Learning through Competition:
Resilience on the Jersey Shore after Rebuild By Design

by

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ABSTRACT

In the wake of recent devastating storms and the threat of further disruption, major U.S. cities and regions have gained a sense of urgency to plan and prepare for environmental change. Cities, nonprofits, and the federal government are increasingly adopting the architecture field's design competition model as a tool for resilience planning. Competitions promise to yield creative design ideas that would not come to light through traditional planning processes, and to foster public interest and support for investment in climate resilience measures. Little research exists, however, evaluating the practical implications of design competitions or how their outcomes are perceived by local planners and residents.

This thesis examines the potential for competitions to foster a shift toward resilient design in local planning practice. The three municipalities that serve as cases – Asbury Park, Keansburg, and Toms River, New Jersey – each received detailed visions and plans for substantial resilience projects through the federal Rebuild By Design competition, but did not win any financial support for their implementation. Through interviews with local and county-level planners and elected officials, this thesis finds several positive effects of the competition experience on local planning, including new awareness and interest in longterm visioning and cross-boundary collaboration. Findings also include a set of ongoing challenges – primarily, limited local capacity and regional politics – against which the competition alone is inadequate to help communities realize resilience. The thesis concludes with proposals to help resilience competitions better serve the places and people for whom they are generating ideas, as well as broader recommendations for future exercises in policy innovation for resilience planning.

Thesis Supervisor: Brent D. Ryan
Title: Associate Professor of Urban Design and Public Policy

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This is for my grandmother, Catherine Reilly,
the foundation of my love of learning and the Jersey Shore.

And for my fiancé, Peter:
We work too hard and see beauty in too many things.
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Acronyms

CDBG-DR	Community Development Block Grant for Disaster Recovery
CRS	Community Rating System (FEMA)
DCA	New Jersey Department of Community Affairs
FEMA	Federal Emergency Management Agency
HSRTF	Hurricane Sandy Rebuilding Task Force
HUD	U.S. Department of Housing and Urban Development
NDRC	National Disaster Resilience Competition
RBD	Rebuild By Design

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Introduction

1.1 Design Competitions and Resilience Planning

In the wake of recent devastating storms and the threat of further disruption, major U.S. cities and regions have gained a sense of urgency in their need to plan and prepare for environmental change. As public administrators and planners grapple with this challenge and its structural, social, economic, and political implications, a trend has emerged: cities, nonprofits, and the federal government are adopting and adapting the architecture field's design competition model to serve as a tool for resilience planning. Resilient design competitions invite urban designers, architects, planners, and others to generate innovative ideas and propose future site or landscape plans for areas facing impacts from climate change. They promise to bypass bureaucracy and help cities, regions, and the design and planning fields broadly envision methods of protection and climate adaptation that would not come to light through traditional planning processes and site-by-site development patterns.

Use of the design competition as a planning tool and step toward resilience has recently surged. Perhaps the most well-known example is Rebuild By Design ("RBD"), a federal initiative by the Hurricane Sandy Rebuilding Task Force ("HSRTF") and Department of Housing and Urban Development ("HUD"). Launched in the summer of 2013, less than a year after Hurricane Sandy, RBD invited teams to propose resilient visions and implementation plans for Sandy-affected sites. Similarly, and also in 2013, the State of Louisiana hosted a competition asking designers and engineers to propose interventions along the Mississippi River that would support wetland regeneration, protection of coastal communities, and industry and navigation. Changing Course was proposed as an opportunity to bring more analysis and attention to the issues addressed in the State's *Comprehensive Master Plan for a Sustainable Coast* (Marshall, 2013).

Other resilient design competitions have sought ideas on a local scale. In 2015, the Boston Living with Water competition specified three sites of concern within the city and invited

design teams to propose solutions to the impacts of climate change and sea level rise (Stanley, 2015). Just a few months prior to RBD, New York City's Department Housing Preservation and Development announced FAR ROC, a similar design competition focused on the future of a specific site in the vulnerable Rockaway section of Queens (Rosenfield, 2013). The scope and scale of these competitions have varied, as has their timing relative to natural disaster and recovery, but each has aimed to generate new design ideas for vulnerable places in the face of climate change.

The ideas developed through competitions are often stunning and bold. A winner of Boston Living with Water, for example, proposed raising the ground of 100 acres of developed urban space by 12 feet (Stanley, 2015), and each of the three finalists in Changing Course proposed new locations for the mouth of the Mississippi River that would require abandonment of existing residential communities (Marshall, 2015). The designers, planners, and engineers who participate are competing not just on the scale of impact and contribution to resiliency, but also, though perhaps less explicitly, on uniqueness, creativity, and visual impact. Issues like cost and potential public support may be considered by those judging the competition, but, in the interest of generating new ideas and challenging the status quo of

Fig. 1-1: ReDeBoston2100, a competition finalist, proposed raising waterfront land prior to redevelopment. Source: Boston Living With Water.

Fig. 1-2: The Big U, a winner of RBD, envisions the construction 10 miles of protective infrastructure around Lower Manhattan. Source: RBD.

design and development, these political elements are rarely supposed to drive the designs.

There seems to be a growing faith in the competition format to push the field of resilience planning forward. Such novel ideas, it would seem, can come only from interdisciplinary teams led by professional designers, not from bureaucratic city planning offices or other public servants whose proposed solutions would be limited by budgets, politics, and capacity. Private and nonprofit institutions like the Van Alen Institute, which develops and often cosponsors design competitions, including RBD and Changing Course, have spread the idea that a challenge as seemingly overwhelming as climate change "is best approached through a design competition as this method brings together multidisciplinary expertise, resulting in a highly innovative set of solutions" (van der Leer, 2015).

But the apolitical nature of design competitions has led some to question what they really contribute to the cities and regions they focus on. Many of the designs that result could only be feasible to implement with hundreds of millions of dollars in federal funding and presently unconstitutional circumvention of private property rights to develop at the scales proposed. In a country where the reality of climate change and its projected impacts are still debated among citizens and policymakers, neither of those tools is likely to emerge. Further, competitions do not always require the design teams provide implementation plans with their entries, so planners and developers are often not even left with a concept of a first step toward achieving the ends described. Critics note that rarely, if ever, has a design competition led to a political or private sector leader declaring agreement or commitment of resources to a proposed solution at the dramatic scale of managed retreat from coastal towns (Magill, 2015).

Using three cases, this thesis examines the value of resilient design competitions beyond the implementability of the proposals they generate. It describes the experiences and reflections of elected officials and planners in municipalities where a design competition provided detailed proposals and visions of a resilient future but none of the funding needed to implement them, essentially asking: In terms of resilience, or planning and preparing to

withstand the impacts of climate change, where do these towns stand post-competition, and why? As competitions potentially increase in frequency, this research contributes to a broader understanding of whether and how competitions can help cities and regions make commitments and investments to address the challenge of environmental change.

1.2 Rebuild By Design

The cases described in this thesis each represent experiences with one particular resilient design competition that was somewhat unique in its scale, publicity, and level of funding. RBD, as noted above, was launched in 2013 as a federal initiative under the direction the Hurricane Sandy Rebuilding Task Force ("HSRTF" or Task Force). The Task Force was created by executive order on December 7, 2012 – a little over a month after Hurricane Sandy hit the U.S. east coast and caused widespread flooding and extended power outages that left over $65 billion in economic losses, 650,000 homes destroyed or damaged, and critical infrastructure including tunnels, sewage systems, and hospitals disrupted for weeks across the states of New York, New Jersey, and Connecticut (HSRTF, 2013). The Task Force was chaired by then-Secretary of Housing and Urban Development ("HUD"), Shaun Donovan, and included representation from directors of the U.S. Army Corps of Engineers, Environmental Protection Agency, Department of Health and Human Services, and Department of the Treasury, among others. In addition to coordinating the widespread rebuilding work among these agencies, the executive order compelled the Task Force to "identify and work to remove obstacles to resilient rebuilding in a manner that addresses existing and future risks and vulnerabilities and promotes the long-term sustainability of communities and ecosystems" (77 FR 74341, 2012).[1]

The Rebuild By Design competition was launched to help address that goal and represent an exercise in federal policy innovation. A design brief released in June of 2013 stated that the competition would "promote innovation by developing regionally-scalable but

[1] *For a detailed review of Hurricane Sandy recovery programs and the genesis of RBD, see: Elliot-Ortega, K. (2015). Urban design as problem solving: Design thinking in the Rebuild by Design resiliency competition. Master's thesis, Massachusetts Institute of Technology, Cambridge, Massachusetts.*

locally-contextual solutions that increase resilience in the region," and was intended to generate specific proposals that would be implemented using Community Development Block Grant Disaster Recovery ("CDBG-DR") and additional private funding (RBD, 2013).

Urban designers and their selected team members were challenged to develop those implementable, scalable resilience proposals over a year-long, three-stage process. In the first round, over 140 teams submitted descriptions of their level of expertise and experience in fields including architecture, land use planning, infrastructure engineering, and community engagement. Along with qualifications, teams were asked to submit preliminary resilience ideas specifically designed to address either "coastal communities, high-density urban environments, ecological and waterbody networks, unidentified and unexpected" landscape typologies (RBD, 2013). The Hurricane Sandy Rebuilding Task Force chose just ten teams to move on to the second round, or research stage, which took place between August and October 2013 (HUD, 2013). In round two, each design team was provided $100,000 and required to attend seminars and site visits in order to develop sets of preliminary "design opportunities" – or, "key opportunities or key projects that have the potential for maximum impact on the region's strengths and vulnerabilities" (RBD, 2013).

Beginning in November 2013, all ten teams remaining in the competition narrowed their ideas to focus on specific design concepts that could be addressed and improved with the participation of local stakeholders. The teams were each granted another $100,000 to create and undertake "a facilitated, iterative community engagement process with all levels of government" in the neighborhoods and municipalities their proposals would impact (RBD, 2013). The Van Alen Institute, Municipal Art Society of New York, and Regional Plan Association served as competition partners in this stage with the intent of adding capacity and networks to help the design teams connect with stakeholders. In April 2014 the teams presented final iterations of their designs at public events at in Jersey City and Lower Manhattan. All presented their proposals to a selection jury, which included HUD Secretary Donovan; academics in the

fields of public health, economics, and landscape architecture; and representatives of The Nature Conservancy and Urban Land Institute; among others (RBD, 2013). On June 2, 2014, HUD announced that six of the ten teams' projects were selected as winners and state governments would be granted a total of $920 million for their implementation (HUD, 2014a). The winning projects addressed three sites in New York City, one on Long Island, and two in northern New Jersey. More specifically, these winning visions depicted green infrastructure and other flood resistance systems for dense urban environments in Manhattan and Hoboken, the enhancement and creation of off-shore barrier islands with protective and ecological benefits for Long Island and Staten Island, and economic and structural evolution of vulnerably-sited industrial developments in the Bronx and the Meadowlands. The four designs that were not funded for implementation at the end of RBD represented resilience proposals for sites in central New Jersey; Brooklyn and Queens; Bridgeport, Connecticut; and New York and New Jersey's offshore environment.

In September 2014, HUD announced that additional CDBG-DR grants for local implementation of resilience projects would be available in another competitive format, called the National Disaster Resilience Competition ("NDRC") (HUD, 2014b). Although HUD described the NDRC as "[building] on the successful model of RBD, which emphasized innovative designs and community engagement to develop resilient projects to recover from Hurricane Sandy," this competition would not focus on design or eliciting ideas from the private sector (HUD, 2015). Rather, it would be an opportunity for government agencies of states and counties that experienced a Presidentially Declared Major Disaster in 2011, 2012, or 2013 to describe ongoing unmet needs and vulnerabilities and to propose actions or solutions requiring federal funding. That standard of eligibility left many municipalities dependent on state governments to apply for funding on their behalf. While $180 million of NRDC funding was earmarked to go toward Hurricane Sandy-related work, $176 million of that would be dedicated to flood protection enhancements in Lower Manhattan proposed to expand on adjacent work previously

funded through RBD (Hu, 2016). Of the remaining $820 million distributed, the State of Connecticut received $54 million for implementation of a green infrastructure pilot program in Bridgeport, where RBD had produced a related finalist proposal. The State of New Jersey received no funding for project implementation, but $15 million to support the creation of regional comprehensive plans for resiliency (HUD, 2016).

Essentially, several municipalities and neighborhoods were left at the end of RBD, and following NDRC, with detailed visions and plans for substantial resilience projects, but no federal support to implement or follow up on them. One design team, for example, proposed projects intended to enhance flood protection and economic development in three places along the central New Jersey coast: Toms River in the barrier island region, Asbury Park along the ocean, and Keansburg on the inland bay. These 'unfunded finalists,' it seems, provide a natural experiment to analyze the effects of a resilient design competition process on local planners and policymakers beyond or in the absence of funding.

1.3 Research Questions and Contents

Broadly, this thesis aims to explore how engagement with private design firms in a competition format might affect the trajectory of planning in municipalities like the three case sites referenced above: does the competition experience encourage or lead local planning decision-makers to adjust their long-term priorities or techniques toward a more resilient future? This thesis is also meant to fill a gap in research, discussed in Section 2.2, on the effectiveness and outcomes of design competitions from public servants' perspectives, rather than those of designers. Through RBD and the three 'unfunded finalist' case sites, this thesis addresses two research questions directly:

1. *Where Are They Now?* What kinds of planning actions has each of these municipalities taken since the close of Rebuild By Design, and how does their recent work compare to practices before the competition? Did participation in the design competition process help local planners and civic officials to learn more about their climate-related

vulnerabilities and resilient design response options? Did the experience, in the absence of direct award of implementation funding, foster continued interest and ongoing work toward resilient planning solutions among these civic stakeholders?

2. *Design Competitions as Policy Tools?* What are the potential contributions and limits of the design competition as a tool for resilience planning? What can local civic officials and planning decision-makers learn about resilience and innovative planning through the competition experience? How do economic, social, or political conditions affect the ability of a place or its planners to pursue resilience planning, and what kinds of ongoing local needs or concerns might preclude municipalities from following up on or building off of ideas generated in a competition?

My research approaches these issues and questions through three theoretical lenses: resilience, competitions, and policy change. In the next section of this thesis, I first present current literature on the notion of resilience and its implications for urban design, including a set of principles that have emerged to judge the degree to which a plan or action supports a place's goal of achieving resilience. I also describe the limited critical literature on design competitions, mostly written by and for the architecture field, and highlight a gap in research on whether and how competitions provide beneficial outcomes to the public sector. Third, I address relevant theoretical perspectives on the challenge of changing policies and practices to meet public needs in the face of climate change in order to situate resilient design competitions among other local pressures and policy tools. Each of these branches of thought lays important groundwork for pursuing the questions above through a critical look at resilient design proposals and their effects on local officials and planners.

Section 3 describes the methods of the study. I conducted a qualitative investigation of the research questions as they related to three case sites. In this section, I provide details as to how these sites were chosen as cases. I describe my semi-structured interviews with local elected officials and planners, county planners, and others, as well as the questions I posed to

uncover information and perspectives on their experiences with planning and resilience before, during, and after Rebuild By Design.

In Section 4, I share recent histories of each of the three case sites: Toms River, Asbury Park, and Keansburg, New Jersey. The section highlights each municipality's methods and priorities in planning and development prior to Hurricane Sandy; the proposals generated for each of them through RBD, as well as the degree of involvement elected officials, planners, and the public had in the design process; and any local work toward resilience that has occurred there since the close of the competition. In doing so, it provides answers to the first research question above – *where are they now?* Although each case site represents a similarly weather-vulnerable municipality situated on the central New Jersey coast, their experiences reveal vast differences in the scales and goals of the resilience proposals they received through RBD, the level of civic engagement their design competition processes involved, and the number and types of local planning actions that have occurred since the competition ended. These case profiles provide critical context and set the framework for the comparisons and conclusions that follow.

Section 5 frames the key findings that emerged from my interviews to highlight both positive effects of the competition experience on longterm planning and resilience and the ongoing challenges against which the competition alone is inadequate to serve as a tool to further local and regional resilience. It reports the reflections of municipal and county officials on how the competition may have served to increase public interest in resilience and opportunities for regional collaboration, for example, but also their reflections on how issues like limited local capacity and politics have continued to hinder resilience. This information provides answers to the second research question regarding the potential for design competitions to serve as tools for planning policy change in places facing climate vulnerabilities.

In Section 6, I revisit the three branches of relevant theory described in Section 2 and offer my thoughts on how these findings contribute to each. I also outline recommendations for

the future of resilient design competitions and potential topics for further research. My conclusions contribute to the field's understanding of the current competition model as a climate change response mechanism, specifically, how engagement in competitions, regardless of winning or funding, can affect levels of awareness and interest to lead to action. Establishing a better understanding of the competition experience from the perspectives of the officials and planners should inspire changes in the design competition model to increase its effectiveness as a tool for resilience. This research may also help city, state, and other public administrators determine whether a design competition presents a worthwhile opportunity to help them address climate change, risk, and resilience. More broadly, by exploring the results of the competition on vulnerable coastal communities, this thesis suggests some alternative federal exercises and priorities that could help promote and improve the feasibility of resilient planning, design, and development.

2

Literature

The trend toward design competitions as a tool for resilience planning has been based, largely, on several promises. Competition organizers promise the planning and design fields that competitions will yield creative, intelligent ideas that "push the envelope" and help theorists and practitioners rethink what is possible, architecturally and technologically, to help cities achieve resilience. Competitions promise to draw media attention and public interest to important issues of climate change and risk, and to help sway politics in favor of investment in long-term planning and resilient development. Less frequently, they promise to lead to the actual implementation of the plans and solutions generated.

With such promises in mind, this thesis explores what resilient design competitions deliver. Specifically, interest lies in the outcomes of these competitions for the public servants who invest in them. Three branches of research and theory support this inquiry. The first centers on the broad question of "resilience" itself: What constitutes resilient design, and why are planners and city administrators suddenly looking to it as a guiding principle? A body of literature, summarized here, is emerging to help theorists, planners, and administrators evaluate design proposals based on the degree to which they support a place's goal of achieving resilience. Second, I explore literature on design competitions as a format for idea and proposal generation. Competitions have a long history of being perceived as beneficial in the architecture and urban design fields, and this thesis aims, in part, to test whether and how those benefits carry over to public sector participants. Finally, I provide relevant theoretical perspectives on institutional change: specifically, what factors and conditions push municipal governments to prioritize resilience and climate adaptation in their planning practice, and what challenges do they face? Together, these three theoretical routes describe the position and potential for design competitions in the broad field of resiliency planning, while also uncovering opportunities for further research.

2.1 Resilience

The application of the design competition model to the goal of urban resilience is a relatively new trend, and the notion of resilience itself deserves unpacking. Its recent popularity in the city planning field reflects a growing understanding of the risks posed by climate change and other destabilizing forces in the modern world. In the United States, events like Hurricanes Katrina and Sandy have given climate risk and structural vulnerabilities a national platform. Climate change is predicted to bring increasing storm intensity, higher flood risk, more frequent stretches of extreme heat, and related threats to supplies of food, energy, and other resources (Walsh et al., 2014). Among other things, "resilience" with respect to climate change represents a call to action among planners to address these risks and other unknowns through improved public policies and design. The theoretical explorations of resilience are broad and complex. Here, I present the origins of the term that remain relevant to city and regional planning today.

Ecological Origins

"Resilience" refers to the ecological and environmental science notion of dynamic systems or communities that are able to maintain their basic functions when confronted by resource disturbances and population loss (Holling, 1973). In these fields, "resilient" biological communities are distinguished from "stable" ones: while stable populations display abilities to return to business as usual quickly after disturbing events, they can remain vulnerable to unexpected events, such as the release of a competitor species into an isolated environment; resilient communities, on the other hand, absorb change and disturbance and maintain critical relationships that help them survive long-term. Resilient communities are often found to contain ecological diversity and the presence of species flexible to survive through periods of resource fluctuation and low population numbers (Holling, 1973)

With climate change threatening unpredictable impacts on landscapes and critical human systems, the term and its ecological origins have become widely relevant. The Intergovernmental Panel on Climate Change defines resilience as "the ability of a social or

ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity of self-organization, and the capacity to adapt to stress and change" (IPCC, 2007). "Disturbances" may be manmade or natural – from a terrorist attack to a destructive storm. A resilient city, region, or society is one that has the capacity and systems in place to respond to, learn from, and move forward following unanticipated events, though potentially not in the exact same form as it stood before.

Application to Cities

Theoretical perspectives on resilience from the fields of city planning and design began to take shape in the wake of September 11, 2001 (Steiner, 2014). Larry Vale and Thomas Campanella's (2005) *The Resilient City: How Modern Cities Recover from Disaster* collected a global history of disasters and reconstruction efforts, highlighting that that, in spite of war and natural disasters that devastated lives and infrastructure, few cities have ever been lost to history. Hiroshima, Warsaw, Beirut and other cities largely leveled by attacks have rebuilt and rebounded, as have places damaged widely by earthquakes and fires, including San Francisco and Mexico City. Such places have demonstrated the capacity to absorb and respond to disturbance without changing their basic function and structure (Walker and Salt, 2006); by this definition, consistent with the term's ecological origins, cities overall are, almost always, resilient. Vale and Campanella (2005) credit this history of reconstruction, in part, on enduring "narratives of resilience" promoted by governments attempting to restore their legitimacy following perceived failures to protect citizens from harm.

They note, however, that although "[e]ven the most horrific acts of destruction have been interpreted as opportunities for progressive reform," rarely, if ever, has a city responded to a disaster in ways that might prepare it for another, and post-disaster planning and redevelopment usually reflect pre-disaster practices. Considering the impacts that these places have faced, the trend is understandable in light of basic needs: "The aftermath of a disaster is a time of desperate efforts to restore basic services—and to ensure that survivors are assisted with food,

shelter, medical aid, and clothing; it is not generally deemed an appropriate moment to introduce radical changes in public policy or urban form" (Vale and Campanella, 2005). Historically, cities have responded to natural disasters the same way, despite the understanding that earthquakes and storms, perhaps unlike acts of war, represent long-term risks facing a region. Vale and Campanella argue that there may be a counter-productive link between cause and response that leads cities to avoid implementing resilient redevelopment:

> "In cases where the sources of destruction are largely natural forces ('acts of God'), urban populations receive both sympathy and humanitarian assistance, often accompanied by warnings (usually unheeded) against rebuilding in locations deemed vulnerable to repeat instances of similar destruction… Even though particular urban patterns and building practices are often deeply implicated in the causes of destruction, we often perceive these kinds of urban calamities to result from nonhuman agency" (Vale and Campanella, 2005).

Framework for Planning and Design

In light of growing threats and experiences of manmade and natural disasters, however, the concept of resilience is increasingly being called upon to provide a framework for city planning and design decisions. Repeated evidence of climate change in particular is pushing governments to consider what it would take to change the form of historically vulnerable areas. But what would a shift to "climate-resilient" urban form look like? While broad notions have developed relatively quickly, design ideas are still taking shape. These concepts tend to be based on four principles: enhancing infrastructure, working with nature, thinking regionally, and governing equitably.

Enhancing Infrastructure: Although definitions and priorities vary, arguments for climate-resilient planning generally hold that the "pure engineering approach to urban creation" that dominated twentieth century design and construction will not be sufficient to withstand the unpredictable impacts of climate change. The design of today's hard infrastructure from levees to roadways to powerlines largely reflects a deterministic faith in engineering in which "societies embraced a 'fail-safe' mentality based on the promise of science and technology to meet social

and economic needs, cure disease, and undo the environmental mistakes of past generations" (Ahern, 2011). This view has been challenged by experience as the world has watched expensive, mono-functional infrastructure like levees fail the people and places they were meant to protect, and be succeeded by proposals to rebuild the same.

Concepts of resilient planning and design often criticize the era of "predict and prevent" approaches "for their limited ability to deal with surprise" (Tyler and Moench, 2012). They call instead for "safe-to-fail" approaches to urban design and decision-making that provide those dependent on infrastructure with redundancy and flexibility to minimize disastrous collapses. A place where citizens have access to multiple sources of water so that contamination or loss of one is not devastating, for example, has resilient infrastructure in place, as does one that provides multiple transportation routes and services in and out of each neighborhood (Tyler and Moench, 2012).

Working with Nature: Concepts of resilience also promote the potential for natural land and water features to serve as infrastructure and to help places absorb the impacts of disturbances like storms. Based again on ecological principles, this idea arose from the observation that biological communities and landscapes regularly experience disturbance and exist in fluctuating states, not equilibria. Since our inhabited landscapes also face unpredictable events and change, planners and designers focused on resilience have distanced themselves from the longstanding "static" concept of urban development (Ahern, 2011). The loss of natural coastal buffers like swamps, mangroves, and barrier islands to development is considered a major risk to be remedied. Ecologists and others have noted that if these kinds of buffers were better preserved around cities, damage and loss of life in events like Hurricane Katrina could have been significantly reduced (Walker and Salt, 2006).

The Dutch model of water management is frequently credited with reflecting this notion, as it advocates for practices that make "room for the river" or demonstrate "living with water." Sometimes following such maxims means building flood relief measures into hard infrastructure,

such as designing homes to float or recreational spaces to collect and store floodwater during storms (Shorto, 2014); but it also means planning and executing major design overhauls that use natural features as primary resources. Based on growing evidence that rebuilding dikes would not remain cost-effective in the face of increased flooding and climate change, the Dutch government funded "Room for the River," a design and engineering program to instead move the dikes inland and provide a natural buffer for flooding. This kind of project involves substantial dredging, relocation of homes and farms, and the creation of a new urban park on landfill and two new bridges (Tielen and Stam, 2012). It is a massive example of resiliency planning and the potential for allowing water and land's natural fluctuation to provide valuable public resources and long-term cost avoidance in disaster relief.

Fig. 2-1: A rendering of the Dutch planning and engineering endeavor "Room for the River" to provide flood buffer zones and public space, currently under construction. Source: Ruimte voor de Waal Nijmegen.

At smaller scales, urban green infrastructure projects like impervious surface removal, rain gardens, or vegetated waterbody buffers reflect these ideals as well. U.S. cities including New York City, Philadelphia, New Orleans, Los Angeles, and Chicago have begun to formalize and pilot green infrastructure programs in recent years, often with the intent of testing or showcasing how bringing natural elements into the urban landscape can contribute to storm resiliency, opportunities for recreation, and urban beautification (Benepe, 2013).

Resilient urban designs often call on examples from landscape architecture, a field in which the incorporation of natural systems and ecological elements is a central principle. Theorists and practitioners of landscape architecture highlight the benefits of designing with regard to natural fluctuation of the climate, tides, or biological resources (Bélanger, 2015). Their

work often seeks to achieve social good along with environmental protection, as in the potential for green infrastructure to provide spaces for public enjoyment as well as education on the biological contexts of urban places (Corner, 2006). Principles of landscape architecture are clearly aligned with the goals of resilient design, and plans and projects that exemplify resiliency are often designed or highly influenced by landscape architects or their ideals.

Thinking Regionally: While infrastructure enhancement and the incorporation of natural features and fluctuation present opportunities for cities and neighborhoods, concepts of resilience also call for planners and designers to consider dependencies and impacts at a regional scale. Some of the highest risks as well as the greatest opportunities for resilient design and planning involve sites or systems outside a single jurisdiction. Basic resources that support a city's population – for example, energy, electricity, and food supply – depend on distant generators and distribution infrastructure that lie vulnerable to events and other impacts outside of the city's control (Tyler and Moench, 2012). Increasing opportunities for local production would reduce such risks and aid in recovery, but threats of widespread and unpredictable events call for regional infrastructure improvements and other cross-boundary solutions.

Regional cooperation is a major challenge to planning and designing for resiliency in the United States. State and local governments have little experience with planning and maintaining projects in partnership with others, except under the direction of federal agencies. Traditions of American individualism and home rule reduce the political viability of regional proposals. About half of U.S. states have granted their municipalities "home rule" – the right and responsibility of handling local laws and decisions without seeking approval from state legislatures. Home rule municipalities may have inconsistent zoning codes or planning practices, increasing the difficulty of working across boundaries on design and development strategies (Mandelker et al., 2011). In the face of climate change, some regional governance efforts are taking shape, including the Southeast Florida Regional Climate Compact, through which four of the most vulnerable coastal

counties have agreed to coordinate their physical mitigation and adaptation efforts and advocate together for state and federal support (Snover, 2012). Government responses following Hurricane Sandy, however, illustrate the ongoing challenge: New York City's post-Sandy planning document, "A Stronger, More Resilient New York," has been criticized for failing to acknowledge opportunities for collaboration and coordination with nearby New Jersey or Connecticut (Shorto, 2014).

Equitable Planning and Governance: In addition to design and planning for environment and infrastructure, concepts of resilience often emphasize the importance of social equity and good governance. There is general agreement that achieving resilience requires citizens and institutions to have the capacity, education, and opportunity to participate in planning (Ahern, 2011; Tyler and Moench, 2012). Just as ecologists observed that diverse natural communities tend to display resilience, advocates for resilience planning hold socioeconomic diversity of a place to be fundamental as "cities with higher levels of economic and social diversity […] are better positioned to adapt to change and socio-economic disturbance. For example, an economically and socially diverse city can support social services and cultural programs that keep it economically vibrant, equitable, and attractive place for people to live and work, despite economic and social disturbances" (Ahern, 2011).

Ideally, planning and design processes do not only foster diverse populations but also involve and educate area stakeholders in determining the risks and opportunities they face. In the short term, stakeholder participation assists designers in incorporating or preserving historic and cultural elements of a place that help residents and others continue to identify with and support it through gradual change. Long-term investment of local stakeholders is considered key to ensuring there is capacity for a plan or design to be changed or adapted as needed over time. The plans and designs created today are not necessarily meant to come to life as shown; governments and long-term stakeholders should expect to adjust ideas based on monitored results of experimental or pilot projects, or new knowledge gained from examples implemented

elsewhere. Like other elements of resilience, this kind of adaptive governance has its roots in biological science and natural resource management, but has rarely been practiced in planning, public policy, or design (Dietz et al., 2003; Ahern, 2011).

Each of these four tenets pulls the concept of resilience beyond its ecological foundations and makes it applicable – even central – to the fields of design, planning, and policymaking. Although they do not provide definitive design guidelines, these concepts can help us understand how planning processes and the proposals that result will contribute to a place's resilience.

2.2 Design Competitions

Although the resilience competition may represent a recent development in planning, design competitions have been a part of architectural practice for a long time. As far back as the fifth century BC, design competitions were used to generate buildings for civic sites in ancient Greece (Spreiregen, 1979). The practice has a long history in the United States, too, where private as well as public buildings, including the White House and the Capitol, have been designed through competition, though the method has been more widely adopted in Europe (Seidel, 1990; Nasar, 1999). A range of models exist: the competition may seek designs to be implemented and constructed, making it an alternative to the bidding and procurement process for site development, or it may seek only ideas for what a site could be, perhaps unbounded by politics or costs; a competition may be open to participation by anyone who might submit a proposal, or invitation-only for a select group of designers (Spreiregen, 1979). In any case, competition sponsors, who can be government bodies, institutions, or other property owners, typically provide competing designers with detailed descriptions of goals for the site to guide their design thinking, and assign a jury – often "modeled on the design juries of architecture schools" – to determine a winner among the submissions (Lipstadt, 2006).

The architectural design competition model has been applied to urban design challenges. Planning and urban design competitions generally address broader landscapes,

beyond the single-site scale, and seek ideas for transformation of areas that include or will include multiple owners and functions, rather than just single buildings. Unlike architecture competition submittals, urban design competition entries often come from teams that include representatives of multiple disciplines. Those teams face the challenge of creating cohesive interventions that serve complex terrains of public and private interests. Proposals at the urban scale are often inherently political, insofar as they involve “real or symbolic redistribution or regulation of territorial power, control and the rights of different social groups” (Sagalyn, 2006). Because of these complexities and the fact that most sponsors are unable to intervene on multiple properties at once – though competitions during the 1950s and 1960s period of urban renewal provided exceptions (Alexander and Witzling, 1990) – design competitions call for ideas more often than for construction proposals. There is a general acceptance of the fact that winning designs are meant to inspire but will undergo modifications prior to implantation.

Competition sponsors often select competitions over traditional bidding and procurement or consultation based on several long-perceived benefits. At the same time, the practice brings a series of challenges and frequent criticisms. In this section, I summarize both and describe the potential for further research on and development of the urban design competition.

Benefits

In the architecture field, the design competition has been touted as a method that fosters creativity, offers opportunities to unknown or experimental thinkers, and engages the public (Spreiregen, 1979; Malmberg, 2006; Volker, 2010). Architects have credited competition with bringing valuable attention to their profession as an art and design as a solution to challenges (Spreiregen, 1979; Nasar, 1999). Others note practical benefits, like the potential for competitions to increase fundraising potential for projects through publicity (Seidel, 1990). Although many benefits have been cited for the architecture profession and field, three stand out as relevant to the topic at hand, urban design competitions: (1) creative problem-solving, (2) publicity and fundraising, and (3) overcoming bureaucracy.

Perhaps most fundamentally, there is general agreement that the design competition format encourages creativity. By fostering a spirit of competition among participants and promising publicity to winning designers, architectural and urban design competitions are presumed to generate a range of novel design concepts and alternatives (Banerjee and Loukaitou-Sideris, 1990). Proponents can argue that their process and results stand in contrast to proposals generated through traditional, rational planning in which a single concept is refined over time. Open competitions "bring a wide point of view to focus on a particular problem" (Spreiregen, 1979), presumably resulting in superior solutions, or at least a range of unforeseen options for site development. Addressing resilience-focused design competitions specifically, a director of Louisiana's recent Changing Course initiative framed the perceived value of resilient design competitions similarly: "Very often when you have kind of vexing issues, you turn to competitions that inspire the very best to bring forth ideas that no one thought possible, and come forth with solutions that genuinely inspire people" (Cox, 2014).

Fig. 2-2: Two attention-grabbing proposals from the High Line ideas competition re-envisioned the raised rail platform as a swimming lane and a rollercoaster. Source: Friends of the High Line.

A second frequently cited benefit of design competitions that is especially relevant to the urban design scale is their potential to generate public support and funds for implementation. The design competition process for New York City's High Line highlights this potential benefit clearly. When the nonprofit Friends of the High Line, in 2002, launched an open competition for ideas on what preservation of and public access to the 1.5-mile raised rail line could look like, the sponsor had neither control of the site nor enough funding for a major award or implementation. The competition was seen as a way to not only generate new ways of thinking about a unique space, but also to build public support and to

raise funds for the organization's continued work. With over 700 entries and the opportunity to present them at a public exhibition, the organization credits the competition with sparking a public hearing and generating over $16 million in private donations (Hammond, 2005). The funds and publicity led to a second competition, this time cosponsored by the City government, through which a design team was selected and development of the modern elevated walkway began.

The High Line experience largely reflects the ideal for competition sponsors interested in projects that would require government intervention. Design competitions are often thought of as means of overcoming the complexity and indecision that typically impede large redevelopment ideas. The High Line team has noted that the competition and the public interest it generated kept it so that "the design track was always ahead of the politics," even "pulling the politics forward" (Hammond, 2005). Especially in light of broad challenges, like climate change, that demand creative problem solving and paradigm shifts, competitions have been seen as an antidote to the limits of bureaucracy (Alexander and Witzling, 1990). The Hurricane Sandy Rebuilding Task Force (2013) sought such an opportunity, noting that "[the Rebuild By Design] competition will help provide solutions to problems that are too large or too complex for individual towns to solve themselves."

Challenges

Design competitions, however, also have their share of critics. While many critiques of the format point to process details – for example, competitions often take longer and can cost more than traditional procurement or consultation (Spreiregen, 1979) – two concerns are more fundamental to evaluating the performance of design competitions as tools for city planning: (1) winning designs are not guaranteed to serve public interests, and (2) winning proposals are often impractical or difficult to implement.

Lynne B. Sagalyn (2006), writes critically: "Design competitions are commissioned for many reasons, almost none of which have to do with design and all of which have to do with

political motivations." From this point of view, the benefits described above related to generating public support for projects look more sinister. Sagalyn calls competitions "a relatively inexpensive way to serve their sponsors' larger political objectives," noting that sponsors can select sites and describe needs that are not in the public's interest, only to have designers essentially volunteer their time to generate ideas to address them. The creative designs that result can be promoted to build, rather than serve, a constituency (Sagalyn, 2006).

Others have implied that the selection of jury members for a competition can be tricky and political, and can result in disservice to the public interest. Spreiregen (1979) notes: "If a jury were to hold a utopian or futuristic vision, the competition would be little more than an exercise in fantasy. […] Nor can a town planning competition be fully successful if its jurors are more intent on pressing a single social, philosophical, or economic point than on selecting a practical yet advanced design, one which comprehends all these components." Nassar (1999) describes "a common phenomenon: the competition-winning building, praised by architects and critics, does not work; and the citizens, whose tax dollars paid for much of it, do not like it." Through a close look at the competition-winning Wexner Center for the Visual Arts at The Ohio State University, which received praise from architects but failed to stay on budget and required early repairs, Nasar (1999) critiques the typical competition format as being self-serving for designers and lacking opportunity for public input.

Critics also question whether competitions can be useful planning tools if they cannot guarantee implementation of winning ideas. While competitions can generate interest and support for redevelopment of a site or area, they may do so only without regard to realistic constraints. The risk of this occurring tends to be higher in planning and urban design competitions, often organized by sponsors who do not have full control of the sites being addressed or of the process by which these sites may be developed, than in single-site architecture competitions. Critics can point to the promises and complications of the early stages of New York City's World Trade Center site redevelopment design process, in which the

Lower Manhattan Development Corporation, a joint City-State entity, essentially hosted a competition to determine a master plan for land owned by the Port Authority of New York and New Jersey, which had simultaneously hired its own engineers and designers to address the area. A competition for designs of a Ground Zero memorial on a smaller portion of the site ran more smoothly and led to implementation, but also eradicated elements of the winning master plan (Sugjic, 2006). With cases like this, many see urban design competitions as wasteful and unrealistic.

Research Opportunities

Observers have noted a lack of systematic research on the topic of design competitions. A collective record of planning and design competitions does not appear to exist, meaning that we do not know the number or variety of competitions that have occurred, nor can we quantify any trends among them (Lipstadt, 2006). The architectural competition model has been documented over time through case studies, but urban planning and urban design competitions have not been so critically evaluated (Kahn, 2005). Looking at the research that does exist, some have criticized the trend of designers writing from their own subjective experience to ultimately promote the benefits of the competition model: “although formulated in objective terms, most assessments of the merits of and demerits of competitions are the product of a complicit relationship with the object under study, and a firm belief in its value” (Lipstadt, 2006). There is clearly a call for more objective research in the field, especially as a trend toward more planning and urban design competitions appears to be emerging.

More specifically, there may be room for research on the implications of design competitions from a public service perspective. Current literature has been written almost exclusively for an audience in the design field, overlooking people who live or work in competition-designed spaces. Questions such as whether competitions yield high quality design have typically been answered by design professionals and theorists rather than sponsors or citizens (Banerjee and Loukaitou-Sideris, 1990). Nasar (1999) highlights a lack of evaluation on

"how well the winning solution works for the consumer – the building inhabitants and the passerby." In his own analysis, interestingly, Nasar (1999) found that non-architects and architects alike tend to favor losing proposals over winning designs. As urban design competitions propose interventions that affect whole neighborhoods, cities, and regions, the need for research to address their effects on people outside the design community may grow.

Others have noticed a lack of research on the practical implications of design competitions or any systematic review of their results: "What happens after a competition is judged? […] [C]ertainly if political and economic forces are important during the competition itself, they really kick in after that" (Allen, 2005). Following up on the results and effects of design competitions is essential if we seek to improve the competition model or how it is used in planning decision-making.

2.3 Policy Change

Design competitions are promoted as a tool to challenge and change current practice in planning and design, and this thesis aims, in part, to test that promise. Specifically, I examine the potential for resilient design competitions to foster a shift to resilience thinking in long-term planning processes. The literature described in this section of the thesis explores the conditions needed to move government agencies forward on resilience and climate adaptation, as well as factors that can inhibit the potential for changes in planning practice. Design competitions, it seems, may be positioned to help governments overcome barriers to policy change and to contribute to this literature.

Fostering Resilience Planning

For most governments and planning agencies, the call to address climate change and plan for long-term resilience is relatively recent as well as daunting. There are few public institutions that serve as models for greenhouse gas mitigation policies and practices, and even fewer implementing resilience thinking in the planning and design process. This is due, in part, to the lack of national regulation that would compel state or local governments to consider the

uncertain element of climate change in their planning or development approvals (Anguelovski and Carmin 2011).

Through meta-analysis, Anguelovski and Carmin (2011) investigated the actions of local governments that are addressing climate change and found that several factors push cities to expand their traditional planning and policymaking practices in order to achieve resilience. Motivation to make such changes may be exogenous or internally generated. The experience of a natural disaster, significant storm damage, or other evidence of change such as increased temperatures and heat waves, can expose a city's vulnerabilities and demand long-term planning responses from the public sector. Governments may also recognize opportunities to demonstrate strong leadership or promote the city as forward-thinking and innovative by instituting planning processes or policies focused on resilience.

Anguelovski's and Carmin's (2011) research also highlights factors that support and challenge cities' attempts at climate-related planning and policymaking. Local champions for climate action, within or outside of government organizations, have led and maintained successful climate-related programs. In the absence of individual champions, high capacity government organizations may push for resilience as well. Tyler and Moench (2012) describe the qualities that organizations need to successfully support resilient planning, suggesting that governments should be able to reorganize and respond to disaster events quickly after they occur, should be able to access resources that will assist them in recovery, and – perhaps most important in the long term – should be able to "internalize past experiences, avoid repeated failures and innovate to improve performance; as well as learn new skills." Unfortunately, resources and capacity available for resiliency planning are often extremely limited, especially without federal support. And as discussed among the challenges to resilience described above, many local government have little to no experience working across borders with neighboring municipalities, which limits their abilities to share resources or ideas for recovery or resilience. These daunting challenges lead to the concern that changing government interests or providing

local agencies the capacity to change the planning or policymaking process "may not be any easier than modifying complex technical infrastructure systems" (Tyler and Moench, 2012).

Broader theoretical lenses on planning suggest that a supportive, engaged, and unified public voice may be critical to influencing institutions like public planning agencies to change their priorities or practices. From a communicative theory perspective, participatory planning and open, educational dialogue among citizens, planners, and technical experts is critical to social learning and building consensus on the need to transform a planning practice (Holden, 2008). Conditions of open dialogue on risks and potential responses to climate change and other vulnerabilities are seen as necessary to developing physically and politically implementable plans, policies, and designs to address the complex challenge of climate change; however, they rarely occur (van Herka et al., 2011). Research on sustainability-focused municipal planning processes finds that reliance on common planning practices, such as purely informational events, limits the potential for collaboration, social learning, and creative problem solving. A lack of public engagement and support poses challenges for the potential implementation of any plan proposed (Elbakidze et al., 2015), and the degree of public engagement and understanding of environmental risks can be a key factor in successful implementation of plans for environmental protection (Burby and May, 1998). It is widely agreed that long-term resilience planning and design proposals require elements of public education, participation, and influence in order to gain the popular support and resources needed for realization.

Opening a Policy Window

In determining under what conditions design competitions might influence local governments and agencies to adopt resilience as a planning priority, a political theory perspective serves to supplement the planning literature. Kingdon's (1984) theory of the "policy window" states that a confluence of three conditions must occur in order for a new policy or practice to be adopted by government. They are: (1) a clearly identified problem, (2) an

understanding of available solutions, and (3) substantial political will. Planners posit that participatory and collaborative learning processes are means of achieving each of these conditions (van Herka, et al., 2011). Advocates for design competitions, though, tend to promote ambitions quite similar to Kingdon's: once a problem has been determined and open to competition (condition 1), designers and design teams have the opportunity to put forth creative solutions that challenge the status quo (2) and, ideally, build public interest and momentum for change in the practice of planning and design (3) (Spreiregen, 1979; Malmberg, 2006; Volker, 2010). Could resilient design competitions be capable of opening policy windows for municipal planners addressing climate change? They certainly seem positioned to contribute to change in policy and planning practice. This thesis aims to contribute to theory by exploring how a resilient design competition affects participating municipal governments, and to what extent the experience may contribute to a turn toward resilient planning and design; in other words: the extent to which a competition can give us a "policy window" for resilience.

3

Methods

Like prior research on design competitions, as described in Section 2.2, this thesis employs a case study method to explore its question of how such competitions might serve as tool for planning in the face of climate change. Unlike the majority of past competition research, however, this thesis focuses not on the self-analysis of participating professional designers (Banerjee and Loukaitou-Sideris, 1990; Nasar, 1999), but on the benefits and challenges of design competitions for the public servants tasked with implementing climate adaptation strategies in their own cities and towns.

The primary cases in this study represent municipalities at the front lines of climate change that have recently participated in a major, well resourced design competition. Each of the three coastal municipalities is dealing with environmental and economic vulnerabilities as a well as storm recovery, and each served as a site for detailed urban design proposals in the federally sponsored Rebuild By Design competition in 2014. Interviews with municipal planners and elected officials involved in the RBD process provided qualitative data describing the effects that the resilient design competition had on their ongoing planning work and on local interest and engagement in climate change and design. The selection of those cases and data gathering methods are detailed further in this section.

3.1 Case Selection

The Rebuild By Design competition, described in Section 1.2, has provided a valuable opportunity for research on urban design competitions, due to its uniquely broad scope and regional scale, federal sponsorship, and incorporation of public participation. Recent theses have sought to determine the effects of public participation and problem solving through “design thinking” on designers’ generation of proposals in RBD (Shapiro-Kline, 2014; Elliot-Ortega, 2015). Although RBD has been frequently cited and reviewed, analyses tend to focus on

designers' and the public's experience during the design process, rather than on public sector stakeholders or long-term planning outcomes.

It is complicated, however, to use the RBD experience to generalize conclusions across other resilient design competitions or future competition-based initiatives, which are unlikely to operate at such a large, public scale or be supported by such significant financial resources. Because this thesis aims to launch a discussion and further research on the potential for design competitions to serve as effective tools for resilience planning, I have selected the primary case sites with RBD's unique elements in mind. I contend that the questions posed by this thesis are best addressed by examining the experiences of a particular set of RBD finalist proposals: the 'unfunded finalists,' or, effectively, the competition losers.

The unfunded finalists include the resilient design proposals of four design teams who participated in the complete RBD competition process, including public engagement and proposal refinement stages, but whose projects were not awarded "winner" status or substantial implementation funding at the end. Their experiences contrast with those of the six design teams whose proposals were named RBD winners and awarded implementation funding via Community Development Block Grant Disaster Recovery ("CBGD-DR") funds in June 2014 (79 FR 62182, 2014), as discussed in Section 1.2. The unfunded finalists provide a valuable research opportunity because they isolate design competition activities from implementation funding. The municipalities that served as pilot sites for design proposals in each of the unfunded finalist submissions went through the design competition and were left at the end with the proposals generated but not a fast-tracked route to implementation; leaders, planners, and citizens in those municipalities were able, after the competition, to return to business as usual, seek alternate means of design implementation, or take some path in between. Their experiences, unlike those of the municipalities whose designs won funding, may be investigated to see whether and how the design competition itself led to any changes in local planning or policymaking.

Once the set of potential cases was limited to the four unfunded finalists, an examination of each revealed complexities that rendered some of the proposals inappropriate to the scope or interests of this thesis. Briefly: (1) The HR&A-led design team proposed three pilot projects in its "Commercial Corridor Resiliency Project"; the sites covered multiple states, complicating prospects for comparison, and interventions highlighted policies and networks to support retail recovery with less focus on urban design (HR&A, 2014); (2) The "Resilient Bridgeport" proposal has a unique and complicated outcome, having actually received $10 million in CDBG-DR funding after the close of the competition to go toward continued analysis and realization of a pilot project to reduce urban flood risk (WB/unabridged, 2014; CT Dept. of Housing, 2015); and (3) the WXY/West 8 "Blue Dunes" proposal thought broadly about inter-state off-shore engineering solutions, and as a result lacked substantial local- or county-level stakeholder engagement – a critical element of the research questions posed here (WXY/West 8, 2014).

In contrast, the fourth unfunded finalist proposal provides three case sites appropriate to addressing a research question on civic learning through a resilient design competition. The overall concept, titled "RESILIENCE + THE BEACH," was submitted to RBD by a team led by the design firm Sasaki Associates and framed as a program to spark regional design solutions and collaboration among small, independent municipalities. The Sasaki team identified three at-risk typologies along New Jersey's coast and developed site-specific resilient design proposals to serve as replicable pilot interventions for each of them. These pilot cases are: (1) for the barrier island condition, a proposal for a new town center located inland to draw population and economy west as sea level rises, proposed in the area of Toms River, NJ; (2) for the headlands, or higher elevation exposed coast condition, a series of neighborhood-scale interventions to improve ecological function and water management, including a dune-supportive boardwalk and softening of inlet edges, proposed in Asbury Park, NJ; and (3) for the inland bay condition, a long-term proposal of targeted dredging and filling to address pollution and habitat migration as well as a need for open space, proposed across Keansburg, Hazlet,

and Union Beach, NJ in the Raritan Bay. Further details on each municipality and pilot proposal are described in Section 4. These three RBD experiences provide for a case study analysis in which the design team and state governance variables are held constant while local conditions, stakeholder responses, and post-competitions outcomes are comparable.

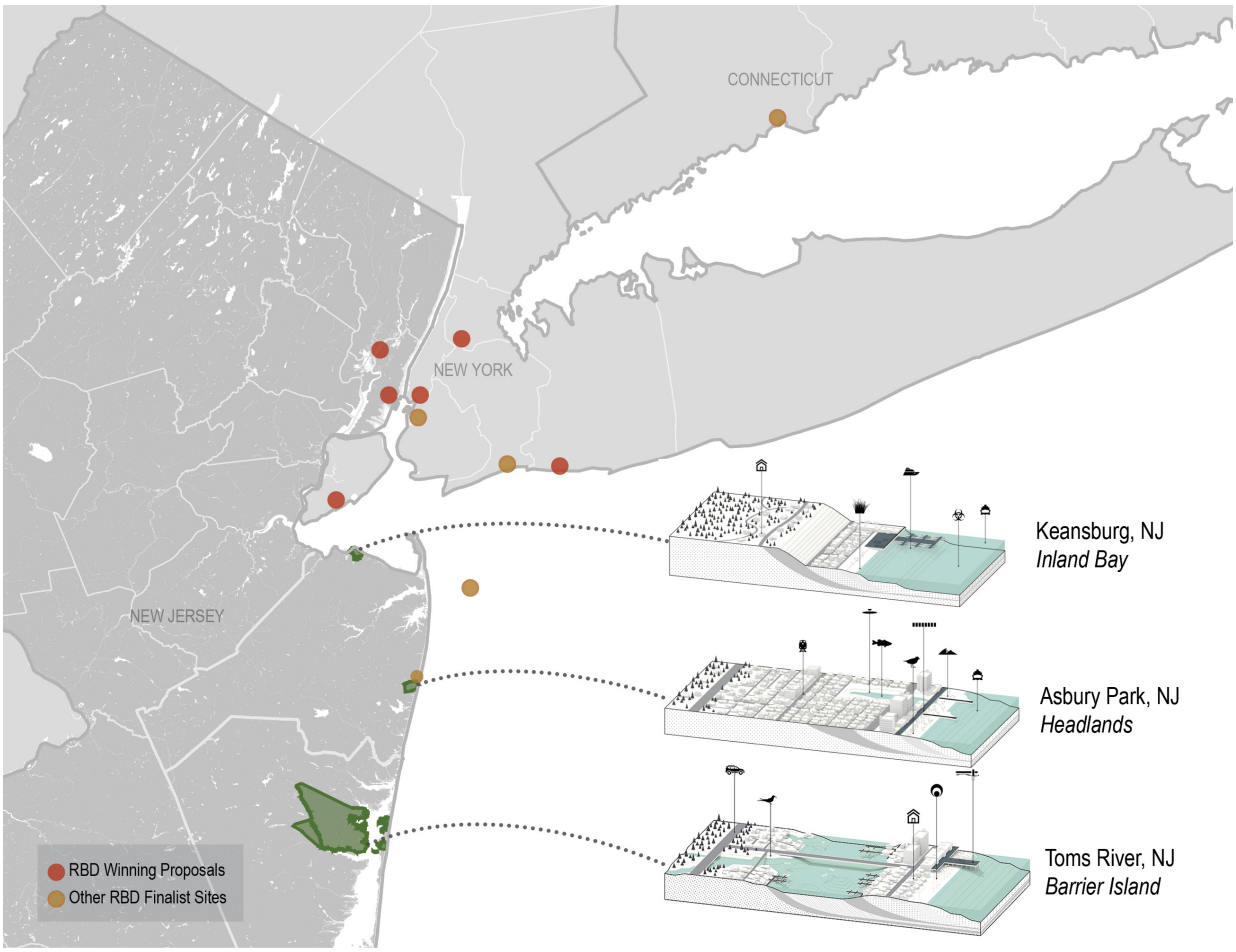

Fig. 3-1: Locations of selected case sites and coastal typology proposals.
Source (diagrams): Sasaki Associates.

3.2 Interviews

The goal of this research has been to uncover whether and how engaging with urban designers in a resilient design competition may help municipal planners and elected officials learn or find ways to change their approach to planning for climate change. I gathered qualitative data to address that question through a series of guided, semi-structured interviews

with public officials in each of the three primary case sites. These interview subjects were asked to reflect on their planning priorities and methods before, during, and after the RBD competition process. Interviews were also conducted with a representative of the Sasaki design team to provide context for the competition and further reflection on its effectiveness and challenges. Interview data was supplemented with master plans and other publications from each municipality, and with notes from RBD meetings where available; written records were especially helpful in filling in factual gaps where subjects were unsure of their memories of the process. The interviews, however, were most critical to understanding the impacts of design competition participation on planning and policy decision-makers.

Interview Subjects

The primary set of interviewees included municipal and county officials responsible for long-term planning in the case study municipalities. As noted, the research questions and scope of this thesis focused on determining the potential for ideas or methods generated through a resilient design competition to lead to planning actions in the absence of direct implementation funding. The most relevant data and reflections, therefore, would come from the planners and elected officials who had participated directly with the design team through the RBD process, and who would be in a position to propose or implement planning processes or other resilience actions after the close of the competition. Due to both the structure of RBD and the limited planning resources of these municipalities and counties, only two to three individuals representing each of these selected case sites were directly involved in RBD through the design process. Each source was initially identified from lists of key stakeholders provided in Sasaki's final proposal report (Sasaki, 2014a), then contacted via email or phone in December 2015. Interviews were conducted in person and recorded. Primary interview subjects are listed with the date and location of their interviews in the table below.

Case Site(s) Represented	Interviewee Title	Affiliation	Interview Date	Location
Toms River	Assistant Planner	Toms River Township	Tuesday, January 26, 2016	Town Hall Toms River, NJ
Asbury Park	Deputy Mayor	City of Asbury Park	Wednesday, January 20, 2016	Café Volan Asbury Park, NJ
Toms River	Director of Planning	Ocean County	Tuesday, January 26, 2016	Ocean Co. Gov. Complex Toms River, NJ
Keansburg	Deputy Mayor	Borough of Keansburg	Wednesday, January 20, 2016 *	Kauffmann Municipal Building Keansburg, NJ
	Construction Official, Flood Plain Manager			
Asbury Park, Keansburg	Assistant Planner	Monmouth County	Thursday, January 21, 2016	Monmouth Co. Records Annex Freehold, NJ

** Two Keansburg officials were interviewed jointly.*

In addition to the sources listed above, other stakeholders and potential case site representatives were contacted but did not return requests to be interviewed; these include the contracted planner for Berkeley Township (Toms River case) and the former administrator of Union Beach (Keansburg case). Their perspectives may have aided in understanding the role of design competitions in determining cross-boundary plans – an issue that could be addressed in future research. Future research may also be designed to evaluate the perspectives of members of the public from these and other design competition pilot project sites; however, that analysis was outside the scope and mission of this thesis.

Additional interviews provided further detail on the design process as well as comparison cases. Although the central intent of this research is to explore the experiences of public officials with design competitions, it became clear through several initial interviews that the civic participants alone were not best suited to provide certain context on the RBD process, including information on how the experiences of each case compared to a traditional design competition.

In an interview on Wednesday, February 3, 2016 at Café Mariposa in Cambridge, MA, a Sasaki Associates planner addressed questions about the RBD process and Sasaki's selection of sites and stakeholders.

Critical Topics

The series of interviews was designed to gain an understanding of the learning that took place among civic participants as a result of their participation in RBD. Here, "learning" refers generally to new design ideas, planning process innovations, implementation capacity, or change(s) in mission that these stakeholders may have gained from engaging in the process. Primary interviewees were not asked immediately what they believed they learned or gained from their design competition experience; rather, their interviews were guided by a set of questions designed to explore and compare their planning priorities and actions before, during, and following RBD. Interview guides are provided in Appendix 1, and several key topics are described below.

Mission and Priorities: Early in the interview, each public official was asked to recall his or her municipality's or county's planning initiatives and priorities prior to Hurricane Sandy. Due to the open format of the question and the interview, this question led to discussions ranging from economic development and construction to protective dune infrastructure and sustainability, as discussed in Section 4. Later, each was asked to describe planning and design initiatives that have been given priority since Hurricane Sandy and since the close of the RBD competition, particularly those that may not yet by stated in public documents like master plans.

The intent of these questions was to allow the municipal officials to present and reflect on any changes in their work or priorities and how those may be related to Hurricane Sandy, RBD, or other recent events such as the economic recession or changes in local or other elected leadership. This broad inquiry served to provide context for each case study site, particularly on public concerns unrelated to – or competing for resources with – planning, design, or climate change. It also contributed to analysis on the potential for design competitions

to inspire institutional change and prioritization of resilience planning, as discussed in Section 2.3, based on the particular challenges and public interests of each case site.

Resilience: In the hope of drawing conclusions about design competitions as potential teaching tools for climate risk and resilience planning, interviewees were asked to reflect on how their organizations, administrations, or municipalities conceptualized resilience before and after Hurricane Sandy and RBD. These before-and-after questions were posed separately, as all questions about planning activities prior to Hurricane Sandy were asked before discussion of the RBD experience or post-Sandy planning; thus, interviewees were not asked directly to postulate how any specific experience influenced their idea or use of the term. Still, it turned out to be challenging for some interviewees to provide any answers about their concepts of resilience – some expressed hesitation, for example, and one requested to know how others had responded before answering. More specific questions about how the municipalities considered climate change, sea level rise, and storm risk before, during, and after RBD yielded reflections that were more concrete and therefore more helpful to the research. These responses assisted in evaluating the impacts of the design competition and its participatory and educational components on public concepts of resilience and climate change response options.

Collaboration and Relationships: Municipal planners and elected officials were also asked more targeted questions about their planning processes and actions before and after RBD. One topic that elicited a range of responses was collaboration and resource sharing. Interviewees were asked to share the names of any other agencies or organizations, public or private, that they would regularly work or be in touch with while conducting planning-related work prior to Hurricane Sandy. When asked to reflect on the same question in relation to their work since the completion of RBD, several interviewees reported significant shifts.

This line of questioning arose from ideas developed by literature on resilience and design competitions, presented in the previous section of this thesis. As described in Section 2.1, a regional perspective on vulnerability and solution generation is considered an essential

component of successful resilience planning (Tyler and Moench, 2012). As part of a home rule state, small New Jersey shore towns have little experience or opportunity to share resources with neighboring municipalities (Mandelker et al., 2011). But design competitions like RBD, promoters claim, are positioned to uncover cross-boundary solutions and encourage collaboration, as exemplified in Section 2.2 (Hammond, 2005; Hurricane Sandy Rebuilding Task Force, 2013). Asking the municipal officials to reflect on their experiences with regional planning and home rule since RBD and Sandy proved interesting and helpful in evaluating how claims of the design competition literature played out in these cases.

Looking Ahead: Interviewees were not only asked to reflect on their planning and resilience work before, during, and since RBD, but also to consider potential future actions in light of their design competition experience. Specifically, they were asked if they would seek opportunities to work with urban designers again, and if, given the chance, they would engage in another design competition. The intent of this question was not only to encourage them to think critically about their RBD experiences, but also to elicit their ideas on what, if anything, might have to change in the design competition process to improve its effectiveness for municipal planners and officials. Municipal officials' and planners' responses to this question also served to address broader challenges of resilience planning that the traditional competition is not structured to address, as discussed in Section 5.2.

The interviewees were also asked directly if they expect to pursue or practice any proposals or techniques developed but not funded for implementation in the RBD process, and they were given the chance to respond openly about why they found some of the design team's ideas and activities better suited to the future of their municipalities than others. Their reflections shed light and provided detail on both the opportunities and challenges that design competitions present for public planning institutions.

Through these interviews, elected officials and planners were able to discuss their missions, resources, visions, and challenges with regard to storm preparation and resilience

planning. Representatives of Asbury Park, Keansburg, and Toms River described three different experiences with Rebuild By Design, distinct in elements including their degree of public engagement and ambitions of final proposals. The information and reflections these public servants provided brought to light specific ways in which the design competition can contribute to local resilience planning along with specific limitations of the competition method. The next two sections of this thesis provide the stories of these municipalities and the lessons derived from their experiences.

Although each of the three cases studied here represent the same design competition and lead design team, their experiences before, during, and after RBD are distinct and comparable. Through interviews and review of published planning documents, it became clear that these cases represent municipalities whose awareness and pursuit of storm surge and flood protection methods varied significantly prior to Hurricane Sandy. The level of public and civic official engagement in each of the case's RBD processes also varied, from fairly standard public meetings and visioning events to over-capacity public discussions and even a citywide rally. The final design proposal for each case site also ranged significantly in scale, ambition, and ultimate cost. This section describes the relevant experiences of each of the three case sites, including their current conditions and vulnerabilities, participation in RBD, final resilient design proposals, and planning actions since the close of the competition.

For reference, a brief comparison of each municipality's profile is provided below:

	Township of **Toms River**	City of **Asbury Park**	Borough of **Keansburg**
County	Ocean	Monmouth	Monmouth
Governance	Mayor and Council	Mayor and Council	Mayor and Council
Size (Land)	40.5 sq. miles	1.4 sq. miles	1.1 sq. miles
Population	91,700	15,900	10,000
Median Household Income	$72,900	$32,500	$43,700
Pop. Below Poverty Line	6.6%	32.0%	16.8%
Pop. Over 65	18.2%	10.6%	12.1%
Pop. Non-White	10.5%	64.4%	27.2%
Seasonal / "Second" Homes*	16.1%	3.4%	1.3%

** Seasonal vacancy rate last tracked in 2010 U.S. Census.*
All other data gathered from 2010-2014 ACS.

Fig. 4-1: Locations of case study municipalities.

4.1 *Barrier Island*: Toms River, Berkeley, Seaside Heights

Like many residents of the New York region, I know Toms River, New Jersey from the news coverage. Ever since Hurricane Sandy battered the majority of homes in the Township's Ortley Beach neighborhood – a small area built on barrier island sand – media crews have returned there frequently to check up on rebuilding progress and any impacts from more recent storms. Just days before my interviews in Toms River, I had been warned I might need to reschedule, as a snowstorm – a nor'easter named Jonas – threatened wind damage and flooding. While Jonas was certainly not "another Sandy," its images of dune erosion and local services mobilized for evacuation reiterated Sandy's lasting effects and the unsustainability of storm-by-storm planning practice.

Site Conditions

Ocean County, New Jersey is defined, in part, by a unique natural feature and by the culture built around it. Nearly all of the county's 50-mile oceanfront coastline takes the form of a barrier island – a narrow strip of sandy ground that buffers that mainland from the Atlantic Ocean. The northern portion of the barrier island, called Barnegat Peninsula, is densely developed with homes and businesses driven by summer tourism. It is home to some of the classic imagery and memories of the Jersey Shore, including boardwalk amusement areas like Seaside Heights. The Seaside area represents a common typology of New Jersey coastal development in which the economic core of the region is a pedestrian-focused recreation and entertainment area facing the beach. The rest of the town beyond the easternmost blocks is almost entirely residential. Like much of the New Jersey shoreline, the homes are mostly modest and densely packed, and have often been held by families for multiple generations.

Fig. 4-2: Toms River, Berkeley, and Seaside Heights area, existing conditions. Source: Sasaki Associates.

West of the barrier island lie the brackish Barnegat Bay and another set of waterfront towns, including Toms River and Berkeley. Though not immediately oceanfront, these towns and others like them also depend on seasonal revenue and are home to many second or shared family homes as well as a significant senior citizen population (Ocean County, 2009). They have access to riverfronts and historic, walkable downtown areas. The Garden State Parkway, providing easy car access for commuters and vacationers, heavily influenced the towns' midcentury population growth and dominant single-family suburban form (Ocean County, 2012). Routes 9 and 37, which bisect Berkeley and Toms River, respectively, have also fostered sprawling commercial retail, providing some economic activity away from the coast but not resulting in significant residential development. To the west of the Parkway lies the state- and federally-designated Pinelands Area, or Pine Barrens, where natural habitat preservation is a priority; a protective charter limits development to only those buildings and projects that can pass environmental impact review. In sudden contrast to the dense and busy boardwalk towns

and suburban development nearby, the Pinelands are rural in character, defined by forests, wetlands, and residential farms.

In recent years, Ocean County and towns like Toms River have primarily pursued planning initiatives related to employment, housing, and downtown development. Some of their concerns and ambitions are enumerated in the 2011 Ocean County Comprehensive Master Plan, a non-binding guide for municipal planners and County legislators. There, the Ocean County Planning Board describes opportunities to address public issues like low wages and long commute times through economic development and job training investment, as well as targeted public transit initiatives to foster regional access and support the creation of new employment centers. Planning priorities also include fostering the transition of ubiquitous large retail sites and surface parking lots; the County expresses interest in mixed-use development and design that encourages pedestrian activity. With aging suburban housing stock spread across towns, the master plan also brings up concerns about the appropriateness of this type of development for the region's growing portion of elderly residents (Ocean County, 2012).

Prior to Hurricane Sandy, Ocean County's environment-related planning initiatives tended to focus on open space preservation and, in Toms River, energy and resource efficiency. Neither climate change nor the risk of unprecedented storm events is mentioned directly in the 2011 County Master Plan, produced one year prior to Hurricane Sandy. The 2011 Plan's recommendations related to storm protection largely reflect historic practices, including dredging and sand replenishment in eroding shoreline areas. The 2011 Plan highlighted one county program, the Natural Lands Trust Fund, as an opportunity to reduce the impacts of waterfront flooding by placing flood prone areas in public ownership, though the program at that time had primarily funding the preservation of rural farmland areas rather than coastal zones (Ocean County, 2012). In Toms River, sustainability initiatives organized by town officials prior to Hurricane Sandy primarily focused on finding opportunities for building efficiency and energy cost reduction, rather than risk abatement or resilience (interview, January 26, 2016).

The experience and impacts of Hurricane Sandy proved eye-opening for Toms River and Ocean County in October 2012. Sandy left small tourism-dependent towns suddenly under water and without many of the institutions that had defined them for a century prior. The Barnegat barrier island suffered some of the heaviest structural and economic damage. In Seaside Heights, 60 percent of homes were significantly damaged by flooding or wind, and the town lost most of its iconic boardwalk and oceanfront businesses, including its Casino Pier amusement rides; the drowning of a classic Seaside rollercoaster was widely adopted as part of a popular call to rebuild. Toms River reported 1,000 home demolitions as a result of Sandy-related damage, with hundreds more impacted. While structural impacts from wind and water were primary concerns on the oceanfront, inland towns like Toms River saw high rates of homes lost to mold as a result of stagnant floodwater (meeting notes, January 30, 2014).

Fig. 4-3: Sandy impacts to Seaside Heights. Sources: (L) AP/Yahoo, (R) AP/vosizneias.com.

In selecting the Toms River-Berkeley-Seaside area as a pilot site for its RBD proposal for the Jersey Shore, Sasaki Associates noted that the barrier island area represents among "the most vulnerable coastal typologies to sea level rise and storm surge," and simultaneously "the most valuable places in terms of beach tourism" (Sasaki, 2014b). Areas of dense inhabitation on the low-lying barrier island present the highest risk for flood damage. Based on a projection of 31 inches of sea level rise, 24 percent of the area's population and 37 percent of its housing stock are estimated to be at risk for storm flooding by 2050. More immediately, nearly

all of the area's regional economic assets – tourism-driven commercial and retail institutions along or near the busy boardwalk – lie in coastal flood hazard zones today (Sasaki, 2014b).

RBD Experience

The Sasaki team selected pilot sites and began working through potential design solutions during Phases 1 and 2 of the RBD process, as described in Section 1.2. Phase 3 consisted of engagement with municipal officials, the public, and other stakeholder groups with the goal of refining the design proposals to meet local needs. Toms River officials did have a chance to meet with members of the Sasaki team in 2013 prior to Phase 3, during an RBD-related tour of Ortley Beach, a part of the barrier island that lies within Toms River Township. A Toms River Township planner recalls the design team discussing opportunities for flood protection and green infrastructure in that early meeting (interview, January 26, 2016). The director of planning for Ocean County, said that County officials were not very aware of RBD's work until they were contacted by Sasaki and asked to participate in December 2013. Despite a lack of familiarity, the County was intrigued by the unique opportunity and excited to participate in the design competition process: "After Sandy," the planning director said, "there was a number of different programs, initiatives and so on, and we were sort of interested in all of them. So we immediately said 'Yes, we'd be happy to participate.' It was something new to us, but we were interested in – 'Let's see where this goes'" (interview, January 26, 2016).

Planners representing Toms River, Berkeley Township, and Ocean County, participated in RBD through meetings held in January 2014 and follow-up communication with the design team. On January 30 of that year, members of the Sasaki design team were in Toms River for closed meetings with the civic stakeholders and an open public event the same day. The meeting with public officials involved discussion of Sasaki's preliminary design ideas, including the team's identification of a 700-acre periphery site in Berkeley Township with the potential to be redeveloped as an inland economic hub with a focus on ecotourism (meeting notes, January 30, 2014). The public meeting, held on a Thursday evening in Toms River Town Hall, was

formatted as an open house in which Sasaki solicited feedback and ideas from members of the public. The planner from Toms River remembers being concerned about attendance at a January meeting given the town's reduced population in the winter months, but many interested residents did participate. She recalls conversations among residents and designers more focused on opportunities for redevelopment around historic downtown resources in Toms River than on specific ideas for the Berkeley site (interview, January 26, 2016).

Resilient Design Proposal

Following some additional communication between designers and the Town and County in the months that followed, the Sasaki design team completed and presented its final proposal to the stakeholders and RBD organizers together in April 2014. The team's design for the barrier island condition focused on the idea of pulling residential and economic activity westward to higher ground, maintaining the Berkeley sand-mining site as the proposed "new town center." In its final iteration, Sasaki proposed re-envisioning this site as a mixed-use attraction by seeding it with 5,000 year-round and seasonal housing units, retail and commercial development, and a "civic node" featuring entertainment and educational opportunities, including a "resiliency center." Other parts of the same area would be designed to foster ecotourism as a new economic engine for the region. Ecotourism areas would include accessible conservation zones; areas for hiking, fishing, and boating; and "ecologically-oriented lodging areas" like cabins and campsites (Sasaki, 2014a).

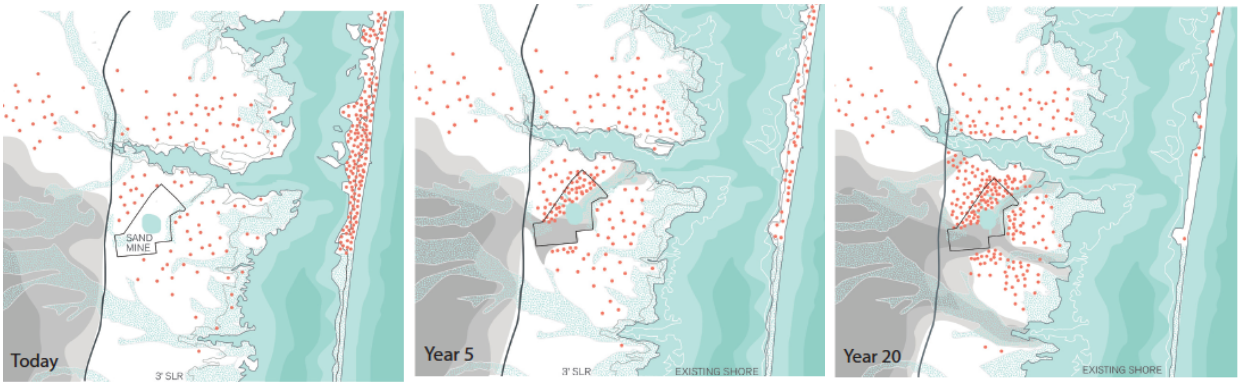

Fig. 4-4: Proposal to transition density and activity. Source: Sasaki Associates.

Outside the new mixed-use center, Sasaki proposed regional interventions to support the area's structural and economic integrity. With the barrier island likely to diminish as the ocean rises, the design calls for wetland creation on the edge of the bay, which should serve as a buffer between storm impacts and the inland cities. Area transportation improvements are also highlighted in the proposal, including a new highway off-ramp to the new town center as well as an aerial tram to bring people from the mainland for visits to the beach the barrier island. The island itself, once the center of regional activity, is proposed essentially to return to a natural state that would allow it to fluctuate in size and location while it protects lands on west of the bay from severe storm damage.

Together, these elements form a proposal for an ecologically determined future for the Seaside area and others like it. Broadly, Sasaki describes its proposal as a regional design scheme to connect "pier-to-pinelands" (Sasaki, 2014a). The design calls for the relocation of coastal neighborhoods to allow natural elements to serve as protective infrastructure for inland areas, and for people to rediscover the economic and recreational opportunities of inland landscapes through ecotourism, while still providing some access to the barrier island beach. This proposal represents a substantial departure from current suburban and seasonal conditions of the Toms River area, and it promotes a design response to climate change at a scale not often considered by public leaders.

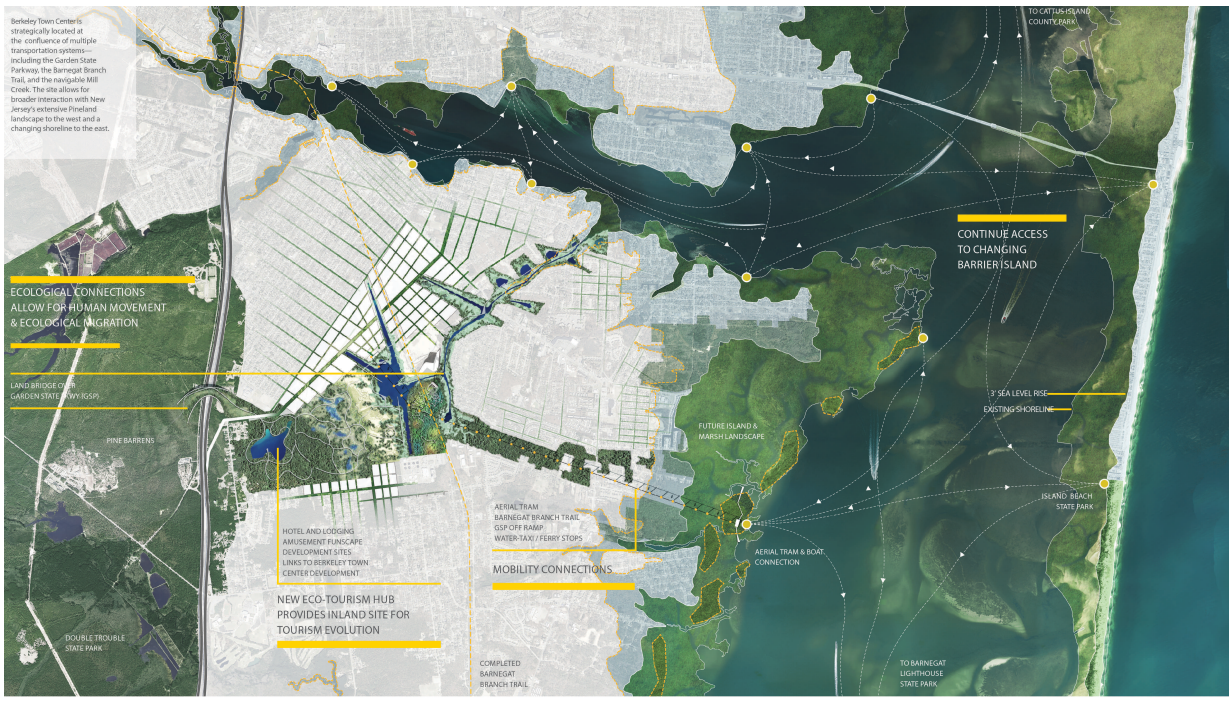

Fig. 4-5: Proposed conditions for the Toms River, Berkeley, and Seaside Heights area. Source: Sasaki Associates.

Fig. 4-6: "Funscape" rendering; ecotourism activities. Source: Sasaki Associates.

Post-RBD

When this ambitious design proposal for Toms River, Berkeley, and Seaside did not win funding for implementation, Town and County planners were not completely surprised. Although some of the proposal's overarching concepts were consistent with the priorities that municipal

officials expect to pursue in a post-Sandy planning environment, the design itself seemed infeasible and lacking in local context. From the County's perspective, the planning director, felt the design team identified key opportunities for the assets and development areas in the inland communities, including the potential for ecotourism to serve as a more consistent and sustainable economic driver than the summer beach season (interview, January 26, 2016). The Township planner agreed that economic diversity has been a central goal in Toms River since Sandy exposed the vulnerability of dependence on seasonal tourism, retail, and hospitality (interview, January 26, 2016).

The ecotourism-centered design, however, felt to the local planners like a vision without an implementation plan, and perhaps an outsider's vision at that. The County planning director said he understood the need for significant steps like managed retreat from the shore, but the proposed design vision seemed too "futuristic" without helping him see what kind of steps it would take to get there:

> "It didn't make it clear as to how you're going to get from point A to point B. […] How are you going to deal with the fact that you've got wall-to-wall houses and businesses and infrastructure there now? How do you get from this, to […] the amusement feel [of] aerial tram cars going over the bay to just visit the beach? […] Where's the meat in what anyone would fund? I don't know what the next step is" (interview, January 26, 2016).

The County and Town planners both expressed frustration with the process as much as the result. They each noted that, as stakeholders, they contributed their ideas and concerns to the design team where possible and heard residents doing the same at the public meeting. These ideas, which included ferry service between inland towns and the barrier island as well as a recreational path along the Toms River, were smaller in scale but seemingly consistent with the design team's aims of enhancing mainland activity and transportation. The County planning director described such ideas as "stepping stones" for larger long-term resiliency concepts that are potentially implementable today (interview, January 26, 2016). The Toms River planner felt that such ideas were ignored because the design team had a preconceived notion of a plan for

the area, particularly the development site in Berkeley, with little room for local input. The result, she noted, is a design that is not only difficult to imagine implementing but also one lacking awareness of local culture. As a planner in Toms River, she disagrees with the designers' assertion that inland ecotourism connected to the Pinelands could successfully replace the beach as an economic driver. Sasaki's idea of "bringing the beach in" toward the Pinelands through design elements like boardwalk features fell flat with the Toms River planner, and she expects they would with residents and visitors as well, because the beach and the Pinelands have long been seen as very different places that welcome very different activities (interview, January 26, 2016).

Toms River and Ocean County have both been active since the close of RBD in pursuing other opportunities to plan for a resilient future. The Township planner described her response to the RBD funding decisions as a quick one: "It's like playing the lottery. You play the lottery because you want to be in it. […] You envision all the changes that could happen, and then [it's] a big letdown, […] and then [you] move on with your life, and that's it" (interview, January 26, 2016). And the Town certainly had a lot of resilience work to keep it busy. As a member of Together North Jersey, a regional consortium of towns that was initiated by Rutgers University and supported by a Sustainable Communities Regional Planning Grant from HUD, Toms River, in partnership with Ocean County and Berkeley among other towns, was able to secure a $90,000 grant and consultant for a planning study focused on redevelopment of the Route 37 corridor. The study, completed in May 2015, provided plans and recommendations for diversifying the towns' economic base and fostering infill development to centralize resources and services (Together North Jersey, 2015), and the Town has pursued further state funding for related actions including further transportation studies and zoning amendments (Township Council, 2015). A separate grant has supported the Town's investigation of the impacts of sea level rise on existing neighborhoods. The Town is working on renewing its master plan this year as well, and that will include information on community vulnerability and hazard mitigation as

well as the results of a zoning study on the Toms River segment of the barrier island (interview, January 26, 2016). At the County level, the planning director also reports a wave of resilience-driven work and projects, including an active partnership between the County's planning office and emergency management office to keep the regional hazard mitigation plan up to date (interview, January 26, 2016). In February 2015, the County released a Long-Term Community Recovery Plan (Ocean County, 2015) which, among other proposals for infrastructure improvement and public preparedness, does include a description of the potential bay ferry service discussed in the RBD process.

It is clear that Hurricane Sandy and a new sense of urgency with regard to resilience have guided the work of planners in the Toms River area and will for years to come. "Changing the way things are done is going to be permanent now" in terms of post-Sandy planning practice, the County planning director reported (interview, January 26, 2016). For local planners, Rebuild By Design seems to have been just one of many post-Sandy initiatives, others of which yielded more manageable proposals and funding to implement them. Follow-up work has focused more on traditional planning tools than on opportunities for solutions through urban design. The Sasaki proposal represented an unprecedented scale of redevelopment, and it did not achieve a level local support that could have made it more impactful in the absence of federal funding. But as Toms River remains an epicenter for regional media coverage of storm risk, erosion, and flooding, perhaps ideas generated through RBD represent the level of action required to address a changing climate.

4.2 *The Headlands*: Asbury Park

I know I am far from the first researcher to approach Asbury Park in recent years; the place is interesting from several perspectives. It offers a story of economic boom, bust, and regeneration, portrayed all at once along downtown streets lined with grand historic buildings, some vacant and others boasting hip coffee shops, restaurants, and art galleries. Its population and tax base have been growing, gradually, as condominium complexes have filled in large

gaps in coastal real estate. I have visited Asbury's boardwalk for years, more often recently as food and retail vendors have started to fill in decades-long gaps there as well. But a history of racial and socioeconomic tensions underlies the city's recent changes, and the inequity of public and private redevelopment initiatives since the 1970s also begs for investigation. For this thesis, though, I see a city that has prioritized economic development above all else for decades suddenly, in a post-Sandy era, beginning to consider the sustainability and resilience of its redevelopment patterns.

Site Conditions

Asbury Park, about 25 miles up the coast from Toms River, is another destination shore town for many, but it has a history and set of challenges all its own. It is located directly on the Atlantic Ocean in lower Monmouth County, where no barrier island breaks waves before they reach the beach; this represents a headland coastal typology. Less than two square miles in size, the city is largely made up of single-family homes and has some but not all of its economic activity located along an oceanfront boardwalk. While restaurants, shops, and music venues support a visitor economy along the boardwalk, Asbury Park also features a downtown district about a half-mile inland. The city promotes not only its beach but also its longstanding position as a regional hub for music and art. Asbury Park has experienced significant investment and economic growth in recent years, but has long struggled with socioeconomic and geographic disparity among its diverse population.

Asbury Park developed originally as a resort destination in the late 1800s, and much of it still reflects that past. Victorian homes line Asbury's grid of wide streets, though many have been subdivided into multi-family buildings, and two grand Beaux-Arts style structures, one an active, restored theater and the other a gutted former casino, still bookend the busiest stretch of Asbury's boardwalk. Other cultural icons still in operation include music venues like the Stone Pony, a favorite spot of Bruce Springsteen's from the 1970s through today.

Fig. 4-7: Asbury Park beachfront existing conditions (2014 photograph). Source: North Jersey Aerial Photography.

But Asbury Park also still bears scars from a long economic downturn and social unrest. The city began to lose its destination status in the 1960s, when the Garden State Parkway provided new regional access to other shore towns and the development of shopping centers pulled commerce away from areas like downtown Asbury. In July of 1970, a week of destructive race riots exacerbated the white flight and urban disinvestment already affecting Asbury (Cheslow, 2003). The boardwalk and downtown areas struggled as well and suffered significant vacancies through the 1980s and 1990s. Today, the regional train tracks that bisect Asbury Park still serve as a de facto socioeconomic dividing line, with rates of minority residents, poverty, and vacant lots much higher on the city's west side than on its east. It is primarily the east side that has received renewed attention in recent years, a revival sparked in part by an influx of gay residents – many unconcerned by the city's struggling school system – that is beginning to buy, restore, and settle in Asbury Park's historic housing stock around the early 2000s (Cheslow, 2003). Investment in the boardwalk and easternmost blocks has followed; while restaurants and shops have returned to storefronts along the boardwalk and Ocean Avenue, large vacant areas have been rapidly replaced by condominium complexes.

To address historic vacancies and a series of failed redevelopment efforts, recent government administrations in Asbury Park have prioritized development above other potential planning efforts. In a 2002 Waterfront Redevelopment Plan the City called for over 3,000 housing units to be built or reconstructed on blocks along the ocean and retained a master developer to address the 50 acre area, much of which sat vacant from failed redevelopment

efforts in the 1980s (Kamping-Carder, 2016). That plan has come to fruition more recently, with condominium buildings and townhouses having filled in empty parcels, and construction of hotels and commercial properties ongoing. The City's 2006 Master Plan states more general goals for housing, economic development, transportation, and environmental conservation across the city, including rezoning recommendations to encourage economic growth in designated redevelopment corridors and to preserve the scale and historic character of certain residential areas (Asbury Park, 2006). Asbury Park has no current guiding planning documents describing opportunities for sustainability or resilience beyond energy efficiency or stormwater drainage infrastructure (interview, January 20, 2016).

Asbury Park's climate-related risks are certainly complicated by its socioeconomic vulnerabilities and development trends. The damage the city suffered from Hurricane Sandy included substantial structural loss of the boardwalk and adjacent businesses, lengthy power outages, and costly debris cleanup. Compared to the barrier islands further south, and to other low-lying surrounding communities, Asbury's Sandy experience was minor in impact. Sasaki (2014b) noted, however, that with expected sea level rise, 21 percent of the Asbury Park's population and 28 percent of its housing stock are estimated to be at risk for storm flooding by 2050. Increased flooding is already being reporting on a relatively regular basis in Asbury Park – not on the ocean, but inland. The city is bordered to its north and south by two inland lakes, and it contains another lake in a public park. Asbury Park's deputy mayor associates recent flooding around these lakes with not only larger storm events but also with a significant reduction in permeable surface that would allow for water recharge due to nearby development (interview, January 20, 2016). Local socioeconomic conditions exacerbate these stresses and pose challenges to resilience; with 30 percent of its population living below the federal poverty line, Asbury Park would likely see high demands for basic resources during a storm or other damaging event.

RBD Experience

Perhaps due to its unique confluence of conditions – including a vulnerable coastal typology, socioeconomic diversity, and an iconic position in the culture of the Jersey Shore – Asbury Park was actually pursued by two separate design teams as part of the RBD competition. Although this thesis focuses on the Sasaki design team's efforts, it is worth noting that the deputy mayor and others in Asbury Park were simultaneously in touch with representatives of the firm HR&A, which featured Asbury as a pilot site for resiliency measures focused on commercial corridors.

For its part, Sasaki's engagement with the public and municipal stakeholders was unique in Asbury Park compared to its other two sites. Although the design team reached out to and met formally with Monmouth County planning staff in January 2014 to discuss the RBD process and preliminary ideas as well as ongoing county planning work for Asbury Park and Keansburg, subsequent meetings between Sasaki and municipal staff or officials were focused not on design or planning but on preparation for major public engagement events (interview, January 21, 2016). Both the deputy mayor and a planner for Monmouth County, also interviewed, recall being focused on logistics and information gathering for the design team – providing designers with earlier municipal plans, for example, or assisting them with local public outreach.

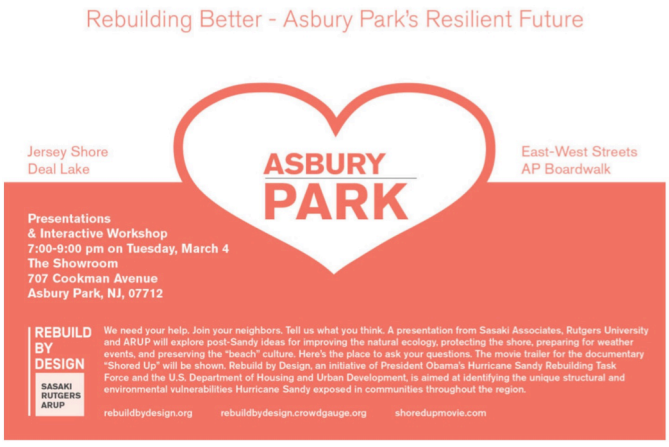

Fig. 4-8: Notice of Sasaki's first public meeting for Asbury Park, which became two events due to high interest. Source: RBD.

With the City's and County's support as well as resources provided by Rebuild By Design headquarters, Sasaki held two public meetings and a parade and rally event during the final phase of

design for Asbury Park. The public meetings were held back-to-back on the evening of Tuesday, March 4, 2014. Only one presentation was planned, but when it became clear that interest exceeded the capacity Asbury's Showroom theater, where the event was being held, the Sasaki team decided to shorten the program and hold it twice (Bartlett, 2014). While residents had time to voice some questions and concerns about details of the design ideas, like their impacts on street widths, the overall level of enthusiasm and interest from Asbury Park residents was encouraging to the design team and municipal officials (interview, January 20, 2016). The design team, RBD organizers, and municipal staff followed that momentum later that month with a rally and parade event in Asbury Park. The event, titled Rebuild One City, was intended not only to build more support and interest in RBD, which would be coming to a close with final designs presented shortly thereafter, but to put into practice one of Sasaki's key design ideals: the connection of the west side and east side of Asbury. With support from Van Alen Institute, a partner in sponsoring Rebuild By Design, Sasaki worked with County staff to secure participants and activities for a community march across the city to the boardwalk (interview, January 21, 2016).

Participants included community and youth groups, religious organizations, city representatives, and several local and regional nonprofit organizations such as Clean Ocean Action and the American Littoral Society. At a culminating event at a boardwalk restaurant, the design team and stakeholders shared the proposed designs for Asbury along with other educational materials on storms, flooding and ongoing resilience initiatives in the area (interview, January 21, 2016).

Fig. 4-9: An image from the Rebuild One City event, Saturday, March 22, 2014. Source: RBD.

Resilient Design Proposal

The design team's final proposal for Asbury Park contained three distinct elements: (1) a reimagination of the boardwalk, (2) a return-to-nature for the hard edges of the city's inland lakes, and (3) beautification and addition of flood control elements to streets that connect the city's west and east sides. Each of these ideas links a new, distinctive design elements with a clear function for resilience. In the proposal for the boardwalk, parts of the traditional straight path would be replaced by a wooden walkway that fluctuates in shape and width. This new structure would capture and anchor sand that would, eventually, serve as a protective dune and a habitat for beach wildlife. The design team identified less-developed parts of Asbury Park's boardwalk that are better suited to pilot a new design, and recommended more minor retrofits to its existing commercial center. Such retrofits would focus less on fostering a complete natural dune system and more on "creating social spaces and protection through redesign of the boardwalk's edges" (Sasaki, 2014a). This redesign aims to maintain the boardwalk's cultural and economic role but also distinguish it from the rest of New Jersey's boardwalk system in a way that "build[s] resiliency as well as civic charm" (Sasaki, 2014a).

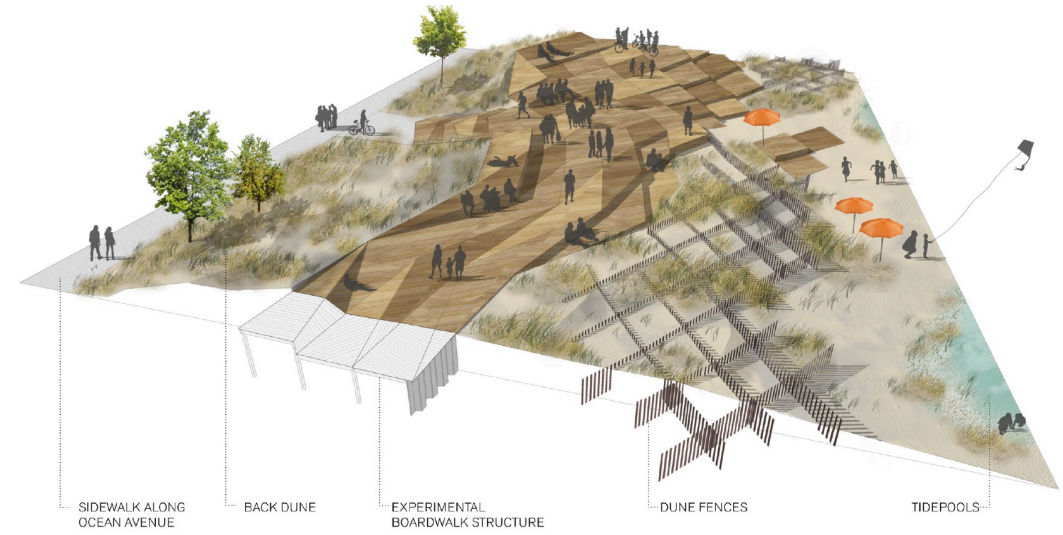

Fig. 4-10 and 4-11: Views of the proposed boardwalk redesign and retrofit;
Fig. 4-12: Technical detail of new boardwalk's dune-fostering system. Source: Sasaki Associates.

The proposal's second design element moves inland and focuses on the three lakes that lie within or border Asbury Park. As described above, City officials report increased flooding at the margins of these lakes, especially in new development areas. Sasaki proposes removing the lakes' hard, bulk-headed edges to create permeable, sloping shorelines. This seemingly simple adjustment would provide several benefits, according to the designers, including

restoration of native vegetation and habitat for birds and other animals, improved stormwater management and purification of runoff, and the opportunity to install boat launches or other space for water recreation and fishing, which is a popular activity “across racial and ethnic groups” in many New Jersey lakes (Sasaki, 2014a). The design team suggests piloting the changes around Deal Lake, which is on Asbury Park’s northern border and is managed by a multi-town commission, before moving on to others.

The final element of Sasaki’s proposal for a resilient Asbury Park is most clearly a call for formal unification of the long-divided west and east sides. The design team focused on the city’s east-west corridors, particular the central Third Avenue, that run from west side neighborhoods to the beach. The proposal describes opportunities to retrofit these corridors into “hyper-absorbent streets” by removing pavement and adding landscaping to the edges and medians. This kind of hydrophilic design should support local stormwater management and flood risk while also better serving residents as well as businesses by slowing traffic and improving pedestrian conditions (Sasaki, 2014a). Like the boardwalk and lake retrofit designs elements, the absorbent street proposal derives new resilient function from a relatively minor change in urban form that would not dramatically change patterns, operations, or daily life in Asbury Park.

Fig. 4-13: Proposed conditions for Asbury Park. Source: Sasaki Associates.

Post-RBD

After these design proposals failed to win RBD funding, City and County officials remained interested in finding ways to implement them. The deputy mayor felt favorably about each of the three design elements recommended, particularly the dune-supportive boardwalk, which would be unique among Jersey Shore towns and highly visible to tourists:

> "I love the hybrid boardwalk, because I thought we would be the first. […] That would be a super cool thing for Asbury, particularly when we're a relatively progressive town with a lot of mom and pop businesses. So to have a boardwalk thing nobody else has would have been super cool to me, particularly [because] when people come here, they come to the boardwalk" (interview, January 20, 2016).

The deputy mayor also felt the design team picked up on local needs by addressing stormwater and inland flooding through natural lake edges and streetscapes (interview, January 20, 2016). She associates the successes of Sasaki's proposals with the design team's clear and repeated engagement with the public, described above, noting that the City government has struggled with a history of poor communication with residents, and RBD events like the information

sessions and rally offered long-awaited opportunities for public participation (interview, January 20, 2016).

In comparison to other RBD proposals, the deputy mayor stated, the design ideas for Asbury Park felt distinctly manageable (interview, January 20, 2016). The deputy mayor noted that implementation of all three ideas might begin with relatively simple amendments to the City's zoning code or Waterfront Redevelopment Plan. While other RBD proposals would require hundreds of millions of dollars to be fully realized, the deputy mayor estimated,

> "The ideas that Sasaki proposed [for Asbury Park] were ideas that would have cost $5 million or $10 million. […] If you threw us $10 million, we could make Asbury Park substantially more sustainable than it is now. However, there's no way that we will ever come up with $10 million, so we're not going to be able to do it on our own." (interview, January 20, 2016).

As a city dependent on state financial aid to support municipal services, struggling to address immediate needs related to poverty and crime, Asbury Park has never been in a position to invest in its own long-term visioning and planning. The deputy mayor and other municipal officials acknowledged this fact and began a series of grant applications in which the City sought support for investment in resilient design.

In the months that followed the June 2014 allocation of RBD funding, the deputy mayor and other Asbury Park stakeholders framed the Sasaki proposals as opportunities for federal, state, and private foundation funding. A local Resiliency Task Force formed among Asbury's RBD participants, including the deputy mayor. This task force developed a presentation to highlight the feasible proposals that Sasaki provided through unprecedented community engagement, as well as the City's struggle to incorporate resilience into the rapid market-based redevelopment taking place on its east side. The deputy mayor presented that platform to RBD organizers, asking for help in fostering partnerships with federal and state agencies that could support further development of the community-supported design ideas and their cost-effective implementation. But, she said, eventually this pursuit "died out" without further support from

RBD (interview, January 20, 2016). Later in 2014 she directed a request to the New Jersey Governor's Office of Recovery and Rebuilding, asking for the state's support in Asbury Park's pursuit of federal funding through HUD's National Disaster Resilience Competition, a follow-up effort to RBD discussed in Section 1.2. Despite her argument that Asbury Park was well positioned for the funding given its advanced status on community engagement and existing designs, the state did not pursue an application for the city (interview, January 20, 2016). An application to the Kresge Foundation, made not by the City but by Interfaith Neighbors, an active nongovernmental organization and stakeholder through Asbury's RBD process, also did not yield any financial support for resilient design pursuits (interview, January 20, 2016).

Both the City and the County are now pursuing resilience through more traditional master planning processes. Asbury Park's City Council has been able to secure state funding for the purpose of preserving a half-acre portion of beach that had previously been designated for condo development, thereby acknowledging the area's recreational value as well as the risk of building homes in an exposed coastal zone (Spoto, 2015). In December 2015, Asbury Park included resilience as an element in its search for consultants to complete its required local master plan update in the next year (interview, January 20, 2016). A Monmouth County master plan, representing the first update to the County's comprehensive planning document since 1982, is also due this year and near competition in its public review process. Because the County cannot supersede cities' and towns' power on land use decisions, the County master plan is purely a guiding document. This update, however is anticipated to include a 30-page chapter on resilience and opportunities for towns to take actions. As of the December 2015 draft master plan, County planners have included the resilient design proposals from both Sasaki and HR&A in their list of recommended actions. Sasaki's dune-supportive boardwalk and inland lake stormwater management proposals are both cited as ideas that could be successful in Monmouth County towns including Asbury Park (Monmouth County, 2015).

Resilience has become a priority for Asbury Park and Monmouth County since Hurricane Sandy exacerbated the area's structural, social, and economic vulnerabilities and revealed risks posed by a changing climate. The Rebuild By Design process was highly public and engaging for Asbury Park, and it left the City newly aware of opportunities for resilient design but also frustrated by the lack of support to pursue it. Making light of the situation, the deputy mayor has told the RBD organizers that, "as a city on Transitional Aid [state funding to sustain municipal operations], [Asbury Park is] not going to be able to do such a project on our own any time soon, so it's a little like we've been shown pictures of ice cream, but not gotten to taste it" (presentation notes, June 24, 2014). The City and County continue to pursue climate adaptation and preparedness where possible through traditional planning resources, but RBD seems to have left behind a new awareness of the potential for design to help a city like Asbury achieve resilience goals.

4.3 *Inland Bay*: Keansburg, Union Beach, Hazlet

At first, Keansburg felt like a town from an earlier time. I approached it on Main Street, a walkable stretch of restaurants, shops, and banks, none more than two stories tall. I continued past downtown all the way to the beach, where I reached a compact but stocked amusement park and a fishing pier. Both were quiet on my January visit. Beyond the dormant roller coaster, before the beach, was an impressive wall of sand, grass, and fencing. And beyond that dune – more than worth the windy walk up the boardwalk ramp – was a stunning view toward the Manhattan skyline, an asset hidden from plain sight for the sake of storm protection. Looking more closely around the town, evidence of nature's reign emerged: most of the downtown patrons on this weekday morning wore shirts bearing the construction company logos and the words "HOUSE RAISING." Around the residential neighborhoods, some homes stand on stilts, and some others are boarded or demolished. Hurricane Sandy has clearly left substantial marks on this quiet coastal town.

Site Conditions

The third design proposal the Jersey Shore brought the Sasaki team off the Atlantic Ocean and onto the Raritan Bay, where smaller, more year-round communities have, for generations, experienced coastal living differently from those on the barrier island or the headlands. The Borough of Keansburg, one of three towns involved in Sasaki's design concept for the "inland bay" or Bayshore, was founded in the early twentieth century as a summer resort. Much of its one-square-mile area was filled with small lots of single-family homes that originally went empty in winter months. As more New Jersey oceanfront communities developed through the 1950s and 1960s – thanks again to regional access granted by the Garden State Parkway – Keansburg and other Bayshore towns transitioned to permanent, year-round residences for, predominantly, middle-income families; by 2000, less than one percent of properties there were seasonal or second homes (McCay et al., 2005). Economic decline left the borough's downtown to struggle with significant commercial and retail vacancies since the 1980s (interview, January 20, 2016).

Fig. 4-14: Map of the Bayshore region.

Keansburg's coastline has several unique elements that have been with the town through this century of change. At Keansburg's northernmost beach, called Point Comfort, a private amusement park has operated since the early 1900s. The amusement park and a nearby fishing pier continue to attract regional day-trippers to the town. Keansburg lies about 20 miles south of Manhattan, and on a clear day or night, as described above, the beach offers a unique view of New York City's skyline. Those views are limited to the beach and boardwalk, however, obscured at other points by tall sand dunes.

Fig. 4-15: Keansburg shore and views.

The dunes have been in place along Keansburg's coast since the 1960s. After multiple years of hurricane damage and flooding in the area, the U.S. Army Corps of Engineers designed and constructed a 15-foot tall dune system to protect the Keansburg community from storm impacts (McCay et al. 2005). The dunes would become a blessing and a burden for Keansburg, which, due to its topography and poor drainage, tends to hold water during and after storm events. In recent years the Borough has found itself petitioning for the state and federal government to invest in needed repairs and upgrades to the weathered dunes and aging drainage system. The deputy mayor, a lifelong resident of Keansburg, describes dune maintenance funding, along with economic recovery, as among the town's most pressing challenges for the last several decades (interview, January 20, 2016).

Keansburg and the similar towns that surround it have little capacity for longterm planning, but have received some support from the county level. In 2006, the Monmouth County

Planning Board released the Bayshore Regional Strategic Plan, which presented a collection of priorities shared among Bayshore towns including Keansburg, Hazlet, and Union Beach. The plan was meant to encourage cross-boundary collaboration among the towns on shared concerns such as coastal protection, enhancing commercial development on State Highway 36, which crosses several Bayshore towns, and marketing the region for investment and development (Bowes, 2006). But resource sharing can be challenging for towns grounded in home rule and facing immediate needs within their own borders, and the impact of the Bayshore Regional Strategic Plan has been debatable (Romm, 2008).

When Hurricane Sandy hit the Bayshore, it highlighted each town's unique local challenges and needs for regional support. While Keansburg's dunes offered significant protection from storm surge damage, the town's bowl-like topography left water sitting for days in some areas, ultimately damaging approximately 1,500 out of 4,300 properties (Monmouth County, 2015b). Municipal officials do give credit to state decisions and infrastructure, noting that the state acted to dam a Keansburg creek at low tide before the storm, which left space at a low point for water on the west side of town to drain (interview, January 20, 2016). Just one town west of Keansburg, beyond the end of the dune system, Union Beach experienced substantially more structural damage from the impact of the storm surge (Sasaki, 2014a). The low-lying, coastal Bayshore area is expected to face increasing risks as sea level risks and rain events increase in frequency and intensity; Sasaki (2014b) estimated that 59 percent of land and 57 percent of residents across Keansburg, Union Beach, and Hazlet will be at risk for storm flooding by 2050.

RBD Experience

With opportunities for regional collaboration in mind, Sasaki chose to address Keansburg, Union Beach, and Hazlet's vulnerabilities together in a single pilot design proposal. Keansburg's municipal officials were among the most active participating stakeholders in this group (interview, February 3, 2016). The Borough's deputy mayor did not wait for Sasaki's

invitation: When he saw a newspaper article citing a visit and RBD visit to Keansburg in late 2013, he recalls, he called and emailed RBD organizers before hearing from the design team. “I think I beat them to the punch,” he said. “I know they were going to reach out for us” (interview, January 20, 2016).

Once Sasaki began to work directly with stakeholders in January 2014, Keansburg’s Mayor and its construction and flood plain manager supported the designers by providing them tours of damage and local context, including the town’s dunes and pumping stations. They helped organize and promote a public meeting that took a similar format to the one held in Toms River at the same time. On the evening of Thursday, January 30, at Keansburg’s fire station, Sasaki designers presented the RBD competition and their preliminary ideas to local residents and invited them to give feedback on issues including beach redevelopment and the future of Keansburg’s downtown (interview, January 20, 2016). Although one of the goals of the event was to discuss ways to foster better connections between Keansburg, Union Beach, Hazlet, and nearby Middletown, the deputy mayor reported that few if any residents of towns other than Keansburg attended. The discussions that took place that evening functioned as brainstorming sessions, with discussions of the Borough’s needs drifting beyond storm resiliency to elements of major economic development, such as a new marina (interview, January 20, 2016).

After this event, the Keansburg officials understood it to be the role of the design team to process and develop the relevant ideas. They remained informed about the process and provided data or other information to the design team when needed, but did not actively participate in design or draft review (interview, January 20, 2016).

Resilient Design Proposal

Sasaki’s final proposal for the Keansburg area, like that of Toms River, took a regional approach to resilience. In addition to the need for storm and flood resilience, the design team focused on providing solutions to a lack of sufficient open space and a prevalence of contaminated natural areas in Keansburg, Union Beach, and Hazlet. The designers identified a

large site in the area that could be transformed to “simultaneously reduce localized flooding from heavy storm events, protect communities from storm surge risks, and reconnect residents and visitors to a regional recreation amenity that provides better drainage into watersheds and wetlands” (Sasaki, 2014a).

That site would be Natco Lake, a manmade wetland that remains from a former brick-making facility located in Union Beach and Hazlet, adjacent to Keansburg. Sasaki’s proposal for Natco Lake includes natural remediation of the lake and the creeks it connects to through dredging and filling in with local, salt-tolerant vegetation. The design anticipates that the lake would expand and become brackish over time as the area is affected by sea level rise, and the proposal emphasizes the importance of fostering an environment for saltwater species. The lake would be activated with recreational and economic uses, including kayaking, bird-watching, and fishing, too, through the addition of paths and piers in the area.

Figure 4-16: Proposed conditions for the site shared by Union Beach, Hazlet, and Keansburg. Source: Sasaki Associates.

More broadly, the vision for the Natco Lake area highlights opportunities to concentrate development on high ground and introduce sustainable industrial practices to the area through a longterm partnership with the current private property owner, International Flavors & Fragrances. Overall, the concept is driven primarily by the design team's understanding of the site's natural, deindustrialized state. Sasaki's proposal envisions a landscape-scale intervention that can fit recreational as well as economic elements to serve the Bayshore region and aid it in a gradual transition to storm resilience.

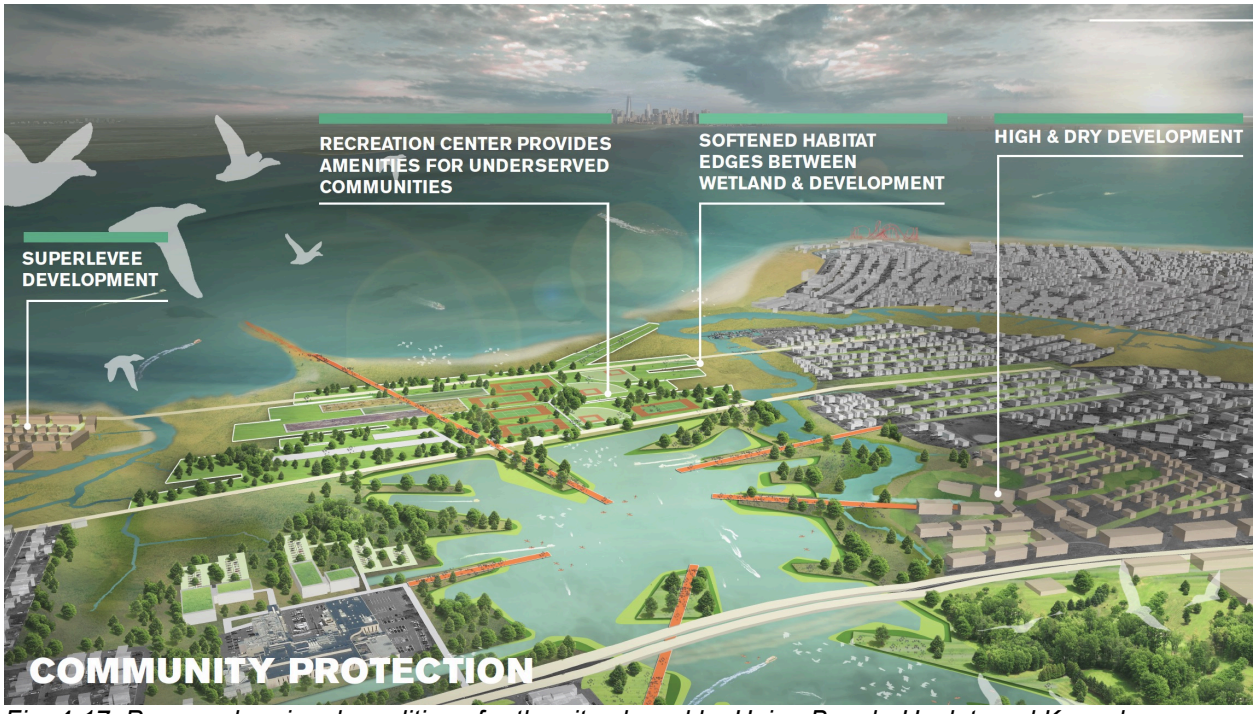

Fig. 4-17: Proposed regional conditions for the site shared by Union Beach, Hazlet, and Keansburg. Source: Sasaki Associates.

Post-RBD

The idea that a resilient design solution for Keansburg may lie outside of the town itself was initially a surprise to the municipal officials. The deputy mayor recalled that most conversations at the public meeting had focused on opportunities for Keansburg specifically; at that point, the site around Natco Lake was mentioned but not highlighted as central to a design proposal. Discussions around local ideas like an offshore jetty or the potential removal of

vulnerable houses along a frequently flooded creek were not featured in Sasaki's final design for the area (interview, January 20, 2016).

Nevertheless, the designs and rationale presented clear – if unexpected – benefits for Keansburg and its residents. Although Sasaki primarily promoted the recreational and environmental remediation features of the project, Keansburg officials understood that such a large basin area could also provide room for the water that the Borough needs to pump out during storm events. They noted that the lake would connect with an important creek in Keansburg, and that remediating that creek as part of the project could help the town move forward in securing funding to obtain and clear the vulnerable homes nearby and provide more local open space (interview, January 20, 2016). They understand and respect that the designs reflected Sasaki's and RBD's goal to serve a region with resilient design: "I think they definitely took everyone's opinions into consideration," the deputy mayor said (interview, January 20, 2016). "I think that they understood that they had a larger mission, and they couldn't just focus on Keansburg – it was sort of the Bayshore area." They report being happy with and interested by the final designs, which they would have been unlikely to think of as options without the design team (interview, January 20, 2016).

Like the stakeholders in Asbury Park, Keansburg's deputy mayor inquired about opportunities to pursue funding for part or all of Sasaki's design once he found out that it would not receive support through RBD (interview, January 20, 2016). After receiving unclear answers from the Governor's office, though, Keansburg has returned its attention to other recovery and resilience work. The Borough recently joined the Federal Emergency Management Agency ("FEMA")'s National Flood Insurance Program Community Rating System ("CRS") – a voluntary program in which municipalities may apply for credits for their flood management actions that, if approved, translate to flood insurance cost reductions for residents. The Borough receives technical support for its CRS applications through a county-wide organization of participating towns. Keansburg's town engineer is exploring the potential to earn CRS credits through

structural upgrades to parts of the dunes or the construction of additional pumping stations for flood relief (interview, January 20, 2016). The Borough is also researching options for replacing hardscape areas with permeable pavement to support groundwater recharge, which could reduce flooding and the need for pumping in a storm event (interview, January 20, 2016). While municipal officials examine these engineering options, many Keansburg residents have worked independently and used FEMA relief money to elevate their homes above expected future flood levels.

Fig. 4-18: One of many homes raised above flood levels in Keansburg's coastal neighborhoods.

The Keansburg officials, however, are also considering opportunities to build resilience beyond local engineering and fragmented homeowner projects. With the Army Corps' $40 million dune repair project recently completed in Keansburg (Monmouth County, 2015b), The deputy mayor is exploring whether neighboring towns, like Middletown, with beaches right next door, might play a role in other coastal protection initiatives:

> "I think what we have to do is form a partnership […] with each local government, and talk about: how do we maintain this [dune system]? If we do get hit with some smaller storms along the way, how do we replenish that sand? Can we [add] more pumping stations that are going to benefit all of us?" (interview, January 20, 2016).

The idea of a large regional project like the one proposed for RBD is not entirely off the table, but is being considered in smaller steps. State or federal funding could help towns like Keansburg acquire flood-prone properties for public use beginning, perhaps, as Keansburg as sought in the past, with just a few properties along a local creek. The Borough's construction and floodplain manager envisions a scenario in which the public space and remediated area could grow over time, perhaps through small additions of properties annually over several

decades, rather than all at once. Such an incremental process would allow a public design project like this to prove its public benefits and larger potential early on, and make a case for the high level of public funding that its full realization would require; if people can see and experience recreational access and simultaneous flood relief in one area, said Keansburg's construction and floodplain manager, their support and interest could help the project grow further (interview, January 20, 2016).

From a history of frequent flooding through the devastating experience of Hurricane Sandy, Keansburg and its public servants have recognized and prioritized the need to plan, design, and engineer for recovery and resilience. With limited municipal capacity and resources, however, their work since Hurricane Sandy and Rebuild By Design has mostly relied on existing federal state programs and has resulted in a somewhat business-as-usual approach of rebuilding infrastructure that has proven able to fail. Perhaps inspired by the Sasaki team's ideas for the area, Keansburg officials are increasingly interested in exploring opportunities for partnership and cross-boundary, large-scale design solutions for resilience and other public benefits. But these ambitions are in many ways in conflict with Keansburg's and other towns' past approaches and options for flood protection infrastructure. Pursuit of resilient design in Keansburg and the Bayshore will require municipal leaders and planners to overcome a long-held home rule mentality and to argue for financial resources for new forms of planning and design.

5

Findings

Toms River, Asbury Park, and Keansburg officials each approached the opportunity to participate in RBD with different expectations and different experiences. Their immediate outcomes varied, from Asbury Park's pursuit to find funding for manageable green infrastructure ideas to Toms River's general dismissal of its area's large-scale proposal and quick rebound toward other recovery planning resources. Through my interviews, several common threads emerged among the municipal leaders and planners around the broader benefits and challenges of participating in the federal design competition. This section discusses the lasting effects of Rebuild By Design on each town, including the benefits of long-term visioning; bringing public attention to resilience opportunities; and increasing interest in regional collaboration. This section also describes some of the most significant challenges that these places face, including local capacity and politics – challenges that impede towns' potential for future resilience and that limit the effectiveness of exercises like design competitions.

5.1 Effects of the Competition

New Ideas and Long-term Visioning

One of the most commonly recognized benefits of the design competition experience among these participants is the access it provided to new perspectives and expertise. In the months following Hurricane Sandy, many towns and counties were actively seeking new ideas for planning and recovery as they sought to rebuild from a disaster event that could conceivably occur again. When the opportunity to participate in RBD came along, these municipalities were interested and engaged, despite a lack of clarity on what they might get as a result. "There was a number of different programs, initiatives and so on, and we were sort of interested in all of them, so we immediately said yes, we'd be happy to participate," the Ocean County director of planning explained. "It was something new to us, but we were interested in [seeing] where this goes," he said (interview, January 26, 2016). In Keansburg, officials were grateful for RBD as an

opportunity for idea-generation and consulting, noting that the Borough would not have had the capacity to do such work on its own (interview, January 20, 2016).

In some cases, the specific ideas the designers generated resonated with the municipal officials as concepts that could be implemented or expanded upon. As described in the previous section, Asbury Park and Keansburg have explored options for funding part or all of Sasaki's ideas. Keansburg's deputy mayor emphasized that the idea of looking to regional resources like Natco Lake for both water retention and economic development is simply not anything the Borough would have thought of on its own without Sasaki's perspective (interview, January 20, 2016). The deputy mayor of Asbury Park noted that the designers' proposals for the streets and lakes, emphasizing permeability, continue to challenge the City's business-as-usual approach to development:

> "I think [the City] learned a tremendous amount in terms of ideas on how to start at least considering sustainability when talking about design or redevelopment […]. Because what has constantly been the goal for Asbury Park is to build on the vacant lots. And what is never considered, and what we're having major problems with […], is flooding" (interview, January 20, 2016).

It is clear that Monmouth County planners also recognized potential for implementation of both the lake management and boardwalk-dune designs for Asbury Park, as they cited these proposals directly in the County's draft master plan, essentially endorsing them as strategies for other coastal towns (interview, January 21, 2016). In Ocean County, the planning director said that the experience helped planners recognize the potential to redevelop the large former sand-mining site in Berkeley Township, which the design team highlighted as well connected to Toms River, the Garden State Parkway, and a planned regional bike trail (interview, January 26, 2016). In each of these cases, to varying degrees, the RBD experience sparked some new ideas in resilience and redevelopment that have since influenced the municipal participants and local planning interests.

More broadly, several participants highlighted a new awareness of the power of long-term visioning, which was not often part of their prior planning processes, following their experience with the design team and RBD. As described in Section 4.3, Keansburg's construction and flood plain manager sees the Natco Lake proposal as an opportunity to work backwards and plan for gradual implementation. Through incremental State funding and transfer of properties to public ownership along Keansburg's creek, the Borough could potentially develop a remediated landscape over time to reach Sasaki's proposal for a large regional recreation resource in several decades, he explained (interview, January 20, 2016). The Ocean County planning director, although he has less interest in the specific outcomes proposed for Toms River, thought the visioning exercise provided a new and valuable platform to develop new long-term planning ideas:

> "I think [the designers] put sort of the ultimate 'where-do-we-end-up' on paper, to look at and to think about […], to say, 'What would this look like at the end of that term of becoming, you could say, the ultimate resilient area?,' as opposed to kind of doing some piecemeal things. […] Maybe this final presentation was one example of what it might look like. [...] When you actually see it, then you have something to react to. And you can then even critique it and say, 'I don't know how you'd ever do this.' But it gets you at least thinking along those lines of things that would need to happen" (interview, January 26, 2016).

Attention to Important Issues

RBD presented these participants with an opportunity to uncover or elevate some concerns that had not previously received much attention or resources. In Asbury Park, the deputy mayor noted that the Sasaki design team brought renewed attention to the west side of the city, which has long been ignored in favor of investment on the waterfront: "The history of Asbury Park is: the boardwalk is the jewel. You know, I understand that argument. But, if you're not focusing on the entire town of Asbury Park, then [the proposal] doesn't serve us" (interview, January 20, 2016). By proposing designs that would impact residents of Asbury Park's west side and involving the residents there, the Sasaki design team promoted that conversation in the City government's and public eye. Similarly, the Ocean County planning director appreciated

the focus that RBD brought to the need for economic diversity and specifically ecotourism in the Toms River area, noting "there are benefits to saying there's more than being on the beach or riding the rides. On the mainland side, there [are] more opportunities for nontraditional tourism activities like ecotourism […] and also for year-round attractions" (interview, January 26, 2016). As discussed above, Asbury Park's deputy mayor and Keansburg's construction and floodplain manager both thought the design team's focus on local flooding was important to generating solutions and promoting changes in local development and engineering practices.

The local results of boosting attention to these challenges and opportunities through RBD ranged from action to affirmation. Asbury Park's active Resiliency Task Force formed among local individuals, including the deputy mayor, who had participated in the RBD process. In addition to following up on RBD to seek implementation funding from other sources, Asbury's Resiliency Task Force is also credited with framing resilience as a key topic for the City's upcoming master plan (interview, January 20, 2016). Both planners at the County level felt the experience affirmed and elevated their resilience-related priorities internally and publicly. The planner for Monmouth County said that simply having two locations chosen as pilot sites for a federal initiative highlighted the impacts of Hurricane Sandy and the responsibility of the County to address future storms. The director of planning for Ocean County also felt the experience pressed him and others to continue to work to change practices and priorities in light of the need for resilience planning (interview, January 26, 2016).

In addition to bringing public attention to resilience planning, participating in RBD also helped some local government representatives understand their constituents' concerns. Although Toms River officials were less interested in Sasaki's final proposal, ideas that were generated among residents at the public meeting, including a town river walk and a regional ferry service, gained traction from there and were later formalized in the Town's master plan and the County's Long-Term Recovery document (interview, January 26, 2016). In Asbury Park, the deputy mayor found the public meetings and the parade became opportunities for the local

government to repair relationships with constituents and to learn they share an interest in recovery and resilience, explaining,

> "In Asbury Park, you get a tremendous amount of people out [to public meetings] for [problems like] shootings, you get a tremendous amount of people out for higher taxes, you get a tremendous amount of people out for what is oftentimes, not always, complaint-driven. And what we saw with the Q-and-A at The Showroom was a tremendous amount of people out, excited about an idea, excited about hearing the ideas, and then also having a dialogue about their ideas, giving feedback. I mean, for a little local movie theater to sell out on a Tuesday night was a little bit unheard of for this idea that they were – that we were – going to build a more sustainable Asbury Park" (interview, January 20, 2016).

Regional Collaboration and Resource Sharing

The experience of participating in RBD has also prompted some local officials to explore new cross-boundary partnerships and support from nonprofit organizations work toward regional resilience. The idea of collaboration has especially resonated with officials in Keansburg and Monmouth County. As described in the previous section, Keansburg's deputy mayor notes he was struck at the end of RBD by the feeling that that he never would have thought to look to a lake in an adjacent town to address Keansburg's flooding and economic development concerns. Outside of this experience, the Borough's physical boundaries kept him and others from seeking regional solutions: "[Natco Lake is] just not in our town; we don't have access to it. […] If we wanted to, even if we had that idea, we would still have to have Union Beach and Hazlet and the County and so many other agencies involved in doing something like that. If we initiated that idea, I don't think it would have gone anywhere" (interview, January 20, 2016). Although they are not actively following up on the proposal for Natco Lake, the Keansburg officials are now considering partnerships with adjacent towns to focus on shared dune maintenance, as noted in Section 4.3.

Monmouth County planners have helped Keansburg and other towns connect with nonprofit agencies and their resources as a result of RBD. The planner for Monmouth County noted that County officials met and fostered connections with the American Littoral Society and

Clean Ocean Action, among other coastal resilience and community support organizations, through their participation together in preparation meetings for the Rebuild One City parade event (interview, January 21, 2016). Representatives of Clean Ocean Action have since begun shared their work with the Monmouth County Planning Board, and the American Littoral Society has presented and providing technical advice to the group of Monmouth County towns seeking to institute new flood control measures through FEMA's Community Rating System ("CRS"), described in Section 4.3. These groups also supported the County in reviewing the resilience-related content in its recent draft master plan. The County planner calls these new partnerships "the biggest takeaway" from the County's experience with RBD, adding:

> "[Getting] in touch with the Littoral Society [and] Clean Ocean Action would not have happened if there wasn't Rebuild By Design. Or, it would have taken a lot longer for us to meet. So, it was nice because it brought together a lot of stakeholders at the same table. And even though these [meetings] weren't about the proposals, [but] that event, it brought everyone to the same table […]. There were nonprofits, County, the local government, religious groups – it was a really diverse stakeholder meeting. And that wouldn't have happened unless it was for planning this [RBD] event" (interview, January 21, 2016).

In Ocean County, the planning director described a similar experience of connecting, having connected with members of the coastal protection nonprofit Surfrider Foundation for the first time through RBD (interview, January 26, 2016).

In Asbury Park, where organizations like Surfrider Foundation and Clean Ocean Action already had a history of action along with support from current City Councilors, the deputy mayor said that she finds the RBD design team itself still serves as a resource. She maintains contact with several Sasaki designers and has been in touch with them for information to support her search for further funding (interview, January 20, 2016). Her experience and the others above show that, perhaps most immediately, RBD served as a networking opportunity and a showcase on the potential benefits of resource sharing among these historically independent municipalities.

5.2 Ongoing Challenges

Scale of Proposals

Among the most common criticisms of the RBD experience from the municipal participants' perspective was the scale of the final proposals, particularly for Keansburg and Toms River. Not only were the ideas of designing and developing an entirely new town center and remediating a former industrial site to create a regional natural resource daunting in terms of cost and coordination, but they also seemed somewhat unresponsive to area residents' immediate needs. In Keansburg, the Borough's construction and floodplain manager noted, FEMA services were still actively demolishing storm-damaged homes in the winter of 2014 – nearly a year and a half after Hurricane Sandy – while they were participating in RBD (interview, January 20, 2016). Since then, as discussed in Section 4.3, the Borough has devoted much of its engineering staff to looking into dune fortification and the water pumping system while residents act independently to raise homes. Although Keansburg officials understand the value of Sasaki's long-term design proposals, the recovery and protection of current residents from further storm damage naturally take precedence and pull the Borough's limited human and financial resources away from long-term planning and design.

In the Toms River area, local planners came away from RBD with the sense that the final proposal, though bold and substantial, lacked local context. As described in Section 4.1, Sasaki aimed to connect the beach and the Pinelands to foster an ecotourism-based economy where activities would occur on higher ground, west of the ocean. The Toms River planner, however, felt the final designs promoted a blatantly false assumption that the beachgoers on which the local economy depends today could be convinced to practice a very different type of tourism simply by placing symbolic beach elements like boardwalks and benches into the Pinelands environment (interview, January 26, 2016). The Ocean County planning director concurred with that concern, saying, "I think [the design team] wanted to retain some of the common themes of the shore: boardwalks, amusement rides. And you'll see that reflected on

their final schematic, but it's doing different things. And it's almost kind of cute, but it's not functional" (interview, January 26, 2016). The Toms River planner felt that more locally appropriate ideas that would have accomplished goals similar to Sasaki's, such as the aforementioned river walk that could serve as both a recreational attraction and a buffer zone for stormwater, were discussed during the process but not incorporated into the final design (interview, January 26, 2016). Without a clear local influence and understanding of culture in the region, the final design for the Toms River area seemed unrealistic and unlikely to succeed in its aims.

As in Keansburg, the final proposal for Toms River seemed to ignore opportunities and needs for immediate action as well as cost concerns. Citing ideas like Barnegat Bay ferry service, which appears to have been deemphasized in favor of promotion of the aerial tram idea in Sasaki's final proposal, the Ocean County planning director explained that he had hoped the design team would delve into opportunities that currently exist to help the County get started on a transition to resilience right away. He described the final output, though, as:

> "futuristic, sort of 'here's what it's going to look like – Ocean County in the future beyond'. And I can say that, frankly, I was disappointed in what I saw there. And I guess, in one major sense, […] my thought was: How are you going to fund any implementation of this?" (interview, January 26, 2016).

From his perspective, though perhaps representative of a resilient future, the proposal lacked the essential recommendation of a next step: "I don't know what you're going to ask for funding for. There's nothing concrete there" (interview, January 26, 2016). The Toms River Township planner noted that there was really no role for incremental implementation on the local level that she could see, as the proposal would depend on federal funding and on approvals from organizations like the notoriously protective New Jersey Pinelands Commission (interview, January 26, 2016). With such a large and controversial final proposal, RBD and the design team seem to have left the Toms River area without new resources or clear plans to pursue.

However, this criticism is not applicable to the RBD proposal for Asbury Park. As we saw in the previous section, by the deputy mayor's estimate, the City of Asbury Park could take significant steps toward making their final design a reality with just $5-10 million support to amend development rules and retrofit public streets and lake areas (interview, January 20, 2016). Sasaki's proposals for Asbury were not only more immediately realistic, but were also more closely based on public interest and consensus that was developed through a more participatory process. As described in Section 4.2, the design team, with the guidance and financial support of RBD and the Van Alen Institute, conducted multiple public meetings and the Rebuild One City rally through regular collaboration with Monmouth County representatives and local and regional nonprofit groups that serve Asbury Park. Through these contacts, the design team was perceived as recognizing Asbury's unique local context and history, particularly with regard to unmet socioeconomic needs on the city's west side. The final proposal makes it clear that this context guided and perhaps tempered the scale of Sasaki's design priorities for Asbury Park. These priorities, as discussed, focused on reducing flooding throughout the city and aesthetically linking the west and east sides rather than high-cost water management or shifting the area's economic center.

In contrast, participants from Keansburg and Toms River reported less extensive public outreach, and officials there shared a sense that they did not have much opportunity to influence the RBD team's designs. Only a single public meeting was held in each of those towns, and relatively little contact between the design teams and the municipal participants followed. As we saw, Keansburg officials essentially deferred to the design team after that event, giving them a chance to generate ideas on their own. This independence afforded the RBD team was based on a sense that, as the deputy mayor said, "Sasaki was here to do their job, and I don't know that they really needed help from anyone else" (interview, January 20, 2016). The Ocean County planning director, on the other hand, noted that he provided feedback on the initial ideas for the Toms River area, suggesting to the design team that less futuristic,

more immediately implementable ideas would be helpful (interview, January 26, 2016). Both the Ocean County and Toms River Township planner, however, felt they saw little change between the early and final designs for their area, making the process feel predetermined and still conceptual rather than final at the end of the process (interview, January 26, 2016). Compounding this sense, perhaps, is a frustration with the January timing of the public event and the challenge of generating meaningful public engagement in a town full of summer homes in the middle of the winter season. Together, these three cases show some correlation between the degree and quality of public engagement in the design process and the usefulness of the final proposals from the public servant's perspective – though the relationship is not linear, nor simple.

In the framework of a competition, big ideas with less public control may be the expected outcome. A planner from Sasaki Associates explained that the design team was aware it took a risk in depicting managed retreat from the coast at the scale of the Toms River proposal, but that Sasaki pursued the idea in part for the recognition it would receive. "I think it's good that we ended up suggesting it," she said, "because it's a competition. The point is to get things out there that wouldn't get out there otherwise. [The discussion of retreat] is new thing, and we shouldn't take it off the table just yet" (interview, February 3, 2016). In this way, RBD served as an opportunity to venture solutions to match the scale of the challenge. The Sasaki planner also noted, though, that the competitive format likely led her team to engage in fewer opportunities for public education and collaborative design than would occur in a traditional designer-client process (interview, February 3, 2016). Officials and residents in Keansburg and Toms River had little chance to digest or question their RBD proposals with the designers, and the officials were accordingly left without a sense of ownership or immediate need for the ideas proposed.

Local Planning Capacity

Despite the different scales of their proposals and varying interests, each municipality faces challenges with planning capacity and resources that RBD did not – and perhaps could

not – address. As discussed previously, none of these towns or counties are in positions to begin outlining a financial plan for proposals of this scale; Asbury Park has struggled to find state or private support for even updating its planning or zoning documents to address resilience. All three have experienced fatigue from the grant applications and self-advocacy often required to do basic planning work in New Jersey's home rule structure. Staff capacities were stretched just to participate to the extent they did in the RBD process, and some expressed that after this experience, they would likely not put in the same time and energy to a similar process again (interview, January 20, 2016; interview, January 26, 2016). RBD and some of the local work that followed highlight issues of local capacity and their implications on potential future resilience planning in these towns.

The tradition of home rule continues to hinder efforts of regional collaboration or cross-boundary investment in New Jersey. As discussed in Section 2.1, "home rule" states grant the right and responsibility of handling local laws and decisions without seeking approval from state legislatures, leaving small towns like Keansburg responsible for their own fire companies, sanitation services, and land use codes, among other things, despite the potential efficiency of sharing resources and contracts across town boundaries. As we saw Keansburg officials are aware of the potential for collaboration with neighboring towns, but they are not yet initiating partnerships. New Jersey has a history of attempts at cross-boundary planning collaboration, including the Hazlet-Keansburg-Middletown Flood Control Commission, which disbanded and transferred control of the local dune system to the State government in the 1980s (interview, January 20, 2016). Monmouth and Ocean Counties are also left with no jurisdiction to impose land use regulations or development plans onto or across towns, and can only make advisory recommendations for individual municipalities (interview, January 21, 2016). The regional, cross-boundary perspective that large scale resilience projects like those proposed through RBD requires, in other words, is difficult if not impossible to create in New Jersey. Overcoming

the tradition of home rule and the limits of local capacity is among the biggest challenges to realizing significant resilience proposals like the ones promoted through RBD.

With towns and counties essentially unable to conduct significant regional resilience work, municipalities might reasonably be expected to look to the State government of New Jersey to initiate or provide support for such projects. Representatives of State agencies did not participate in development of the RBD pilot proposals to the same degree as municipalities and counties, however. Asbury Park's deputy mayor noted that, in general, "we are never in the same room as State or County people" when working on Asbury Park's planning initiatives (interview, January 20, 2016). The Keansburg officials have applied for State funding related to resilience projects, including the Department of Community Affairs ("DCA") "Blue Acres" assistance that would allow the Borough to take properties along the local creek and preserve them as public space with flood control benefits. They are hesitant about the likelihood of receiving State support for that initiative, though, and about the likelihood that this source of funding will help Keansburg and surrounding towns implement Sasaki's proposal for Natco Lake and the creeks gradually as the Borough's construction and floodplain manager described (interview, January 20, 2016). Keansburg officials have found the State to be a limited resource for low-capacity towns seeking significant planning and implementation support.

The Township of Toms River illustrates a different experience, of a municipality relatively well resourced in terms of planning capacity. As described in Section 4.1, Toms River has been successful in attaining post-Sandy planning grants from New Jersey's DCA and Department of Environmental Protection, as well as a $90,000 planning grant and consultant for Route 37 economic development through the HUD-funded, Rutgers-based organization Together North Jersey. As discussed above, the Township has had opportunities to formalize some ideas that emerged or gained support through the RBD process in the Town and County planning document updates. The Township also has help from philanthropic funding, including a private foundation devoted to promoting Toms River and supporting arts and health initiatives in the

town (interview, January 26, 2016). While not all related to resilience, each of these programs and opportunities relieves the Township of certain financial pressures and makes resources available for local planning efforts. It is perhaps because of this high internal capacity that the Township has expressed less interest than the other two municipalities in regional collaboration and in seeking funding for implementation of the RBD proposals.

The Toms River planner related RBD to the experience of working with technical assistance consultants for planning efforts, which the Township has historically avoided. With the ability to attain grants and perform planning internally, Toms River has tried not to take opportunities that may involve "outsiders coming in that don't know the region, and don't know all the local issues" and whose proposals could be "potentially driven by their polic[ies] and not necessarily what is best for the Township" (interview, January 26, 2016). The federally sponsored design competition was less clearly suited to the needs of Toms River than it was to those of Asbury Park or Keansburg, and Toms River's distinct experience highlights the potential significance of local resources, interests, and prior planning engagement to the effectiveness of a program like RBD.

Regional Politics

While resource limitations clearly pose a challenge, the politics and power dynamics responsible for distributing those resources also hinder the potential for long-term, regional resilience planning and design implementation. Interviews revealed an acute awareness of this issue among municipalities in the New York-New Jersey region that stems from perceived disparities in post-Sandy recovery funding distribution as well as a longer historical sense that central and southern New Jersey towns struggle to find state or federal support from their position in the shadows of New York City and North Jersey development. The Toms River planner, whose post-Sandy grant applications have generally been successful, noted that historically, the Township has not been able to rely on State support and had come to expect unequal distribution: "In New Jersey, it tends [to be] that a lot of the funding always goes to

North Jersey. So it's not always worth your time [to apply], because you know you're going to apply and probably not get it" (interview, January 26, 2016).

Other interview subjects shared this sentiment, and revealed that, in hindsight, three small towns in central New Jersey might never have expected to succeed in securing funding through a region-wide competition. Keansburg's deputy mayor shared that, based on past experience, he had been skeptical from the beginning of his participation in RBD that a place like Keansburg could receive funding when the competing design proposals focused on high profile sites in New York City, the up-and-coming Hoboken, and the Meadowlands region, which Governor Christie's administration has targeted for major economic development (interview, January 20, 2016; see Moss and Brennan, 2015); Keansburg simply does not have the same Congressional or gubernatorial lobbying power for federal funding as any of those places do, and Keansburg has a long memory of struggling to argue on its own for federal support, even for dune repair recommended by the Army Corps of Engineers (interview, January 20, 2016). The planner from Toms River said she felt the Jersey Shore designs were "lost in the mix" among the other New York City-focused RBD proposals, and she was not surprised that few design teams took on the challenge of proposing solutions for towns like hers: "We weren't glitzy enough, I guess" (interview, January 26, 2016).

Their frustrations would seem affirmed and compounded when HUD announced that no towns or counties in New Jersey would be eligible to apply for National Disaster Resilience Competition ("NDRC") funding (HUD, 2014), and later that the State of New Jersey would use its application to seek $236 million for flood reduction infrastructure in the Meadowlands and $75 million for a regional bus garage in Secaucus – both in North Jersey (Saltant, 2016). As described in Section 1.2, the State only received $15 million federal support through that competition, funding that was delegated for the development of resilience-focused regional plans, not for seeding implementation of any related initiatives. Those regional planning efforts have not yet been outlined, and the Jersey Shore towns expect they will eventually be pitted

against North Jersey jurisdictions again for distribution of that support (interview, January 26, 2016).

To municipal planners and officials on the Jersey Shore, it seems that federal and state efforts, RBD included, have been designed and executed more on the basis of politics that on degree of need. The Toms River planner noted that RBD could have been more helpful to her Township, not through more project implementation funding, but rather if more designers had provided ideas, noting:

> "We're much smaller than New York City, but we had the most damage. I think they should have put rules in place that said: the areas that were most impacted were these, and we want a certain amount of teams to focus on these areas. […] Or even just set aside a certain amount of money so that [participating designers] would be more likely to try to focus on finding solutions for the areas that [were] the most badly hit" (interview, January 26, 2016).

The RBD experience may have further ingrained a sense of frustration over a lack of federal and state support among these participating municipalities. This kind of political disparity continues to be a hindrance to regional resilience planning, leaving small towns on the frontlines of climate change without resources or power to seek support for new ideas.

While the design competition method itself is not in a position to resolve longstanding political bias in funding or to break down state constitutional language that inhibits regional governance, an initiative at the scale of RBD will always be unlikely to be able to operate outside these kinds of challenges or to produce significant benefits without understanding and acknowledging them. This thesis's investigation into the experiences of Asbury Park, Keansburg, and Toms River officials during and after RBD provides an improved understanding of the current practical challenges to resilience planning and design implementation as well as the beneficial effects, from public attention to new partnerships, that RBD did provide. The next section offers concluding thoughts on what these cases reveal about the potential and limitations of design competitions as tool for resilience planning.

6

Conclusions & Recommendations

6.1 Research Questions

This thesis began with the intent of answering two research questions, one narrow and one broad: First, what becomes of municipalities that participate in resilient design competitions, in particular, those that do not win funding to implement the ideas they were provided? And next, how may design competitions serve as tools for policy innovation and change? Studying the cases of Toms River, Asbury Park, and Keansburg, New Jersey after they served as proposed pilot regions in Rebuild By Design revealed a range of experiences and planning actions before, during, and since the competition. The well-resourced township of Toms River, along with its county-level planners, seem to have treated RBD as one of many opportunities to explore resilience planning; since the loss of the design competition, Toms River has focused its energy on pursuing traditional state and federal grants for research and redevelopment planning on issues like localized sea level rise and economic development. While Asbury Park and Keansburg officials were more engaged and inspired by the resilient design ideas proposed through RBD and even sought implementation funding, limitations of local finance and political leverage have, for the time being, left these municipalities to pursue climate change adaptation measures at piecemeal and local levels through tools like individual home elevation and community master planning.

This study looked beyond the fate of each design proposal in these towns, though, and found that participating in a competition like RBD can provide valuable learning experiences for municipal officials, planners, and the public. As discussed in the previous section, the exercise of long-term visioning was new for several town and county planners; officials in Toms River and Keansburg indicated the final RBD proposals may help them develop incremental implementation plans or serve to spark alternative visions for the region's future. Representatives of each municipality also noted that RBD helped to elevate issues of climate

change and resilience in the public consciousness and among local planning priorities. Finally, this thesis provides evidence to suggest that for some government entities, the resilient design competition may be a means to foster cross-boundary or public-private partnerships for coherent regional planning, or at least to inspire the pursuit, as has occurred in Keansburg. At the same time, this research also elucidated some limitations of design competitions as tools for planning and policy change, including their tendency to generate dramatic proposals without well-defined steps for implementation. It is also clear that, in a home-rule structure of governance like that of New Jersey, local government capacity continues to play the lead role in determining whether and how a municipality addresses the challenge of climate change; RBD may have provided new ideas, priorities, and public attention, but the national design competition could not, on its own, overcome historic regional politics or resource barriers to resilience.

6.2 Contributions

An additional intent of this research was to fill a gap in our understanding of design competitions from the perspective of public sector participants, particularly those whose proposals were fully developed but did not win. In Section 2.2, I described the tendency of competition literature to serve the design field while overlooking the possible impacts of these exercises on long-term local planning or members of the public. This study yielded new information related to design competitions, as well as resilience planning and opportunities to encourage policy change more broadly – simultaneously confirming, challenging, and expanding on some of the key understandings described in Section 2.

Design Competitions

As noted, the most glaring gap in the literature existed on the subject of design competitions, where critiques have emerged primarily from designers themselves and focus more on the quality of proposals than their practical implications (Banerjee and Loukaitou-Sideris, 1990; Allen, 2005). Through these case studies, I was able to observe some of the

perceived benefits and challenges of design competitions from the perspectives of public servants seeking paths to resilience. The planners and public officials in these towns affirmed the notion that design competitions can serve to yield creative solutions that would have been unlikely to arise through traditional local planning processes: Based on their historic planning practices and priorities, it is doubtful that Toms River and Keansburg would have looked for ideas outside their own borders, or that Asbury Park would have challenged the traditional linear form of the boardwalk or linking its east and west sides through hydrophilic street design.

Other assumed benefits of competitions, however, yielded mixed results for the public officials. There was no great High Line-esque upwelling of public support or demand for the projects proposed; although Asbury Park's experience shows the potential to raise interest in resilience and design through engagement, it has not led to an influx of philanthropic or governmental funding, even despite this project's relatively small scale. The larger proposals essentially affirmed critics' view that competitions encourage impractical proposals with little regard for current public opinion. As the Sasaki designer noted, the competition format provided a unique incentive for the design team to suggest the idea of managed retreat around Toms River; while proposals like this often have shocking and questionable implications at the local level, they generate publicity and are in keeping with the idea-generating mission of a national design competition.

Policy Change

Beyond the proposals themselves, this thesis explored the potential for the design competition to influence policymaking and planning more broadly in the towns involved. As described in Section 2.3, current literature on institutional and policy change suggests that one or more occurrences, such as experiencing natural disasters, having high capacity government organizations, the presence of local champions and a unified public interest in resilience, can each influence the evolution of local planning and policymaking toward addressing climate change and adaptation (Anguelovski and Carmin, 2011). Of course, the three towns studied

here shared the first of those factors; Hurricane Sandy's impacts were significant in each place, and it is not possible to completely disaggregate the influence of that storm on longterm policymaking from the effects of RBD alone. Certainly, however, the experience of having the federal government sponsor a unique and highly publicized event that focused on the needs of these towns highlighted for municipal leaders and county planners the importance of considering resilience in planning practice. As noted by planners from Ocean and Monmouth Counties and described in Section 5.1, RBD affirmed the priorities and interests that were already emerging post-Sandy.

But did the design competition serve as a step toward new planning practice for any of these municipalities? Has it helped to open a "policy window" (Kingdon, 1984) by supporting the generation of solutions and political will to act on climate adaptation? These answers seem to vary across the towns. In some cases, participating in RBD led to improved awareness of the challenge of climate change and available solutions. In Keansburg, for example, where, for generations, great faith had been placed in hard infrastructure to prevent and relieve local flooding, officials are now arguably better equipped to consider large-scale, cross-boundary planning ideas, as well as potential long-term changes to the Bayshore region's layout and economy. And in Asbury Park, where the solutions proposed may be more immediately implementable, the competition helped the City generate public support through engagement and activation around the issue of resilience. RBD's value added in the barrier island region is less also not perfectly clear, however, as its county planning director seemed to see potential in repeating the design team's exercise of long-term landscape visioning as a productive step in resilience planning, while the Town planner found the regional visioning results unhelpful and has moved on to planning through more traditional, locally-focused processes. While the design competition has provided new information, ideas, and planning routes for each town and region to explore, it could not, on its own, significantly enhance local government capacity to pursue

large-scale planning or policy change. As a result, the trajectories of planning and the potential for climate change adaptation and resilience in these three towns remain unclear.

Resilience

Finally, some lessons emerged from this thesis on the concept of resilience itself and how its meaning and implications can vary across even seemingly similar places. In Section 2.1, I highlighted four common concepts of resilient design, aggregated from a range of existing literature: infrastructure enhancement, working with natural forms and processes, regional-scale planning, and equity. The proposals that emerged through RBD for Toms River, Asbury Park, and Keansburg reflected and affirmed those concepts overall, but each seemed to prioritize one over others. While the influence of natural infrastructure was clear across proposals – in Toms River's re-naturalization of the developed barrier island and other buffering land areas, Keansburg's use of an existing pond rather than man-made facility for water storage, and Asbury Park's absorbent edges and flexible dune-scape – overall, Toms River's and Keansburg's resilience visions were heavily based on a concepts of regionalism, while Asbury Park's was distinct in its focus on social equity.

It was never the mission of this thesis to critique the three proposals themselves on the basis of their design quality or their potential to contribute to resilience, but rather to understand their impacts on local planning efforts. As products of a nationally promoted competition, though, these visions were clearly meant to influence more than just three towns on the Jersey Shore. Their results beg the question of whether RBD achieved its goal, described in Section 1.2, of generating ideas that reflect true resilience in the face of current and future climate risks. By definition, plans for resilience should aim not only to address challenges experienced in the past, like another Hurricane Sandy, but also to prepare a city or region to maintain or regain its core functions under disturbance conditions yet unforeseen (Ahern, 2011; Tyler and Moench, 2012).

While on the surface it may seem that the design process and proposal for Asbury Park – with its high level of public engagement and specific ideas for low-cost, low-controversy means of addressing anticipated impacts of climate change – was inherently more successful than the visions RBD provided for Keansburg or Toms River, especially given public officials' reviews and interpretations of each, such a conclusion could do a disservice to the future of these towns and the ongoing mission of coastal resilience. Should Asbury Park succeed in generating the funding needed to implement some or all of the ideas Sasaki provided for enhancing dunes along the boardwalk and drainage along streets and lakes, local benefits will surely occur: regular flooding and associated costs with be reduced, and investment on the city's west side may even improve with the attention to public realm elements there. But none of these elements relieve the potential devastation of storms more powerful or more frequent than Hurricane Sandy, or of other projected impacts of climate change, like heat waves and strains on regional power supply.

Designers, planners, and public officials today remain hesitant or even resistant to discussing managed retreat or major infrastructural overhaul at the scale proposed for Toms River and Keansburg. The limited interest and ability of those two towns to further explore ideas like relocation and infrastructural innovation following RBD reflect the low level of influence such proposals have on the American planning field. The relatively simplicity of the final proposals for Asbury Park incites questions of whether highly participatory or communicative planning, discussed in Section 2.3, is an effective means of generating solutions at the scale required for long-term climate resilience. Global examples like the Dutch government's replacement of homes in increasingly flood-susceptible regions with natural buffer park space, discussed Section 2.1, though, indicate that resilience on such a grand scale may not only be possible, but also necessary to avoid the worst social, economic, and structural effects of climate change. The proposal for Toms River, although generated with less public or governmental support than other ideas, may well represent the scale of action and innovation needed for areas like this to

maintain their critical elements under unpredictable environmental conditions. Despite the success of the RBD process at providing new ideas and potential partnerships for long-term planning in these Jersey Shore towns, the competition was not sufficient to elevate the importance of large-scale concepts of resilience in a small-town landscape. But it was, perhaps, a step toward normalizing discussion of such ideas in the fields of planning and design.

6.3 Next Steps

Although it is far from the only tool we will need to develop designs and policies to address climate change, the design competition seems, for the time being, here to stay. The competition format remains popular in cities and states seeking ideas to address resilience, as described in Section 1.1, and it continues to evolve. Rebuild By Design was unique in many ways, including the substantial resources that the competition had on hand for promotion, design research, and implementation. In exploring how the design competition experience affected the resilience strategies and planning priorities of participating municipalities that did not win funding, however, this thesis provides a perspective that applies beyond RBD. Here, I propose ways to help future resilience competitions better serve the places and people for whom they are generating ideas, as well as potential implications and recommendations for future exercises in policy innovation for resilience planning and related suggestions for further research.

1. Resilience competitions should not end with announcement of winners or distribution of funding; follow-up research and support will be needed.

To improve the effectiveness of resilient design competitions and build upon lessons learned, the results and impacts of these processes must continue to be evaluated. Independent researchers may fill this role, but the organizations that sponsor these competitions may find that following up with participants can increase the impact of their own efforts. Several of the municipal officials and planners that I spoke with described a lack of transparency in the RBD process: they were not told why their sites were selected, how the winners were

determined, or when and where funding might be available for the designs that did not win. They were not asked to reflect on their experiences after the close of the competition, and consequently a great opportunity for evaluation of an innovative federal program seems to have been missed. While not all competitions and resilience programs will have resources at the scale of RBD, devoting some capacity to communication and follow-up with participating public officials would provide measurable improvements to their experiences and post-competition opportunities as well as future design competition processes.

2. 'Unfunded finalist' municipalities should seek opportunities to maintain or grow public interest in resilient design after the competition ends.

As long as there are urban design competitions, there will continue to be 'unfunded finalists.' Many competitions, unlike RBD, do not promise that any proposals will be funded for implementation, and all winning ideas are effectively unfunded finalists. In other scenarios, competitions may have only one phase, and every idea submitted could be considered a part of this category. This research has shown that a resilient design competition has the potential to provide a municipality with some opportunities for learning and growth regardless of whether the local proposal is funded for implementation. In particular, as noted by the perspective of Ocean County's director of planning and exemplified by the RBD experience of Asbury Park, the exercise of visioning a new future for a place can help generate actionable ideas and the public engagement needed to support them.

Every unfunded finalist has a proposed future on the table, available for pursuit, critique, or adjustment. Although officials from Asbury Park and Keansburg sought funding for the ideas proposed through grant applications and inquiries, none of the towns seems to have brought the RBD proposals back to its citizens for discussion or as a spark for other ideas. Had they done so – through, perhaps, a series of public meetings and events revising RBD – municipal officials and planners could have potentially built a more unified public call for specific resilience measures, and thus a stronger case for their funding inquiries. Based on the experiences

described and explored here, I recommend that officials and planners representing unfunded finalist sites work to create events and materials that keep resilient design in the public eye. Urban designers should, if possible, be part of these follow-up processes to support public visioning and idea generation. Although such activities would ideally occur shortly after the close of a competition, towns like Toms River, Asbury Park, and Keansburg – which continue to recognize the increasing risks and impacts of climate change – are certainly still in a position to reengage with the field of resilient design.

3. Resilience competitions should be focused on specific landscape typologies or coherent regional scales in order to minimize unequal distribution of interest or resources.

RBD revealed some potentially unforeseen limitations to an open call for ideas with pilot site options spanning multiple states. As the municipal leaders and planners from central New Jersey observed, among designers there was a higher interest in the immediate New York City region than in its distant suburbs. Institutional resources may have been more readily available for design teams focused on New York, where the Municipal Art Society and Van Alen Institute had networks to support outreach and public engagement efforts. Competitions designed to focus on more geographically, economically, and environmentally coherent regions may help generate a range of proposals for sites that exist outside the limelight. At the federal level, future competitions may be based on environmental typology; for example, urban designers, planners, and engineers could be invited – in separate competitive processes, each with designated funding and supportive resources – to propose resilient future concepts for coastal towns, urban centers, or rural areas, with the option of selecting pilot sites across the country. States or cities may continue to host more geographically narrow events, like Louisiana's Changing Course or Boston's Living with Water competitions. These and other recent processes may serve as models for government agencies or other organizations hoping to focus attention on generating ideas for areas like the Jersey Shore.

4. A federal pilot program showcasing large-scale infrastructure innovation or managed retreat could help break down the nationwide stigma against such ventures.

Across the U.S., the biggest ideas in resilience thinking are essentially taboo. Sasaki took a known risk in proposing dramatic inland retreat in the barrier island region, and its proposal for hundreds of acres of natural infrastructure in the Bayshore was nearly as politically complex. Designers, planners, and policymakers are largely not speaking up for the validity of such grand proposals, which may just be necessary to match the scale of impacts anticipated to coastal communities facing climate change. Public investment could sway the perception. In the Netherlands, as discussed in Section 2.1, the government has sponsored neighborhood retreat from floodplains and the long-term planning and design efforts needed to ease the transition and create resilient landscapes. Replicating a pilot project like this in the U.S. could, if planned carefully and with significant public involvement, open the fields of planning and design to put forward more diverse visions for resilient coastal communities. Political leaders and decision-makers would then have a better understanding of the actual steps involved in achieving a large or long-term planning goal, and such proposals would become more feasible. While the upfront cost of such a demonstration project could be huge, it may pale in comparison to repeated flood damage and rebuilding of our current coastal landscape.

5. Enabling regional governance may be key to helping coastal communities achieve resilience through planning and redevelopment.

Big steps toward resilience may need to be demonstrated at the federal level, but in a political and environmental landscape as diverse as the U.S., built on independence and democracy, most land use and development decisions must be addressed through lower level governance with more direct empowerment of the people immediately affected. Local government leaders with an understanding of risk and resilience, as we have seen, are frustrated by the limitations of home rule tradition. I believe that one of the greatest marks RBD left on these small Jersey Shore towns was the idea of long-term planning in collaboration with

neighboring municipalities, and an understanding of the scale of infrastructural and economic benefits that such regional collaboration could bring. While no leaders are proposing a system of regional governance in New Jersey just yet, there is an emerging interest among county and municipal officials in potentially broadening the scale of local land use planning and development proposals to achieve resilience. States like New Jersey should enable towns to form partnerships or empower counties on cross-boundary planning issues.

Fostering regional partnerships in coastal states would broaden the scope of resilience planning and the realm of feasible design and policy proposals. In one scenario, regional planning could become a power and responsibility of county governments; as representatives of Monmouth and Ocean County demonstrated, these agencies have been able to prioritize resilience planning and produce specific recommendations for town actions. Regional alliances could also take an ad hoc form, where town governments could formalize partnerships to address cross-boundary concerns like dune management and coastal flooding. Whether led by county governments or town partnerships, regional planning alliances could propose and obtain funding for projects at scales previously only possible through federal intervention. These projects would likely be competitive for state and federal funding, as they would promise impacts for large stretches of population across several towns. Sasaki's design for the restoration of Natco Lake highlights the potential scale of flood control and open space benefits that could be championed and realized through a Keansburg-Union Beach-Hazlet area partnership. A proposal for retreat, as illustrated for Toms River, Berkeley, and Seaside Heights, perhaps necessary to sustain some coastal communities, may hinge on the creation of regional partnerships. Town government coalitions, with time and investment, could help break down entrenched localism among town residents by illustrating the gravity of climate change risk and the benefits of long-term, regional actions like inland development. Enabling and supporting cross-boundary partnerships in New Jersey would demonstrate the potential for regional governance elsewhere in the U.S. It could be a complex undertaking, but is not without

precedent; research on global regional governance models and their potential translation to U.S. states should be a critical element in the pursuit of a resilient future.

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The threats of climate change loom large over these small towns. For the Toms River, Asbury Park, Keansburg and others, planning has, until recently, been largely an independent effort, impacted perhaps occasionally by the development of road or coastal infrastructure through larger government intervention. Hurricane Sandy served as this region's warning that business-as-usual planning and development will not meet the needs of these towns or the people that depend on them once storms, flooding, and other effects of climate change begin to occur more often. "Resilience" is on the tips of their tongues, and it means more than just rebuilding. Being a part of a federally-funded, innovative and creative effort to visualize resilient futures undoubtedly raised attention and increased understanding of the degree of the challenge and the need for substantial planning. Without funding for implementation of the ideas proposed, however, the traceable effects of RBD on these towns were only indirect. But even for towns able to pursue other methods of redevelopment and preparation, the design competition can serve as one of several critical steps in the realization of resilient planning, design, and development. More resources and support will be needed for resilient design efforts at the local, regional, and federal level, and lessons from the experiences of municipal officials and planners should serve to inform future policy innovation on this front.

Appendix 1: Interview Guides

Questions for Public Agencies:

- Tell me about your agency's/organization's mission and work prior to Hurricane Sandy and Rebuild by Design (RBD).
    - What were priority initiatives, and how were these determined and addressed?
    - What other organizations (public or private) would you regularly work or be in touch with (consultation or collaboration)?
    - How were climate change and storm risk discussed and addressed? What kinds of initiatives were discussed and/or launched, and how did they fare?
    - Did you have a personal or agency-wide definition of 'sustainability,' 'resilience', '[climate] risk', or 'rebuilding' – formal or informal?
- Tell me about the experience of working with the design team and the Rebuild by Design process.
    - What were your expectations when the process began?
    - How were you invited? What was your group's role, and did it change at all over the course of (November 2013-April 2014)? What organizations, agencies, or individuals where you working with?
    - What were the format and time commitment of your participation?
    - Were any events or exercises particularly (1) helpful, memorable, (2) challenging, or frustrating? What did you find (1) most and (2) least valuable about the process?
- Did the experience provide you as an individual or your agency with any new insights, knowledge, or ideas regarding:
    - (1) sea level rise, storm events, or climate change risk?
    - (2) opportunities to address challenges via design/architecture/structural interventions?
    - (3) opportunities to address challenges via new policy interventions?
    - (4) the concerns or ideas of other agencies (federal, state, local, nongovernmental) or the public? Opportunities to build trust or collaborative relationships?
- What were your impressions of the design team's final proposal?
    - Was it feasible? Useful? At all implementable without federal funding?
    - What might have been lacking, and why?
    - What elements were most and least interesting to your organization in terms of future work?
- Tell me about your work since the close of the competition.
    - What are priority initiatives, and how are these being determined and addressed?
    - What other organizations are you working with (consultation or collaboration)?
    - How are climate change and storm risk discussed and addressed? How are new or ongoing initiatives being discussed and/or launched?
- What are your impressions of the effects of your agency's/organization's participation in RBD?
    - Are you adopting any new initiatives, techniques, or collaborative/consulting partners? Why or why not?
    - Is there anything else (we haven't discussed) that you or your agency may have learned or gained from the experience?

    - What might have been lacking or missing from the process? Can you think of any changes to the process or additional support that might have helped your community learn or implement more after the competition ended?
- I asked earlier about a personal or professional definition of 'resiliency.' Would you say the experience of participating in the design competition challenged or changed that for you or your agency? If so, how? Do you see any long-term implications of this?
- Is there anyone else you'd recommend I speak with?

Questions for Design Team:

- Why did you choose the New Jersey coastal region and each of the three specific pilot sites to pursue your design strategy?
- When and how did you first get in contact with primary stakeholders from each of the three pilot site areas?
- If you can recall, what did your initial design ideas look like when you first presented them to municipal stakeholders (late 2013)?
- Tell me about the experience of working with each of the three pilot project community stakeholders:
    - Who were the primary stakeholders, and what was the level of interest and engagement in each group?
    - How were the roles of government agencies, nonprofit/advocacy groups, and the public determined, and how did they vary across the three communities?
    - I'm particularly interested in the genesis of the 'Rebuild One City' event in Asbury Park, which was fairly unique among all RBD experiences. Who first suggested this event? Who coordinated it? Were any similar public events considered in other stakeholder communities – why or why not?
- How did stakeholder engagement affect the final pilot project proposals in each community? Did any particular event or meeting with stakeholders generate or uncover ideas that particularly influenced any of the final pilot proposals?
- How did/does the competition format influence your approach to design or collaboration? Had you been commissioned by any of these municipalities, how might your process or outcomes have been different?

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