Leonard, *supra* note 171, at 547.

¹⁷⁹ Shorto, *supra* note 172.

¹⁸⁰ *Id.*

cities are building reservoirs under their parking garages as a way of guarding against flood risks.¹⁸¹ And according to the European Commission, the Dutch factor in both environmental and resource costs to the cost of water services.¹⁸² Much of this forward thinking water management is attributable to the director of the Netherland's Office of Spatial Planning and Water Management, Henk Ovink.¹⁸³

Ovink believes that water management is something that American culture does not yet grasp.¹⁸⁴ Policy-makers and environmentalists are more focused on preventing global warming than planning for its effects.¹⁸⁵ After observing the U.S. Army Corps of Engineers rebuild storm walls and dunes destroyed by Hurricane Sandy, he questioned why America continues to use the same flood protection mechanisms that have already failed.¹⁸⁶ This is a high-risk, low-utility practice of coastal development.¹⁸⁷ Rather, Ovink sees the acceptance of climate change is a new way of life.¹⁸⁸ In an effort to harness new energy from a range of innovative thinkers, he created a competition called "Rebuild by Design," which allowed experts to redevelop areas of flood damage."¹⁸⁹ Among a plethora of "Dutch-like" ideas, the competitors imagined ways to decentralize electricity and utilities, which allows homes to sustain a storm.¹⁹⁰ Another idea called for a U shape of parks and retraction walls around lower Manhattan.¹⁹¹ For New Jersey beach towns, the experts imagined a total upgrade of water storage capabilities and different dunes and

¹⁸¹ *Id.*

¹⁸² Lindhout, *supra* note 178, at 312.

¹⁸³ Shorto, *supra* note 172.

¹⁸⁴ *Id.*

¹⁸⁵ Jancaitis, *supra* note 112, at 186.

¹⁸⁶ Shorto, *supra* note 172.

¹⁸⁷ Jancaitis, *supra* note 185.

¹⁸⁸ Shorto, *supra* note 172.

¹⁸⁹ *Id.*

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

sea barriers.¹⁹² In Hoboken, Ovink encouraged vegetation on roofs to soak up rainwater and permeable sidewalks.¹⁹³ Additionally, his experts are working on a “mesh network” of Wi-Fi as a new communication system.¹⁹⁴ In the face of a new water management crisis, the Dutch system of regional planning may be attractive to Americans that foresee the danger of the upcoming storms.

IV. Conclusion

Rather than perpetuating the current coastal water management system, there must be a total restructuring of America’s understanding of flood risk and protection. Instead of fighting the earth’s natural progression of rising sea levels, civilization must find away to conform to it. This requires a closer integration of American branches of government, a hierarchical planning structure, and the attachment of funds to adaptation and climate-focused planning opportunities.¹⁹⁵ Property ownership rests in concepts of stability and individual rights, but our current conservation projects will never exist in harmony with individual residents. Until a new plan is implemented, the government will continue to counter beach erosion by taking or using property easements for flood structures. This country is seeking new legislation and policy initiatives that are forward thinking towards water management, rather than putting resources towards unnecessary litigation like *Karan*. By changing the standards for just compensation, the government has found a way to conserve funds and prohibit property owners “unjust enrichment.” But with a new water management system, the government will be able to create a system that is sustainable and realistic, ultimately saving far more money than the ambiguous compensation scheme debuted in *Karan*.

¹⁹² *Id.*

¹⁹³ Shorto, *supra* note 172.

¹⁹⁴ *Id.*

¹⁹⁵ Leonard, *supra* note 161, at 561.