



Inside Front Cover

NY Rising Community Reconstruction Program Village of Amityville/Copiague Planning Committee	
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This document was developed by the NY Rising Community Reconstruction (NYRCR) Village of Amityville/Copiague Planning Committee as part of the NYRCR Program within the Governor's Office of Storm Recovery. The NYRCR Program is supported by New York State (NYS) Homes and Community Renewal, NYS Department of State, and NYS Department of Transportation. The document was prepared by the following consulting firms: Jacobs and Cameron Engineering & Associates, LLP.



CAMERON ENGINEERING & ASSOCIATES, LLP



Foreword

Introduction

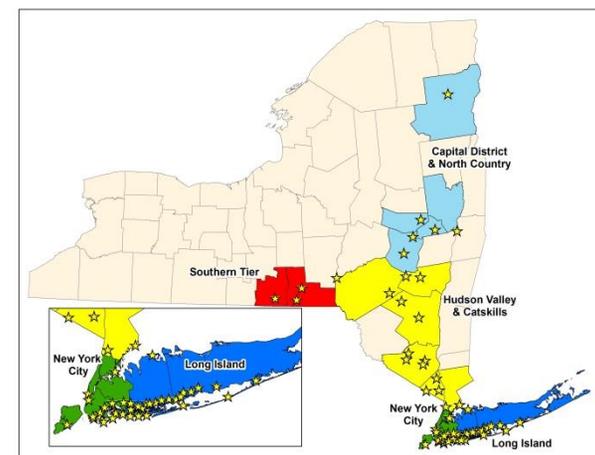
In the span of approximately one year, beginning in August 2011, the State of New York experienced three extreme weather events. Hurricane Irene, Tropical Storm Lee, and Superstorm Sandy wreaked havoc on the lives of New Yorkers and their communities. These tragic disasters signaled that New Yorkers are living in a new reality defined by rising sea levels and extreme weather events that will occur with increased frequency and power. They also signaled that we need to rebuild our communities in a way that will mitigate against future risks and build increased resilience.

To meet these pressing needs, Governor Andrew M. Cuomo led the charge to develop an innovative, community-driven planning program on a scale unprecedented and with resources unparalleled. The NY Rising Community Reconstruction (NYRCR) Program empowers the State's most impacted communities with the technical expertise needed to develop thorough and implementable reconstruction plans to build physically, socially, and economically resilient and sustainable communities.

Program Overview

The NYRCR Program, announced by Governor Cuomo in April of 2013, is a more than \$650 million planning and implementation process established to provide rebuilding and resiliency assistance to communities severely damaged by Hurricane Irene, Tropical Storm Lee, and Superstorm Sandy. Drawing on lessons learned from past recovery efforts, the NYRCR Program is a unique combination of bottom-up community participation and State-provided technical expertise. This powerful combination recognizes not only that community members are best positioned to assess the needs and opportunities of the places where they live and work, but also that decisions are best made when they are grounded in rigorous analysis and informed by the latest innovative solutions.

One hundred and two storm-affected localities across the State were originally designated to participate in the NYRCR Program. The State has allocated each locality between \$3 million and \$25 million to



Map includes those NYRCR Communities funded through the CDBG-DR program, including the NYRCR Communities announced in January 2014.



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implement eligible projects identified in the NYRCR Plan. The funding for these projects is provided through the U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant – Disaster Recovery (CDBG-DR) program.¹

Forty-five NYRCR Communities, each comprising one or more of the 102 localities, were created and led by a NYRCR Planning Committee composed of local residents, business owners, and civic leaders. Members of the Planning Committees were identified in consultation with established local leaders, community organizations, and in some cases municipalities. The NYRCR Program sets a new standard for community participation in recovery and resiliency planning, with community members leading the planning process. Across the State, more than 500 New Yorkers represent their communities by serving on Planning Committees. More than 400 Planning Committee Meetings have been held, during which Planning Committee members worked with the State's NYRCR Program team to develop community reconstruction plans and identify opportunities to make their communities more resilient. All meetings were open to the public. An additional 125-plus Public Engagement Events attracted thousands of community members, who provided feedback on the NYRCR planning process and proposals. The NYRCR Program's outreach has included communities that are traditionally underrepresented, such as immigrant populations and students. All planning materials are posted on the NYRCR Program's website (www.stormrecovery.ny.gov/nyrcr), providing several ways for community members and the public to submit feedback on materials in progress.

Throughout the planning process, Planning Committees were supported by staff from the Governor's Office of Storm Recovery (GOSR), planners from New York State (NYS) Department of State (DOS) and NYS Department of Transportation (DOT), and consultants from world-class planning firms that specialize in engineering, flood mitigation solutions, green infrastructure, and more.

With the January 2014 announcement of the NYRCR Program's expansion to include 22 new localities, the program comprises over 2.7 million New Yorkers and covers nearly 6,500 square miles, which is equivalent to 14% of the overall State population and 12% of the State's overall geography.

The NYRCR Program does not end with this NYRCR Plan. Governor Cuomo has allocated over \$650 million of funding to the program for implementing projects identified in the NYRCR Plans. NYRCR

¹ Five of the 102 localities in the program—Niagara, Herkimer, Oneida, Madison, and Montgomery Counties—are not funded through the CDBG-DR program.



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Communities are also eligible for additional funds through the program's NY Rising to the Top Competition, which evaluates NYRCR Communities across eight categories, including best use of technology in the planning process, best approach to resilient economic growth, and best use of green infrastructure to bolster resilience. The winning NYRCR Community in each category will be allocated an additional \$3 million of implementation funding. The NYRCR Program is also working with both private and public institutions to identify existing funding sources and create new funding opportunities where none existed before.

The NYRCR Program has successfully coordinated with State and Federal agencies to help guide the development of feasible projects. The program has leveraged the Regional Economic Development Council's State Agency Review Teams (SARTs), comprised of representatives from dozens of State agencies and authorities, for feedback on projects proposed by NYRCR Communities. The SARTs review projects with an eye toward regulatory and permitting needs, policy objectives, and preexisting agency funding sources. The NYRCR Program is continuing to work with the SARTs to streamline the permitting process and ensure shovels are in the ground as quickly as possible.

On the pages that follow, you will see the results of months of thoughtful, diligent work by NYRCR Planning Committees, passionately committed to realizing brighter, more resilient futures for their communities.

The NYRCR Plan

This NYRCR Plan is an important step toward rebuilding a more resilient community. Each NYRCR Planning Committee began the planning process by defining the scope of its planning area, assessing storm damage, and identifying critical issues. Next, the Planning Committee inventoried critical assets in the community and assessed the assets' exposure to risk. On the basis of this work, the Planning Committee described recovery and resiliency needs and identified opportunities. The Planning Committee then developed a series of comprehensive reconstruction and resiliency strategies, and identified projects and implementation actions to help fulfill those strategies.

The projects and actions set forth in this NYRCR Plan are divided into three categories. The order in which the projects and actions are listed in this NYRCR Plan does not necessarily indicate the NYRCR Community's prioritization of these projects and actions. **Proposed Projects** are projects proposed for



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funding through a NYRCR Community's allocation of CDBG-DR funding. **Featured Projects** are projects and actions that the Planning Committee has identified as important resiliency recommendations and has analyzed in depth, but has not proposed for funding through the NYRCR Program. **Additional Resiliency Recommendations** are projects and actions that the Planning Committee would like to highlight and that are not categorized as Proposed Projects or Featured Projects. The Proposed Projects and Featured Projects found in this NYRCR Plan were voted for inclusion by official voting members of the Planning Committee. Those voting members with conflicts of interest recused themselves from voting on any affected projects, as required by the NYRCR Ethics Handbook and Code of Conduct.

NYRCR Village of Amityville/Copiague is eligible for up to \$14.2 million in CDBG-DR implementation funds.²

While developing projects for inclusion in this NYRCR Plan, Planning Committees took into account cost estimates, cost-benefit analyses, the effectiveness of each project in reducing risk to populations and critical assets, feasibility, and community support. Planning Committees also considered the potential likelihood that a project or action would be eligible for CDBG-DR funding. Projects and actions implemented with this source of Federal funding must fall into a Federally-designated eligible activity category, fulfill a national objective (meeting an urgent need, removing slums and blight, or benefiting low to moderate income individuals), and have a tie to the natural disaster to which the funding is linked. These are among the factors that the Governor's Office of Storm Recovery will consider, in consultation with local municipalities and nonprofit organizations, when determining which projects and actions are best positioned for implementation.

The total cost of Proposed Projects in this NYRCR Plan exceeds the NYRCR Community's CDBG-DR allocation to allow for flexibility if some Proposed Projects cannot be implemented due to environmental review, HUD eligibility, technical feasibility, or other factors. Implementation of the projects and actions found in this NYRCR Plan are subject to applicable Federal, State, and local laws and regulations, including the Americans with Disabilities Act (ADA). Inclusion of a project or action in this NYRCR Plan does not guarantee that a particular project or action will be eligible for CDBG-DR funding or

² The following localities' allocations comprise the NYRCR Community's total allocation: Village of Amityville – up to \$5.6 million; Copiague – up to \$8.6 million



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that it will be implemented. The Governor's Office of Storm Recovery will actively seek to match projects with funding sources.

In the months and years to follow, many of the projects and actions outlined in this NYRCR Plan will become a reality helping New York not only to rebuild, but also to build back better.



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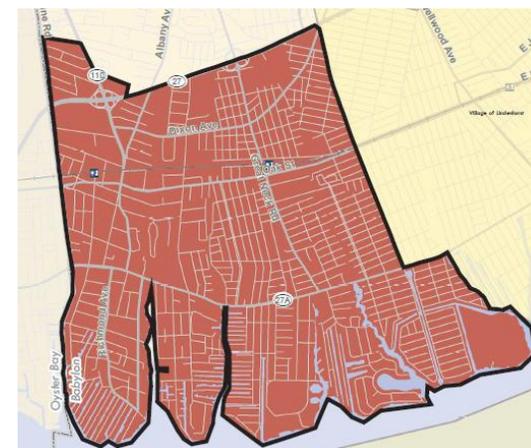


Executive Summary

Overview of NY Rising Community Reconstruction Community: Village of Amityville/Copiague

NY Rising Community Reconstruction (NYRCR) Village of Amityville/Copiague (Community) is one of eight NYRCR Communities identified within Suffolk County. The geographic scope of NYRCR Village of Amityville/Copiague (Community) follows the boundaries for the Village of Amityville and the hamlet of Copiague. The Community is bordered by Massapequa in Nassau County on the west, the Great South Bay to the south, the Village of Lindenhurst to the east and the hamlet of North Amityville to the north. The Village of Amityville and the hamlet of Copiague are suburban communities with a variety of residential neighborhoods each with their own individual character. The residential communities south of Montauk Highway (State Route 27A) are strongly influenced by their location near the water. It is there that homes, and the occasional marine-related commercial establishment, were built on several peninsulas separated by canals. A total of up to \$14.2 million has been allocated for resiliency projects within this Community, up to \$5.6 million for the Village of Amityville and up to \$8.6 for Copiague.

The Village of Amityville, meaning “friendly Village,” was formally incorporated on March 3, 1894. In the early 1900s, regular rail service and proximity to the Bay established the Village as a popular tourist destination. Copiague is an Indian word that means “sheltered harbor” or “sheltered place.” Although Copiague was a weekend and summer retreat for New York City residents, the waterfront remained undeveloped until the 1920s, at which time developers began filling waterfront areas and constructing homes. However, the Great Depression of the 1930s put an end to early development. In the 1950s and 1960s, as part of the wave of residential development after the dawn of the “suburban era,” the waterfront area of the Village of Amityville and Copiague was fully developed. Today, the population of the Village of Amityville is 9,662 and the population of Copiague is 20,732.



Map of the NYRCR Village of Amityville/
Copiague Community.
(Image credit: Jacobs Engineering Consultant Team)



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The Village of Amityville and hamlet of Copiague were severely affected by Superstorm Sandy's high winds, heavy rain, and strong tides. The houses and roads south of Montauk Highway (Merrick Road) experienced severe flooding, downed trees, and prolonged periods of power and communications failures. The devastation was especially pronounced in the neighborhoods south of Montauk Highway along the canals. Many residents lost their homes and all of their personal belongings, while many others are still making repairs with the simple goal of getting back into their homes and returning to normal. Residents were displaced for long periods of time, some of whom are still not able to return to their homes. Some homes have already been raised considerably to avoid flooding in the next storm. There are still the vacant houses, many of which have been abandoned by their owners.

The waterfronts took the biggest hit. Superstorm Sandy damaged many structures, marinas, docks, yacht/boating clubs, and other maritime businesses in the community, as well as public spaces, parks, and beaches. The Amityville Beach Pavilion experienced six feet of storm surge during the Superstorm Sandy event. From the Pavilion structure to the site's electric, plumbing, and fencing just about everything was damaged or destroyed. Tanner Park in Copiague also sustained damage.

In the Village of Amityville 914 homes and in Copiague 2,187 homes were damaged. In total, 23% of the entire housing stock in the Village of Amityville was damaged and 27% of the entire housing stock in Copiague was damaged. In Copiague, the Town of Babylon has received 185 permit requests for storm damage repairs. The Village of Amityville has processed 60 permits for storm damage repair, including building, demolition, plumbing, and repairs to docks and fences. They have also processed 15 permits specifically for elevating homes.

The most critical issue facing us in the Village of Amityville/Copiague in the post-Superstorm Sandy environment is recovery from the devastation of the event. Our community is also looking forward. We wish to maintain our quality of life as a waterfront community in a manner that is more resilient for future storms. It is critical that the community rebuild to minimize future storm damages on homes and businesses. This involves identifying ways to prevent damage to public and private property and increasing the future of resiliency of housing in the community. Mitigating repetitive flooding of homes, businesses, and roads is a critical issue. The health of the local economy is tied to its waterfront location;



The Village of Amityville and hamlet of Copiague were severely affected by Superstorm Sandy's high winds, heavy rain, and strong tides.

(Photo credit: Village of Amityville/Copiague NYRCR Planning Committee)



Our waterfront was severely damaged from Superstorm Sandy as evidenced by the devastation at the Amityville Beach Pavilion.

(Photo credit: Village of Amityville/Copiague NYRCR Planning Committee)



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therefore, protecting local assets such as our waterfront parks from future storm damage is imperative to the economic resiliency of this community.

If we want to be a more resilient community in the future, we recognize that a critical issue is ensuring that emergency and evacuation information and facilities are available to residents. This is especially critical for our special needs populations who require assistance before, during, and after emergency events. During Superstorm Sandy, certain neighborhoods were difficult to evacuate from and deliver supplies to because of weight limits on bridges; the lack of proper police, fire, highway and municipal equipment; and flooding of streets. These critical community planning issues must be addressed.

NYRCR Village of Amityville/Copiague recognizes that their infrastructure is vulnerable. Bridge weight limits several neighborhoods from reaching emergency facilities. Roadway flooding from a deficient storm sewer system, deteriorated bulkheads, and low roadway elevations impairs critical access, hampers the ability to evacuate, and allows floodwaters to damage homes and property. Superstorm Sandy highlighted regional emergency management issues beyond local control, such as the lack of fuel, power, and communications availability.

The waterfront and our many natural and cultural resources located there took the brunt of Superstorm Sandy's force. Creeks, canals and wetlands areas were flooded leaving damage and debris. Our waterfront parks and beaches were eroded and facilities such as the Amityville Beach Pavilion were destroyed. Not only do our parks and natural areas provide recreational opportunities, but they also serve as buffer to Great South Bay for the inland residential areas. Our natural and cultural resources are critical to the quality of life in our Community and must be strengthened and made more resilient.



During Superstorm Sandy, certain neighborhoods were difficult to evacuate from and deliver supplies to because of weight limits on bridges.

(Photo credit: Jacobs Engineering Consultant Team)



Mitigating roadway flooding is critical for the Village of Amityville/Copiague future resiliency.

(Photo credit: Village of Amityville/Copiague NYRCR Planning Committee)



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NYRCR Program: A Community-Driven Process

In keeping with Governor Cuomo's emphasis on bottom-up planning, members of the Village of Amityville/Copiague Community were involved in each step of the NYRCR Program. The NYRCR Village of Amityville/Copiague Committee was composed of residents who could speak directly from experience of the character of the community, its needs, and strengths. Eleven Committee meetings were held as of March 15, 2014. All Committee meetings were open to the public, with meeting dates and times posted on the NYRCR website (www.stormrecovery.ny.gov/nyrcr).

One of the first steps in the NYRCR planning process was the development of a Community Vision Statement. At the first public event, Community members viewed the draft Community Vision prepared by the NYRCR Planning Committee and provided direct feedback to ensure that their vision for a resilient future would be included. Once we felt confident that our community was well represented in the Community Vision Statement, we adopted it as final. All strategies and projects identified were measured against the Community Vision Statement to ensure that recommended actions would help our Community in achieving its desired goals.

The Community at-large was invited to take part in the NYRCR Program through a variety of methods. Their feedback was reviewed by the Committee and incorporated into the decision-making process that informed the development of this Plan. Three well-attended, open-house style events were held during the development of the plan and a fourth will present this final document. Across the eight NYRCR Communities in Suffolk County, thousands of participants attended Committee meetings and Public Engagement events. Additionally, the public was encouraged to complete a web-based survey to gauge public opinion on the Proposed Projects in conjunction with Public Engagement Event 3.

Special efforts were taken to reach out to younger members of the community. They were invited to participate in a web-based "Next Generation" survey to gather feedback on Proposed Projects that would likely affect their futures in the Community.

Community Vision Statement

The Village of Amityville and the hamlet of Copiague are small, historic, bayside communities located on the Great South Bay of Long Island that wish to maintain a safe, quiet and inviting character. We will work cooperatively to preserve the traditional continuity of our historic landmarks, maritime culture and suburban lifestyles and protect, maintain and enhance the quality of our natural resources, which are fundamental to our quality of life and are the basis of our local economy. We will plan for new and improved strategies which will eliminate potential loss of life and minimize damage caused by future natural disasters.



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NYRCR Plan: A Blueprint for Resiliency

An asset inventory was conducted for the Village of Amityville and Copiague to identify assets, both built and natural, which are critical to the safety, resiliency, and character of the Community. The identified assets were evaluated in detail to understand their level of risk, or potential for damage, to future storm events. Identification of risks to critical assets provided the framework within which resiliency strategies were developed. Strategies are general approaches to types of projects, programs, policies, or other actions that specifically address an identifiable need or leverage an existing opportunity within the Community. For every need or opportunity, potential strategies were generated for each resiliency issue. The list of strategies spanned an array of methodologies and timeframes, from preparedness to retrofits, from immediate procedural improvements to long-range capital investment programs.

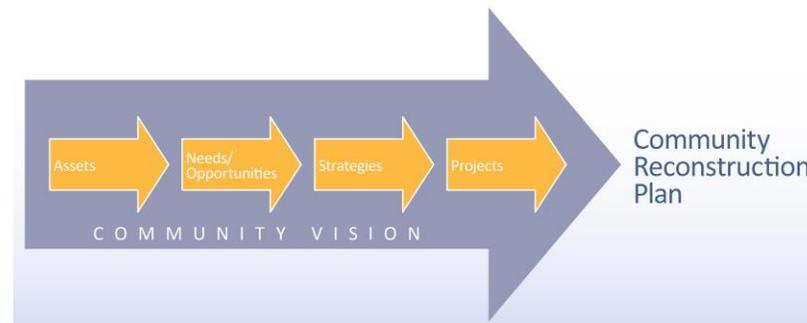
Three tiers of projects were identified: Proposed Projects, Featured Projects, and Additional Resiliency Recommendations. Proposed Projects are projects proposed for funding through a NYRCR Community's allocation of CDBG-DR funding. Two of the Proposed Projects identified by the Committee mitigate flooding through storm sewer and bulkhead improvements. One Project addresses Community safety by improving deficient bridges in Copiague while another Project makes a waterfront park more resilient in the Village of Amityville. Two Projects address Community Planning for future storm events by obtaining resiliency equipment and a generator for a local emergency evacuation center. There are no Featured Projects for the Community. Over the course of the planning process, the Committee considered a number of additional projects and ultimately decided to include these as Additional Resiliency Recommendations. Additional Resiliency Recommendations are projects and actions that the Planning Committee would like to highlight and that are not categorized as Proposed Projects or Featured Projects. It is important to note that there is no priority order or ranking of projects aside from the project tier.

The following table presents the six Proposed Projects by Strategy that were identified by the NYRCR Village of Amityville/Copiague Committee:



In the days, weeks, and months after Superstorm Sandy, our Community pulled together to rebuild, and build back better.

(Photo credit: Village of Amityville/Copiague NYRCR Planning Committee)



Community Reconstruction Planning Process
(Image credit: Jacobs Engineering Consultant Team)



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Table ES- 1: NYRCR Village of Amityville/Copiague Resiliency Projects

Strategy	Project Name	Project Category
Establish local emergency evacuation routes and facilities.	Local Emergency Evacuation Center Permanent Generator	Proposed Project
Improve emergency information, policies, procedures and tools used by local government departments (police, fire, highway, etc.)	Resiliency Equipment	Proposed Project
Mitigate repetitive flooding.	Storm Sewer and Roadway Drainage Improvements	Proposed Project
	Waterfront Resiliency Improvements	Proposed Project
Ensure access to critical facilities and evacuation routes.	American Venice Bridges Improvements	Proposed Project
Improve resiliency of waterfront parks.	Amityville Beach Pavilion Restoration & Resiliency	Proposed Project



Section I: Community Overview

This NY Rising Community Reconstruction (NYRCR) Community (Community) is made up of the Village of Amityville and the unincorporated hamlet of Copiague, both located within the Town of Babylon. The Community is located in the southwest corner of Suffolk County on Long Island, New York, adjacent to Nassau County on the west, the Great South Bay to the south, the Village of Lindenhurst to the east and the hamlet of North Amityville to the north. The Community is located approximately 35 miles east of Manhattan and 70 miles west of Montauk Point.

Superstorm Sandy heavily damaged more than 3,000 of our homes in the Village of Amityville and the hamlet of Copiague, from the modest to the sumptuous. But the lingering financial, emotional and other difficulties tell only a part of the NYRCR Village of Amityville/Copiague story, two communities that have worked together on the NYRCR Planning Committee (Committee) to plan a more resilient future. Ten members of the Committee were directly affected by the storm. We also have seen residents within the Community continue working with one another to rebuild in the spirit that saw strangers helping strangers, even on a night when they could barely help themselves. “Left and right houses were ruined,” said a teenager who saved the family boat. “In the weeks that followed I tried to help everyone around as much as I could... moving furniture, cleaning debris, and anything that would help them through this time.” And that included neighbors too old or ill to do the work themselves – or too strapped to pay.

Many of us are grateful to be back in our homes and neighborhoods, where a few homes still show signs of the sudden devastation – a word we’ve heard and used often when we’re asked about our experiences in the days and months after the storm and its moon- and wind-driven tides. “In all my years of living on the water, I’ve never seen a storm that devastated so much and so many,” said one of the co-chairs of the NYRCR Planning Committee and president of the Copiague Chamber of Commerce, who went door-to-door the week after the storm with gift cards and supplies of everything from clothing to toothpaste. For some families in our proud communities, taking “charity” was an “alien and humbling concept,” but so many of us had no choice after all our possessions were destroyed. “And when they were back on their feet,” a Committee Member added, “they turned around and helped others.”



Exterior of homes and property damaged by Superstorm Sandy.



Interior of home damaged by Superstorm Sandy.



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Even people frustrated by the pace of recovery, especially by slow insurance payments, still express gratitude for the heroism and skill of the emergency first responders, volunteers, and professionals alike. We are proud of the grit, generosity, and determination displayed by our friends, families, and officials in tackling our collective and individual challenges. Various organizations have raised funds to help community causes, such as at the annual Summer Luau of the Amityville Kiwanis Club that drew more than 100 people at Amityville Beach Pavilion that was demolished by Superstorm Sandy. (The event featured a drink, concocted for the occasion, called the Sandy Stomper.) A lot of our kids got heavily involved. As a multi-cultural community, we did not forget the growing number of Latino and Polish immigrants whose limited English skills could endanger them in an emergency or hamper their efforts to get assistance. “Ever since the pavilion was destroyed we haven’t been able to offer the same level of services to our youth, especially poorer ones,” said a Committee Member who is leading an effort to restore the Amityville Beach Pavilion that overlooks the Great South Bay. “For some of them it’s the only place they can get swimming lessons and gather in a safe and healthy place.”

Our community was pleased with the world-wide media attention after a local builders group and volunteers rebuilt, furnished, and decorated the home of a six-year old leukemia victim – his family did not have flood insurance – while they were away at a Make-A-Wish Foundation outing. That became, for many, a symbol of collective caring—not just for our area but also for all Long Island. “It was just really an incredible feeling,” said the boy’s mother.

Although community has come together and much has been accomplished, the Committee and the Community we represent are not kidding ourselves. We know a lot of work remains before we can say that NYRCR Village of Amityville/Copiague is ready for the next Big One. “Sandy wasn’t even a hurricane,” said one homeowner who watched the tide rise violently in his home until it stopped just inches below a desktop with equipment essential to his business. “If it were a Category 3 or 4, I believe the winds would have driven the tides north of Sunrise highway. I know it has never happened before but we have to be prepared for it.”

That’s one of the reasons why we believe that the work of the Committee and the many people who participated in the community-driven planning set in motion by New York Governor Andrew M. Cuomo, as well as local and Federal officials, was so important to our community. “The NY Rising work was wonderful because it involved the people who lived through it,” said one Committee Member who

Voices

“I lived in Copiague Harbor for 25 years and seen many storms but we never got a drop in our house. Sandy put us under...”

“I’ve fished and surfed here all my life but I’ve never seen water moving so fast, so high, so unstoppable...”

“People who lived by the water all their lives, people who respected it, had to be rescued by boats, picked from rooftops. They weren’t prepared because they’d never seen anything like it...”

--From interviews with Village of Amityville/Copiague residents



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especially appreciated the extensive community outreach. “Instead of politicians telling us, ‘this is what we are giving you,’ they listened to us and asked what it was we needed. That gave it a lot of credibility.”

With the involvement of all sectors of the community and the assistance of Jacobs and Cameron Engineering & Associates, LLP (the Consultant Team), the process produced what we believe to be a sound plan for recovery and resiliency. Perhaps more importantly for the long haul, the program also offered us a planning forum that did more than recognize and respect our experiences, expertise, and preferences. It was a process, from traditional on-site meetings to “virtual town halls” that empowered people and promoted constructive dialogue. The long hours and sound ideas, as well as the can-do attitude, has paid additional dividends; according to one of the co-chairs of the NYRCR Planning Committee, the momentum from the NY Rising process helped restart transit-oriented redevelopment discussions in Copiague outside the immediate flood zone.

But we know it is not enough just to feel good about ourselves and our neighbors and see more people volunteering for community efforts. We know we have to learn from the experience – and from some of the deficiencies we have identified, particularly in public infrastructure and emergency service equipment. These must be addressed and remedied if we are to be truly resilient.

Beyond the personal imperative of protecting our families by having the right supplies and equipment in our homes, as well as an evacuation plan, many of our needs can only be met with the assistance of Federal, State, and regional governments. As a small Village and unincorporated hamlet, we know that huge infrastructure projects are beyond the ability of Amityville and Copiague to plan and finance on our own. That is not a situation unique to our communities, nor is it a slap at our local officials. They have performed admirably. Many other small suburban villages and hamlets need help “from above” to undertake major public works initiatives, such as bulkheads, storm sewers, and heavy-duty emergency service equipment. That’s another reason why the NYRCR Program and the aid that may come from it are so essential: It has been a chance for us to make our best case.

Perhaps the easiest and least expensive need to meet, we realize, is providing a place of refuge for people evacuated from their homes. Thus, one of our proposals (all are discussed in greater detail elsewhere in this report) is the designation and equipping of a public place as a community evacuation center. So many of our neighbors told harrowing stories of wading up to a mile through cold, debris-



Public Engagement Event 1, Thursday, September 26, 2013.



Waterfront damage during Superstorm Sandy.



Village of Amityville/Copiague NY Rising Community Reconstruction Plan

clogged water, worrying whether they would be swept away or crushed by a falling tree or electrocuted by a downed power line. But once they made it to safety, they realized that there was no place for them to stay – to get a shower, a bed for a few nights, charge their electronic devices – within their own community. This was more than an inconvenience. Many people had lost cars and being far from their neighborhoods and friends only heightened the sense of disconnection and despair.

We cannot, however, deal only with the aftermath of storms. We need to rebuild and “harden” our infrastructure to mitigate the impact of the next one and the one after that. Clearly, using the latest technology and techniques, storm sewers must be improved in a variety of ways to limit the volume of water that can and did boil up from beneath us. Throughout the Community, Superstorm Sandy also surged over bulkheads that often were inadequate – frankly, we have known this for years – to protect us from flooding even in routine storms. We cannot be left defenseless like that again. For the same reason we are advocating for significant improvements to the bridges of American Venice. We cannot endanger the residents in the 600 homes in this famous low-lying neighborhood because heavy vehicles cannot cross the bridges.

Before we move on to the details of our plans, and talk more about our community, we want to be clear about a few more things: We in Amityville and Copiague understand that recovery remains an ongoing task that requires continued collaboration with Federal, State, and local authorities. We also recognize that we will not get everything we want, certainly not right away. But we are prepared to do our part, to work together to refine our priorities and do everything we can to get what we need. When we are confronted by these and other challenges – such as balancing infrastructure planning and environmental protection and the needs of the most vulnerable – we know that the spirit of our community remains as strong as it was in the face of Superstorm Sandy.

Like families all over Long Island, we all have a lot invested in our homes and neighborhoods. We all love the water or we would not be living near the shore where sometimes even a normal high tide can wreak inconvenience, if not havoc. But beyond dealing with the “now,” we have a responsibility to the future – our children – so they can grow up in safety and feel they can stay on Long Island. As a local teenager wrote in his college admission essay, which he shared with us, “My family, friends and community came together like I have never seen before... everyone banded together to recover. From even the worst of situation, good things can happen. Superstorm Sandy is proof of this.”

Voices

“The outpouring of concern for each other was amazing, phenomenal...”

“The sense of community that came out of this disaster was mind-blowing...”

“We came together and we’ve stayed together...”

--From interviews with
Village of
Amityville/Copiague
residents



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We agree. And now we must act.

A. Geographic Scope of the NYRCR Plan

The NYRCR Plans are intended to address the damage directly resulting from Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. As a result, communities seeking to implement projects indirectly affected by those storms needed to demonstrate how such projects and/or policies would help to mitigate the risk of potential storm damage in the future. Guidance was provided by New York State (NYS) relative to asset location, Risk Assessment and floodplains.

Looking to the future, the community was allowed to choose how to define the geographic scope of the NYRCR Plan to include areas not only where assets are most at risk but also where future construction or reconstruction of existing development should be encouraged; or where key investment to improve the local economy can be instituted. By identifying more resilient areas for future development, the process outlined in this report pays the dividend of guiding our local officials when preparing municipal comprehensive plans as well as making other local regulatory decisions.

The geographic scope of NYRCR Village of Amityville/Copiague (Community) follows the boundaries for the Village of Amityville and the hamlet of Copiague. The Community is bordered by Massapequa in Nassau County on the west, the Great South Bay to the south, the Village of Lindenhurst to the east and the hamlet of North Amityville to the north.

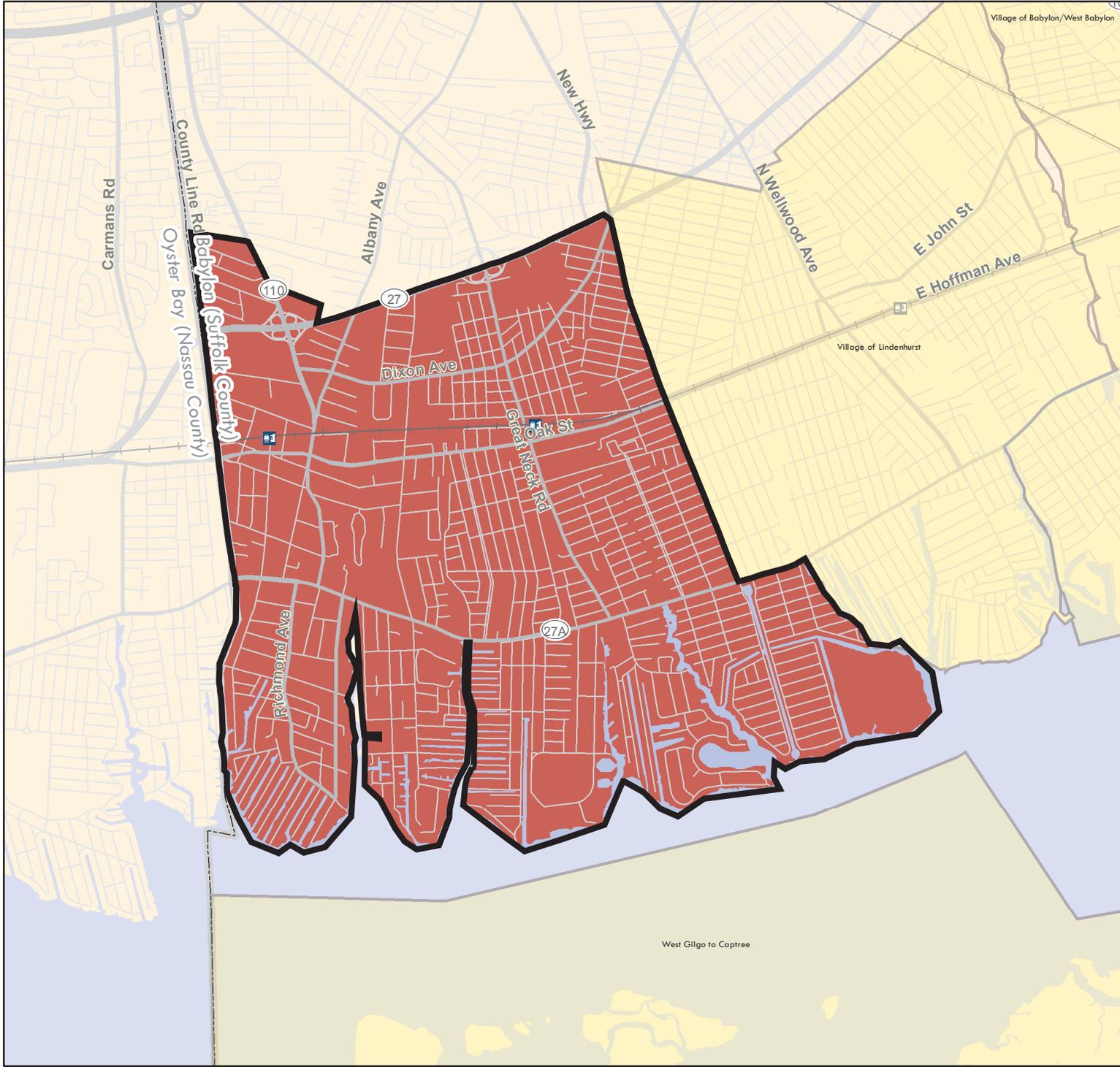


The waterfront location is important to the lifestyle in the NYRCR Village of Amityville/Copiague Community.



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Figure 1: NYRCR Planning Area Location



Legend

- Village of Amityville/Copiague NYRCR Planning Area
- Other NYRCR Planning Areas
- 51 Long Island Railroad Station
- Long Island Railroad

Roads

- Interstate
- Highways
- Streets
- Ferry

Municipal Boundary

0 0.25 0.5 1 Miles

Source: NYS DOT, NYS DOS, MTA





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Historic Context

Long before the arrival of the Colonists in the 1600s, the NYRCR Village of Amityville/Copiague was occupied by the Massapequa Indians. Settlers from the northern part of Long Island in the Huntington area came to the South Shore to harvest salt hay grass in the fall and fish in Great South Bay in the summer eventually established more permanent settlements in the area. In the early years of development, small factories joined water related occupations and farming as the area's main employers. The Village of Amityville, meaning "friendly Village," was formally incorporated on March 3, 1894. In the early 1900s, regular rail service and proximity to the Bay established the Village as a popular tourist destination. Large hotels and large homes were built along Great South Bay.

Copiague is an Indian word that means "sheltered harbor" or "sheltered place." Although Copiague was a weekend and summer retreat for New York City residents, the waterfront remained undeveloped until the 1920s. Up until that time, people lived inland, away from the mosquitoes and closer to the railroad and businesses. During the 1920s, developers began filling waterfront areas and constructing homes. One of the first residential neighborhoods was Amity Harbor, advertised by its developer as "a home for the white-collar man with a car in the front and a boat in the rear." During the 1930s, the Amity Harbor developer sold 93 acres to the Town of Babylon. The land was used by the Town to create Tanner Park. Today, Tanner Park is a recreational facility owned and maintained by the Town of Babylon that has baseball, football, lacrosse, softball, and soccer fields, basketball and tennis courts, a boat launching station, fishing, marina, picnic area, playground, senior center and a beach.

American Venice sits on the eastern border of Copiague. In the 1920s the area was the site of a development project known as "Little Venice." A 1926 Long Island Rail Road booklet advised readers to envision "a Venetian type home, fronting on a broad canal with a large lagoon nearby!" Two winged lions, atop five-story high pedestals on the east and west ends of the site, welcomed prospective buyers. The Great Depression of the 1930s put an end to the early development of American Venice. In the 1950s and 1960s, as part of the wave of residential development after the dawn of the "suburban era," American Venice, Amity Harbor and Copiague Harbor were fully developed.

Present Day

Water is still "the thing" – but not the only thing – in the Community. The Village of Amityville and the hamlet of Copiague are suburban communities with a variety of residential neighborhoods each with



The Village of Amityville has a thriving downtown business district, which is anchored by an area known as the Triangle.



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their own individual character. From Montauk Highway north, these communities contain a number of commercial uses and residential neighborhoods. The residential communities south of Montauk Highway (State Route 27A) are strongly influenced by their location near the water. It is there that homes, and the occasional marine-related commercial establishment, were built on several peninsulas separated by canals. Many of the homes directly on the canals have private docks along the bulkheads behind their dwelling. “The water is what brought us here,” said a member of Amityville’s volunteer fire department who lives a few hundred yards from the Village beach and park. “And the water is why we stay. It’s a way of life.”

The Village of Amityville is known for its charming Victorian houses, picturesque downtown, and waterfront amenities. The Long Island Rail Road (LIRR) station in Amityville is an important destination in the downtown area. Significant points of interest in the Village include an area known as the Triangle: the fork of Broadway and Park Avenue, along with Ireland Place, creating a triangular plot of land at the center of the Village. The Triangle building was built in 1892; more than 100 years later a Gazebo was added to the north point of The Triangle; and in 1994, The Triangle was officially designated “Memorial Triangle” in memory of all who have served the Village. The Village’s thriving downtown business/civic district, which is anchored by the Triangle, includes the Lauder Museum, located in a historic building built for the Bank of Amityville in 1909. The Amityville Historical Society opened the Lauder Museum in 1972.

South of Montauk Highway, the hamlet of Copiague is divided into three major peninsulas that are often considered separate communities: Amity Harbor; Copiague Harbor; and American Venice.

The southwestern peninsula is known as Amity Harbor and is served by the Amityville Post Office. Amity Harbor is located on the western boundary of Copiague, bordered on the east by Howells Creek, north by Montauk Highway, west by Ketcham’s Creek, and on the south by the Great South Bay. The central peninsula is known as Copiague Harbor and is served by the Copiague Post Office. The southeastern peninsula is known as American Venice and is served by the Lindenhurst Post Office. There are three canals that run through the community: the Grand Canal - from Montauk Highway to the Great South Bay, the Santa Barbara Canal - which runs east/west, and the Lugano Canal - which surrounds Indian Island Park. There have been discussions over the past 10 years to create an American Venice Historic Park at the location where the Grand Canal meets Montauk Highway; the site is currently a private



Winged lions mark the entrance to the American Venice neighborhood in Copiague.



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marina. The two lions which were part of the original American Venice development still flank the east and west sides of the canal.

Copiague also includes a LIRR station at the north end of the hamlet. As noted earlier, the area around the station offers a tremendous opportunity for neighborhood-friendly, transit-oriented development, and local officials and civic leaders are exploring potential new Smart Growth projects near the station. The hamlet already has moved forward with compact, mixed-use/multi-family development at Great Neck Road and Oak Street and several public enhancements around the station.

Amityville has a healthy downtown business district along Broadway and Merrick Road at the southern tip of Route 110, a major north/south corridor on Long Island. Copiague's downtown is located along Great Neck Road both north and south of the Copiague Long Island Rail Road station. Sunrise Highway, (State Route 27), is an east-west thoroughfare on the northern end of the community. The businesses along the road are mainly commercial, and include car dealerships and large retail stores. Merrick Road/Montauk Highway (State Route 27A) is the southernmost east-west roadway through both Amityville and Copiague. Merrick Road is an important commercial corridor for both the hamlet and the Village, where retail establishments are generally smaller than the larger stores along Sunrise Highway.

Like Amityville, the economy of Copiague is strongly tied to its location along the water. Maritime commercial businesses include boat repair facilities, boat/yacht and beach clubs, boat builders, and restaurants. Tanner Park, a park owned by the Town of Babylon, is located in Copiague and has a boat ramp, fishing pier, ball playing fields, a meeting pavilion, senior center, and a small beach. Amityville Beach, owned by the Village of Amityville, is an important summer destination offering recreational activities such as the swimming lessons important to community youth.

Demographic Overview

Geographic Area and Data

The Village of Amityville/Copiague NYRCR Planning Area is composed of most of the Village of Amityville Census Designated Place (CDP) and the Copiague CDPⁱ. The CDP level was selected because the availability and detail of current Census data varies by geographic location and level of analysis (CDP,



The economy of the NYRCR Village of Amityville/Copiague is closely tied to its location along the water.



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Census Tract, or Census Block.) The CDP level provided a uniform level of data detail and reporting period.ⁱⁱ

Village of Amityville/Copiague General Demographics

The Village of Amityville/Copiague NYRCR Planning Area is composed of two suburban communities. The population of the Village of Amityville is 9,662 and the population of Copiague is 20,732. The age of the population in both communities shows a typical suburban distribution among age groups, with about 30% of the population between 35 and 54 years old, and the remaining thirds nearly evenly split between residents under 35 and over 55 years old.

The percentages of race and ethnicity vary between the two communities. Eighty-two percent of the population of the Village of Amityville is White, with 10% African American, 2% Asian, and the remaining classified as 4% other and 2% two or more races. Seventy-three percent of the population of Copiague is White, with 8% African American, 2% Asian, and the remaining classified as 13% other and 4% two or more races. Copiague has a relatively large population of residents of Polish backgroundⁱⁱⁱ. The percentage of Hispanic/Latino residents is about 13% in the Village of Amityville and about 33% in Copiague.

Residents report that the majority in both communities either speak English as the only language at home or rate their English proficiency as “very good;” however, in Copiague, approximately one quarter of the residents’ report that they speak English “less than well.” This data was important for the identification of needs and opportunities and the public outreach strategy, as the non-English speaking population represents a community of concern that may not have easy access to important life safety information.

Income and Poverty

Both communities include a diverse range of individual wage earnings. The smallest category of income in both communities is the \$65,000 to \$74,999 range (4%), but all other income categories show a mostly even distribution: In the Village of Amityville, \$10,000 to \$14,999 is 11%, \$15,000 to \$24,999 is 14%, \$25,000 to \$34,999 is 11%, \$35,000 to \$49,999 is 12%, \$50,000 to \$64,999 is 10% and \$75,000 or more is 13%. In Copiague \$10,000 to \$14,999 is 11%, \$15,000 to \$24,999 is 15%, \$25,000 to \$34,999 is 16%, \$35,000 to \$49,999 is 15%, \$50,000 to \$64,999 is 12% and \$75,000 or more is 12%. One difference between the communities is that Amityville’s population reporting incomes under \$10,000 is greater than



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Copiague (24% in Amityville, 14% in Copiague.) This may reflect a greater retiree community, as Amityville has a proportionally greater population aged 55 and older as compared to Copiague. Neither community includes a significant population under 150% of the poverty level, further indicating that the population reporting individual income under \$10,000 is primarily composed of retirees and individuals in similar circumstances, not individuals or families who represent an economically disadvantaged population.

Employment and Journey to Work

Understanding the general character of the communities' workforce helps identify needs, opportunities, and projects to maintain, restore, and enhance the economic vitality of the community. Not unexpectedly, more than half of the residents in both Amityville (59%) and Copiague (64%) work within Suffolk County, and nearly all of the residents in both communities work somewhere within New York State (99%). About 75% of workers in both communities drive alone to work or carpool. The next largest means of travel to work is by rail (8% in Amityville, 6% in Copiague). The percentage of zero-car households in either community is less than 4%.

While residents in each community are employed in a diverse array of industries, educational services, real-estate and related services, and professional services (scientific, management, and administrative) compose nearly one half (45% in Amityville, 43% in Copiague) of all employment industries represented.

Housing

In both Amityville and Copiague, most housing units (77% in Amityville, 82% in Copiague) are owner-occupied, and few (1% in Amityville, 2% in Copiague) are vacant. Although both communities are located on the coast there are few (0% in Amityville, 1% in Copiague) seasonal residences that are vacant in either community.

Guidance and Insight from Demographic Analysis

The demographic analysis indicates a few important trends and characteristics that helped shape the identification of needs, opportunities, and projects for NYRCR Village of Amityville/Copiague. One of the first observations is that schools and similar educational facilities are critically important. Not only do they provide a necessary service in terms of education as 17% of residents in the Village of Amityville and 15% of residents in Copiague are school age (5 to 17 years), the schools themselves are major employers with 10% of employment in the Village of Amityville^{iv} and 7% of employment in Copiague^v in



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educational services. The resiliency of educational facilities is therefore an important consideration. The demographic analysis also revealed that 33% of the population in Copiague is Hispanic/Latino. This insight helped shaped the discussion of the need for improved communication during emergency events for the entire Community including the Spanish-speaking population.

The journey to work data indicates that most of this Community's workers commute by car. Therefore resilient roadway infrastructure to provide a means to travel to a worker's place of employment rose to the surface as a potential priority for the planning process. The opportunity to improve, to create, and provide resilient improvements to the pedestrian, bicycle, and transit networks was an additional consideration.

Lastly, housing type and occupancy indicates that the resiliency of the housing stock is of vital importance. There are very few renter-occupied units in NYRCR Village of Amityville/Copiague, indicating relatively low residential turnover and few vacancies. This indicates that in the event of a catastrophic event, the homes affected are permanent residences, and the families in them have few options for relocation within their community. The Census data therefore strongly suggests that programs and incentives to protect and preserve the existing housing supply, to provide for potential increases in the diversity of house types, as well as to provide for the temporary housing of dislocated residents, be recognized in the NYRCR Village of Amityville/Copiague Planning process.

B. Description of Storm Damage

After passing through the Caribbean - including Jamaica, Cuba, and the Bahamas - fluctuating between a Category 1 and Category 2 Hurricane, Sandy turned north toward the US coast on Saturday October 27, 2012. On Monday, October 29 at 8 PM the storm made landfall near Atlantic City, NJ. The winds had decreased to just below the threshold for a Category 1 Hurricane and meteorologists and the press christened this near hurricane as "Superstorm Sandy."

Superstorm Sandy's historically unprecedented track approached New Jersey and New York from the east; storms typically approach from the south.^{vi} As a result, the track of Superstorm Sandy resulted in a worst-case scenario for storm surge and inundation for coastal regions from New Jersey north to



Damage and debris remain as reminders of Superstorm Sandy.



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Connecticut, including New York City and Long Island. The storm surge came ashore near the time of high tide along the Atlantic Coast and during a full moon when tides are strongest. These factors combined to produce record tide levels. The storm surge in New York Harbor reached almost 14 feet at the Battery.^{vii} Forty-five miles away, on the south shore of Suffolk County, the Storm surge reached nearly 8 feet.^{viii} This was on top of the morning tide that had already inundated the shoreline and had yet to retreat.

In addition to the triple threat of the enormous storm surge, the coinciding high tide, and the full moon, other factors interacted to create Superstorm Sandy's devastation. Nearby maximum wind gusts ranged from 79 mph in East Farmingdale to 90 mph at Long Island MacArthur Airport in Islip.^{ix} On the southward facing shores of Long Island, the storm surge was accompanied by fiercely destructive wave action. An off-shore buoy located 15 nautical miles southeast of Breezy Point on the Rockaway Peninsula reported a wave height of 32.5 feet -the largest since record keeping began.^x

The devastation along the mid-Atlantic seaboard was unprecedented. According to the National Oceanic and Atmospheric Administration (NOAA), there was an estimated \$65 Billion in damages and 159 deaths from Superstorm Sandy.^{xi} On the local level, along Long Island's South Shore, damage was also substantial.

The Village of Amityville and hamlet of Copiague were severely affected by Superstorm Sandy's high winds, heavy rain, and strong tides. The houses and roads south of Montauk Highway (Merrick Road), especially along the canals, experienced severe flooding, downed trees, and prolonged periods of power and communications failures. Many residents lost their homes and all of their personal belongings, while many others are still making repairs with the simple goal of getting back into their homes and returning to normal. Residents were displaced for long periods of time, some of whom are still not able to return to their homes. Some homes have already been raised considerably to avoid flooding in the next storm. There are still a number of vacant houses, many of which have been abandoned by their owners.

The waterfronts took the biggest hit. Superstorm Sandy damaged many structures, marinas, docks, yacht/boating clubs, and other maritime businesses in the community, as well as public spaces, parks, and beaches. The Amityville Beach sustained damages exceeding \$1,000,000.^{xii} The Amityville Beach Pavilion experienced six feet of storm surge during the Superstorm Sandy event. From the Pavilion



Many homes remain vacant or abandoned since Superstorm Sandy.



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structure to the site's electric, plumbing, and fencing just about everything was damaged or destroyed. Tanner Park in Copiague also sustained damage.

The Federal Emergency Management Agency (FEMA) has prepared statistics regarding the average dollar value of claims for storm damage repairs by Census Tract (Individual Assistance Preliminary Damage Assessments). In the Village of Amityville areas that do not front on the Great South Bay, the average damage assessment was \$1,758.^{xiii} In the area fronting the Bay, however, the average damage assessment was \$21,951.^{xiv}

In Copiague, the damages were slightly greater than in Amityville for the northern area and slightly less for the waterfront area. The average assessment for the area that does not front on the Great South Bay ranged from \$1,505 to a \$7,197.^{xv} For the area that fronts on the Bay, the average damage assessment ranged from \$12,798 to \$15,715.^{xvi}

FEMA also prepared an analysis of damage to rental properties according to the number of applicants for assistance in each affected zip code. It indicates that a total of less than six rental units in the Village of Amityville zip code (11701)^{xvii} were destroyed and none in Copiague zip code (11726)^{xviii}, while 181 rental units sustained major, moderate, or substantial^{xix} damage in Amityville and 78 sustained major, moderate, or substantial damage in Copiague.^{xx}

The U.S. Department of Housing and Urban Development (HUD) Office of Policy Development and Research in the *Analysis of Communities Impacted by Hurricane Sandy* estimates that 914 homes in the Village of Amityville were damaged, of which 907 sustained "heavy" damage (>50%) or "strong" damage (20% to 50%). 905 of the damaged homes (99%) had experienced flooding, primarily in the range of one to four feet of water in the home.^{xxi} In total, 23% of the entire housing stock in the Village was damaged.^{xxii}

In Copiague, HUD estimates that 2,187 homes were damaged, of which 2,126 sustained "heavy" damage (>50%) or "strong" damage (20% to 50%). 2,152 of the damaged homes (98%) had experienced flooding, primarily in the range of one to four feet of water in the home. In total, 27% of the entire housing stock in Copiague was damaged.^{xxiii}



Many residents are still making repairs to their homes.



More than a year later, repairs to homes damaged during Superstorm Sandy continue.



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HUD also looked at the pre-storm housing conditions in the plan area. They found that 78% of the housing stock in Amityville and 74% of the housing stock in Copiague was constructed pre-1970, that 99% of Amityville's damaged housing and 97% of Copiague's damaged housing consists of one to four family structures, and that 6% of Amityville's and 15% of Copiague's damaged housing units were rentals.^{xxiv}

The Town of Babylon and Village of Amityville have also provided data regarding the devastation to the plan area housing stock from Superstorm Sandy. Outside of the borders of the Incorporated Village of Amityville, the Town of Babylon sent substantial damage letters^{xxv} to 73 property owners in the plan area, and 185 permits have been requested for storm damage repairs. The Village of Amityville has sent out 32 substantial damage letters to date, and has processed 60 permits for storm damage repair, including building, demolition, plumbing, and repairs to docks and fences. They have also processed 15 permits specifically for elevating homes. Amityville estimates that of the homes damaged in the Village, 8 to 10 were condos, and the rest were single family. No special needs housing such as adult homes or assisted living facilities were damaged.

C. Critical Issues

The most critical issue facing us in the Village of Amityville/Copiague in the post-Superstorm Sandy environment is recovery from the devastation of the event.

Our community is looking forward. We wish to maintain our quality of life as a waterfront community in a manner that is more resilient for future storms. It is critical that the community rebuild to minimize future storm damages on homes and businesses. This involves identifying ways to prevent damage to public and private property and increasing the future of resiliency of housing in the community. Mitigating repetitive flooding of homes, businesses, and roads is a critical issue. The health of the local economy is tied to its waterfront location; therefore, protecting local assets such as our waterfront parks from future storm damage is imperative to the economic resiliency of this community.

If we want to be a more resilient community in the future, we recognize that a critical issue is ensuring that emergency and evacuation information and facilities are available to residents. This is especially critical for our special needs populations who require assistance before, during, and after emergency



Homeowners are rebuilding in ways that will minimize future storm damages.



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events. During Superstorm Sandy, certain neighborhoods were difficult to evacuate from and deliver supplies to because of weight limits on bridges; the lack of proper police, fire, highway and municipal equipment; and flooding of streets. These critical community planning issues must be addressed.

NYRCR Village of Amityville/Copiague recognizes that their infrastructure is vulnerable. Bridge weight limits several neighborhoods from reaching emergency facilities. Roadway flooding from a deficient storm sewer system, deteriorated bulkheads, and low roadway elevations impairs critical access, hampers the ability to evacuate, and allows floodwaters to damage homes and property. Superstorm Sandy highlighted regional emergency management issues beyond local control, such as the lack of fuel, power, and communications availability.

The waterfront and our many natural and cultural resources located there took the brunt of Superstorm Sandy's force. Creeks, canals and wetlands areas were flooded leaving damage and debris. Our waterfront parks and beaches were eroded and facilities such as the Amityville Beach Pavilion were destroyed. Not only do our parks and natural areas provide recreational opportunities, but they also serve as buffer to Great South Bay for the inland residential areas. Our natural and cultural resources are critical to the quality of life in our Community and must be strengthened and made more resilient.

D. Community Vision

One of the first steps in the NYRCR planning process was the development of a Community Vision Statement. A Community Vision should be specific enough to be meaningful, while broad enough to be inclusive, highlight what is unique about the community, and acknowledge an understanding of the community's vulnerability to coastal natural hazards, with a focus on a resilient and safer future.

The NYRCR Planning Committee members discussed the Community Vision Statement and their ideas focused on the importance of the area's location along the Great South Bay, the vitality of the downtown areas, the character of the varied housing stock, and the friendliness of the people.

At the first public event, community members viewed the draft Community Vision prepared by the NYRCR Planning Committee and provided direct feedback to ensure that their vision for a resilient future



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would be included. Once we felt confident that our community was well represented in the Vision Statement, we adopted it as final.

This is the Community Vision that we came up with:

The Village of Amityville and the hamlet of Copiague are small, historic, bayside communities located on the Great South Bay of Long Island that wish to maintain a safe, quiet and inviting character. We will work cooperatively to preserve the traditional continuity of our historic landmarks, maritime culture and suburban lifestyles and protect, maintain and enhance the quality of our natural resources, which are fundamental to our quality of life and are the basis of our local economy. We will plan for new and improved strategies which will eliminate potential loss of life and minimize damage caused by future natural disasters.

This vision served as a bellwether throughout the remainder of the planning process. All strategies and projects identified later were checked for adherence to the Community Vision to ensure that recommended actions do not detract from or stand in the way of the community achieving its desired goals.

E. Relationship to Regional Plans

It is useful to know where our NYRCR Community stands in relation to the rest of Long Island. Long Island spans over 118 miles from New York Harbor to Montauk Point and has a maximum width of 23 miles between the Long Island Sound to the north and the Atlantic Ocean to the south. Long Island, the 11th largest island in the nation, has a land area of over 1,400 square miles and is larger than the State of Rhode Island. Due to its island geography, many of the communities on the Island share similar challenges, as well as opportunities, relative to the natural environment, physical infrastructure, and other built systems. Additionally, it is important to understand the cause and effect relationship that occurs on the Island. For example, new impervious development in northern areas may result in excessive run off in South Shore communities. Potential Island-wide issues include:

- *Natural Environment:* Long Island has 1,180 miles of shoreline fronting the Atlantic Ocean, and Long Island Sound, as well as a number of lakes, bays, inlets, and canals. On Long Island we have



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rich and diverse natural resources including wetlands, rivers, streams, creek, parks, beaches, and dunes.

- *Developable Land Supply:* Almost two-thirds of Long Island's land surface is developed with buildings, pavement and other manmade structures. In combination with the large amount of protected/ preserved land, this results in a limited supply of available vacant land to accommodate new housing or economic development activities.
- *Water Quality:* Long Island's aquifers receive their fresh water from precipitation which percolates into the ground and is recharged into the groundwater system. The greatest threat to the quality of this water is development (residential/commercial/industrial) in sensitive areas that would add pollutants to the aquifer or impede the absorption of precipitation. The bays are a key component of the local economy which relies on the health and stability of bay ecology. The bays are a regional resource. Degradation of water quality as a result of non-point source runoff is of rising concern relative to Long Island's bays.
- *Utilities:* Electricity and the susceptibility of the power grid are both national and regional issues of concern. In the wake of Superstorm Sandy there has been a focus on making Long Island's grid more resilient during weather events and able to recover more quickly in the aftermath.
- *Climate Change:* According to a joint Columbia University and City University of New York study, the sea level is anticipated to increase 4 to 12 centimeters in the New York region by the 2020s and 30 to 56 centimeters by 2080.^{xxvi} Should polar icecaps melt rapidly, climate models projects that sea levels will rise even more. As a result, climate change is a significant Island-wide issue.

Many plans and studies have been prepared at the regional, County, and local levels that encompass the numerous regional issues facing Long Island. At the regional level, broad findings and strategies generally do not target the NYRCR Amityville/Copiague Planning Area but they can espouse policies and actions that affect us. At the local level, specific plans can have a more direct effect on our day-to-day lives and the future of our communities. The following is a summary of plans and studies that are relevant to the NYRCR Village of Amityville/Copiague Plan.



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Plans and Studies

Long Island's Future Economy, Long Island Regional Economic Development Council, 2011 (updates 2012, 2013.) This plan was initiated by New York State as a means of reviving the regional economy. The plan contains six major strategies that cover a broad spectrum of economic and quality of life issues. The Executive Summary of the Plan describes the strategies as follows (language from document):

- Create a cohesive education and workforce training strategy through partnerships among a range of stakeholders – business, trade groups, labor, government agencies, educational institutions, parents and students – with the goal of ensuring that workers from all of Long Island's communities are prepared to take advantage of new job opportunities in key economic growth sectors.
- Develop innovation and industry clusters in transformative locations across the region including downtowns, brownfields and university, research and medical centers by integrating the smart-growth principles of transit-oriented development and vibrant community life.
- Enhance and develop multi-faceted, interdisciplinary facilities aimed at incubating and accelerating the commercialization of innovative products generated at the region's premier research institutions, by linking scientists, engineers, health and medical professionals to entrepreneurs and small businesses.
- Reinvigorate Long Island's manufacturing sector through continued transformation from traditional defense and aerospace work to advanced technology products, creating skilled, high-value jobs and a network of nimble companies that can develop synergistic partnerships with companies in other regions of the State.
- Produce a new generation of sustainable, good-paying jobs in the legacy sectors of agriculture, aquaculture, fisheries and tourism by expanding export opportunities, infrastructure, recreation facilities, research partnerships and workforce training.
- Rebuild and expand infrastructure to improve job access, revitalize downtowns and transit hubs, speed trade, and attract and retain dynamic regional businesses and highly skilled workforce.

The study has relevance to the Village of Amityville and hamlet of Copiague. Our communities have identified a need to revitalize our downtowns in a transit-friendly manner near the Long Island Rail Road stations. Maintaining our workforce and encouraging new job opportunities to support the growth of



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the local economy is consistent with the study's recommendation. The Committee has proposed projects that address the rehabilitation of infrastructure that will strengthen the economy and improve resiliency.

Regional Comprehensive Sustainability Plan, Long Island Regional Planning Council, 2010. The plan noted the inability of Long Island to sustain itself fiscally, environmentally, and socially based on current governance methods and policies. The plan put forward that fundamental change would be necessary to alter the course of the future by noting the following, "Despite these challenges, Long Island has a tremendous opportunity to redefine what it means to live in a sustainable 21st century suburban community, recognizing it is possible for Long Island to be affordable and prosperous, bringing a return to economic growth and strength. Our ability to act today –and leave behind the status quo -will have a tremendous impact on the future of the region." This study relates to the Village of Amityville and Copiague in the recognition of the need for sustainable approaches to economic growth and community development.

Long Island South Shore Estuary Reserve Comprehensive Management Plan (SSER CMP), Long Island South Shore Estuary Reserve (SSER) NYS DOS 2001. The South Shore Estuary Reserve (SSER) stretches 70 miles from the western border of Nassau County to the center of Suffolk County encompassing all the Bays (Hempstead, South Oyster, Great South, Moriches, and Shinnecock) between Fire and Jones Islands and mainland Long Island. The SSER CMP takes a holistic approach managing the South Shore Estuary for both human and environmental needs. It makes recommendations to improve and maintain the SSER's water quality, to protect and restore living resources, to expand public use, and to sustain and improve related economies. Both the Village of Amityville and the hamlet of Copiague are located on Great South Bay and are inextricably tied to the South Shore Estuary, both economically and environmentally.

Suffolk County Comprehensive Plan 2035- 2011, Suffolk County Planning Commission, 2011. This report was issued as the first volume of a series that will cover all aspects of the Suffolk County environment, economy, sustainability, and resource protection. Volume One began the process by presenting updated information on demographics and socio-economic information, development trends, as well as a summary of prior regional and local plans. As subsequent volumes of the plan are prepared, both the Village of Amityville and hamlet of Copiague are potentially affected by the



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recommendations of the plan as it involves County roads, drainage, and parks—all issues of importance to the Committee.

Land Available for Development and Population Analysis Western Suffolk County, Suffolk County Planning Department, 2009. This study was done as a component of the County's Comprehensive Water Resources Management Plan. The study was to determine the potential for population growth and demand for ground water. In Amityville, it found that 23 acres of land were available for development: 8 acres residential, 7 commercial, and 8 industrial. For Copiague, 29 acres were identified; 26 acres residential, one acres of commercial, and one acre of industrial. The availability of developable land is an opportunity for consideration in future community and economic development initiatives.

Suffolk Country Demographic, Economic and Development Trends, Suffolk County Department of Planning, 2008, with available updates. This report provides information on demographic, socioeconomic, and development trends for both Suffolk County and, in some cases, for Nassau County as well. The report is updated on a regular basis with the most recent update occurring in August 2013. This report finds a slight growth in jobs in the bi-County area (+ 19,400, 1.54% compared to June 2012). Of note is the finding that the number of businesses increased 1.7% in the five years between 2006 and 2011. The demographic, economic, and development trends in the Village of Amityville and Copiague assisted in the discussion of the future planning for the Community during the consideration of projects phase.

Shopping Center and Downtowns, Suffolk County, New York, Suffolk County Department of Planning, 2006, with 2010 survey update. This report was published in 2006 and the data was updated in 2010, not long after the "Great Recession" began in 2008 when the economy was only beginning to recover. The Village of Amityville's central business district was identified as having a total of 147 storefronts of which 51 were retail, 78 were non-retail (e.g., offices, personal service), and 18 were vacant. The vacancy rate was 12%. The Copiague central business district was surveyed as having a total of 46 stores of which 27 were retail, 19 were non-retail and 0 were vacant. The vacancy rate was 0%. By comparison, the vacancy rate for the Town of Babylon for shopping center-type development was 7.2% and for downtowns 7.9%. The commercial trends examined in this document for the Village of Amityville and Copiague assisted in the discussion of the future economic development consideration for the Community during the consideration of projects.



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Smart Growth Policy Plan for Suffolk County, Suffolk County Department of Planning, 2000. This report describes the Smart Growth planning process and also discusses eight Smart growth principles and how they can be implanted in the County. Interest in the community to revitalize the downtown areas of both the Village of Amityville and Copiague are consistent with the recommendations of this plan.

Copiague Vision Plan, Town of Babylon, March 2009. Through a local planning process with the Town of Babylon the hamlet of Copiague formed a vision for downtown Copiague as a vibrant, people-friendly place, where people feel safe and secure; where people can walk, shop, entertain, relax, play, interact and spend time; and where the sense of community can be enriched. The Copiague Vision Plan underscored to the Committee the importance of a vibrant downtown as an economic development consideration in the Community.

Amityville Downtown Plans, Village of Amityville, On-going. Revitalization of the downtown commercial area of the Village of Amityville along Route 110, or Broadway as it is called, within the Village is under consideration. The Amityville Plan, begun in April 1997 was originally entitled "Planning Charette for Amityville, New York." Several approaches for downtown revitalization are currently being explored. A downtown revitalization committee has been formed, composed of residents who are business owners, planners, and architects to formulate a comprehensive plan for the downtown area. Options being considered include changes to zoning and making Broadway more pedestrian-friendly. Another option being explored is a business improvement district, or BID, for the area where business and property owners would commit to contribute money toward beautification, marketing, and capital improvements. In addition, a downtown revitalization feasibility study is being undertaken by Destination LI, a non-profit community building and educational organization, to determine the community's readiness and willingness to participate in a crowd sourced place making campaign to revitalize the struggling downtown. The study will organize actionable ideas for the downtown through a web based social media platform of message boards, idea sharing, and voting apps. The goal of the place making study is to positively reshape the community economically, socially, and environmentally by developing underutilized or ill-utilized properties and municipal space across the Village. This planning effort highlights the importance of economic development in the downtown area of the Village of Amityville as a critical issue.



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American Venice Plans, Town of Babylon, On-going. An area of Copiague known as American Venice has been under discussion for several years for potential economic revitalization based on its history as having been developed and designed in the 1920s to resemble Venice, Italy with canals and arched bridges.

Connect Long Island Plan: A Regional Transportation and Development Plan, Town of Babylon (2011). This is a plan for regional economic development and improvement of quality-of-life issues through strategic, sustainable infrastructure investments along Long Island's transit corridor. The plan is three-fold: promote Transit-Oriented Development (TOD); improve transit connections between TOD destinations; and create greater connectivity between transit and job hubs, including North-South transit service. These goals are important for regional storm resiliency as they will provide greater housing and economic development opportunities along the rail corridor, away from the high-risk flood areas along the shore. And demographics on Long Island indicate a growing need for housing in "Smart Growth" communities – that is, compact, mixed-use downtown centers within close proximity to public transit.

Suffolk County Comprehensive Water Resources Management Plan: Executive Summary, County of Suffolk, January 2014. In this report, Suffolk County Executive Steve Bellone identifies nitrogen pollution of ground and surface waters as the region's greatest threat to public health and safety. Highlighting the fact that 70% of the County (or 350,000 homes) is unsewered, the report launches an effort to identify and prioritize parcels of land most critical to water quality management; these parcels will be targeted for sewer connections and septic system upgrades. The report states: "Water is the single most significant resource for which Suffolk County bears responsibility. As the impact of Superstorm Sandy underscored, more than at any time in our history, we are obliged to come to terms, in every sense, with the water that surrounds us."

Places to Grow: An Analysis of the Potential for Transit-Accessible Housing and Jobs in Long Island's Downtowns and Station Areas, Regional Plan Association/Long Island Index, January 2010. This report identifies 8,300 acres of undeveloped land in and around over 150 downtowns and transit stations on Long Island. This information is important for storm resiliency because it emphasizes sustainable development and Smart Growth in inland areas, away from high-risk shoreline areas.



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Suffolk County Transfer of Development Rights (TDR) Study: An Inventory of Existing TDR Programs, NY-CT Sustainable Communities Consortium, March 2013. Developed through a 2011 US Housing and Urban Development Sustainable Communities Regional Planning Grant, this report documents and describes all TDR plans, programs, policies and ordinances in Suffolk County. TDR has been used to protect Long Island's aquifer-based drinking water by preserving thousands of acres in the Long island Pine Barrens. TDR can be an important tool, for storm resiliency by helping to shift development from high-risk shoreline areas to low-risk inland areas appropriate for higher density, such as Transit-Oriented Developments along Long island's rail corridor.



Section II: Assessment of Risk and Needs

A. Description of Community Assets and Assessment of Risk

In undertaking the NY Rising Community Reconstruction (NYRCR) process, it was crucial that the NYRCR Planning Committee (Committee) develop an accurate and comprehensive understanding of the key assets in NYRCR Village of Amityville/Copiague (Community) and the level of risk to which each of these assets is subject. The following section provides an overview of that effort.

Description of Community Assets

Assets and asset systems are places or entities where economic, environmental, and social functions of the Community occur. Examples of assets include critical facilities such as schools, hospitals, and medical facilities; emergency and public safety services including fire and police protection; and natural, cultural, and recreational resources such as wetlands, beaches, and parks. Assets also include critical infrastructure such as transportation roadways, utility networks, and stormwater systems required to support those essential community functions.

The purpose of the asset inventory was to create a comprehensive description of the assets within or outside of the NYRCR Community whose loss or impairment due to flood events would compromise essential functions or critical facilities of the community. The inventory enumerates a community's assets and documents the landscape features and/or vulnerable features of the asset itself that contributes to flood risk. The inventory provides the basis for examining assets in more detailed risk mapping and assessment.

Assets were identified through two methods: community engagement and technical mapping. The community engagement approach was first undertaken by the Committee, who identified assets known to community residents. In addition, input from the public were sought and provided at public engagement events (see Section V: Additional Materials for more details on Public Engagement). The technical mapping effort was undertaken by the Consultant Team using data supplied by New York State



Flooding during Superstorm Sandy.



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Department of State (NYS DOS) and other State and Federal agencies, including the Federal Emergency Management Agency (FEMA.) The technical mapping effort was intended to supplement the work of the Committee and the public by identifying resources that may be inaccessible to the public, but regulated by a public agency (such as undeveloped parklands and marshes). This effort was also intended to unearth assets that may be hidden in plain sight – assets vital to the community’s health and resilience that go unnoticed on a day-to-day basis because they only become obvious when they fail, such as small roadway bridges and more obscure government service offices.

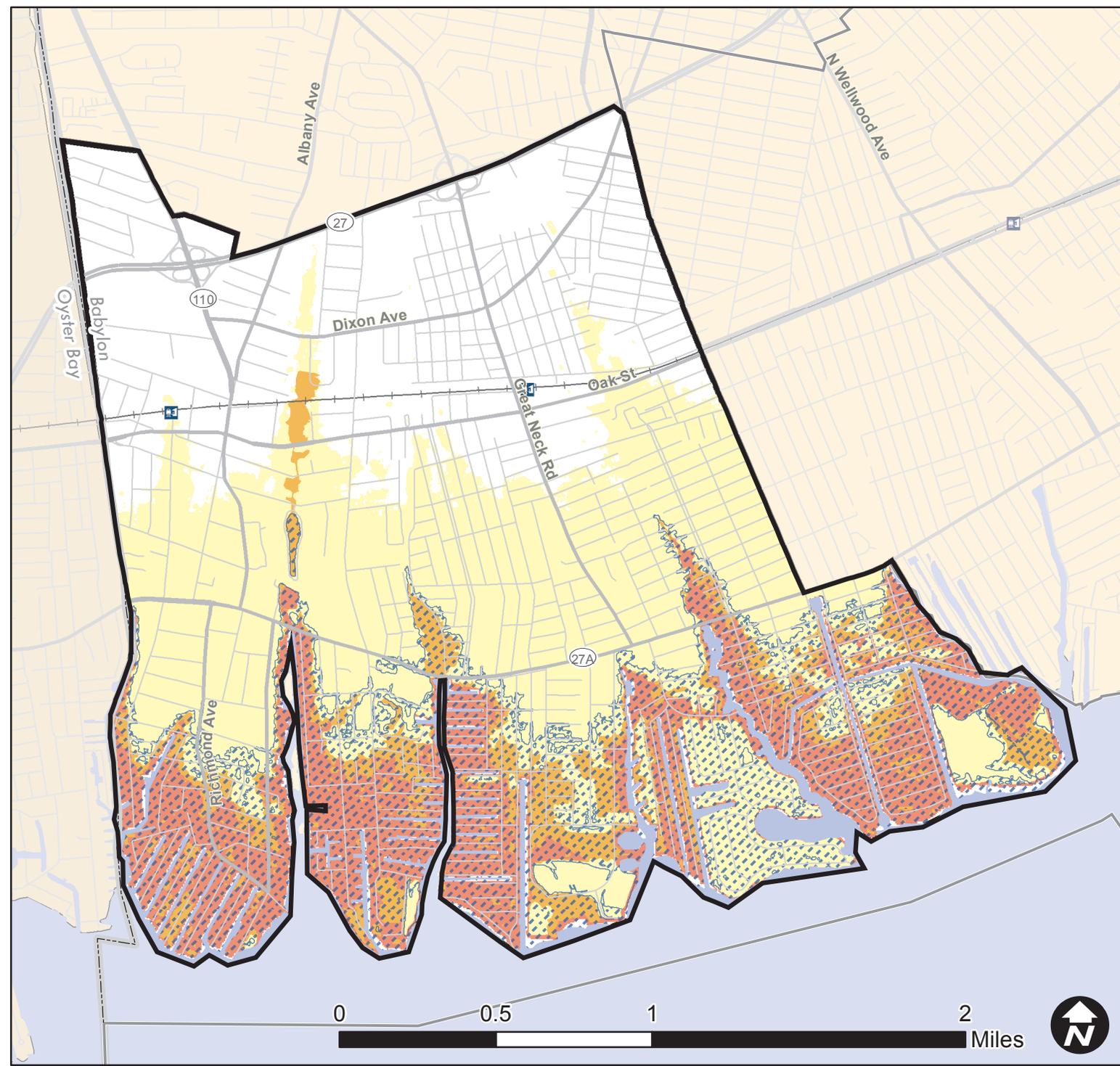
Assets were initially characterized based their location relative to three geographic areas at risk to storm inundation and sea level rise. The three risk areas, described below, help identify which assets have likely been affected by coastal hazards, or could be affected in the future:

- **Extreme Risk Area:** Assets located in the extreme risk area are currently at risk of frequent inundation, vulnerable to erosion in the next 40 years, or likely to be inundated in the future due to sea level rise.
- **High Risk Area:** Assets located in the high risk areas are at occasional risk of inundation or at future risk from sea level rise.
- **Moderate Risk Area:** Assets in the moderate risk area are upland of the high risk area and are currently at infrequent risk of inundation or at risk in the future from sea level rise.



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Figure 2: Risk Area and Hurricane Inundation



Legend

- Village of Amityville/Copiague NYRCR Planning Area
- Other NYRCR Planning Areas
- Long Island Railroad Station
- Long Island Railroad
- Municipal Boundary

Roads

- Interstate
- Highways
- Ferry

Risk Area

- Extreme
- High
- Moderate
- Hurricane Inundation

Source: NYS DOT, NYS DOS, MTA, USGS





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The Committee ranked the assets' value as high, medium, or low as described below.^{xxvii}

*A **High Value Community Asset** is determined by the community to be so significant in the support of that community's day to day function that the loss of that asset or extended lack of functioning would create severe impacts to the community's long-term health and well-being or result in the loss of life or injury to residents employees or visitors.*

*A **Medium Value Community Asset** is an individual asset or grouping of assets that are important to the functioning of that community's day to day life and that the loss of that asset or extended lack of functioning would cause hardship to the community's well-being but whose function could be replaced or duplicated in a mid-term time frame without significant burden to a community's long-term health.*

*A **Low Value Community Asset** is an individual asset or grouping of assets that play a role in the functioning of a community's day to day life, but whose loss could be managed and overcome with in a community without substantial impact to that community's functioning. They can be started, replaced, or temporarily duplicated in a short-term time frame with limited burden to a community's long-term health.*

The assets identified through the technical mapping effort were combined with the community identified assets and the community ranking, resulting in a complete picture of not only the physical assets themselves but their value as perceived by the community.

The community assets, identified by the Committee and community at large, and their corresponding risk areas, are presented in the tables in the following pages. The complete asset inventory is found in Section V: Additional Materials. The complete inventory provides more detail on each identified asset, such as its classification as a critical or non-critical facility, whether the asset serves a vulnerable population, and the relative value, or importance, of the asset to the community. As part of the inventory, the Consultant Team also noted contributing landscape attributes and physical features of the asset or surrounding the asset that influences the severity of storm impacts. For example, assets that are located near shorelines absent of wide beaches, healthy dunes, and protective vegetation are at



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increased risk of flooding. Specific features of the asset that are at risk (e.g. mechanical equipment below flooding elevation) are also recorded in the inventory.

Description of Community Assets

An overview of the Community’s assets is provided below. Over 200 assets were originally catalogued based on this initial level of review.

Economic Assets

Almost 90 percent, or 216 properties, of the at-risk commercial and industrial properties are located within the Moderate Risk Assessment Area. Of the remainder, 14 commercial and 2 industrial properties are situated in the Extreme Risk Assessment Area and 8 commercial and 4 industrial are within the High Risk Assessment Area (see Table 1). Commercial and industrial properties in the Extreme and High Risk Assessment Areas experienced up to four feet of flooding during Superstorm Sandy.

Table 1: Economic Resources

Asset/Resource	Risk Assessment Area(s)	Community Value
14 commercial, 2 industrial properties	Extreme	Medium (commercial), Low (industrial)
8 commercial, 4 industrial properties	High	Medium (commercial), Low (industrial)
192 commercial, 24 industrial properties	Moderate	Medium (commercial), Low (industrial)

Health and Social Services Assets: Life Safety

Life safety services typically include fire protection and emergency medical services (EMS), police protection, hospitals, and emergency operations facilities. There are five Emergency Operations Facilities in Suffolk County. These facilities would coordinate emergency services during an emergency. Two of these facilities on the South Shore of Long Island are the Babylon Town Civil Defense facility, located directly north of the Village, and the Islip Public Safety facility situated between the West Islip and the Oakdale/West Sayville NYRCR Planning Areas located to the east of the Village of Amityville/Copiague.

The Village of Amityville/Copiague NYRCR Planning Area contains one police department, the Amityville Police Department (see Table 2). The building housing the police department is located outside of the



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risk areas. The Village of Amityville/Copiague NYRCR Planning Area has four Fire Stations within it from two fire departments (see Table 3). The Bennett Place Fire Station and the Copiague Fire Department Headquarters Fire Station are both located in the Moderate Risk Assessment Area. The other two fire stations are located outside of the risk areas. There are no hospitals located within the Village of Amityville/Copiague NYRCR Planning Area. Important medical facilities nearby include Good Samaritan Hospital Medical Center on Montauk Highway in West Islip; Nassau University Medical Center on Hempstead Turnpike in East Meadow; North Shore Plainview Hospital on Old Country Road in Plainview, and St. Joseph’s Hospital on Hempstead Turnpike in Bethpage.

Table 2: Police Stations

Asset/Resource	Risk Assessment Area(s)	Community Value
Amityville Police Department	Not Applicable (N/A) ^{xxviii}	Medium

Table 3: Fire Stations

Asset/Resource	Risk Assessment Area(s)	Community Value
Amityville Fire Department HQ	N/A	Medium
Bennett Place Fire Department Facility	Moderate	Medium
Copiague Fire Station 1	N/A	Medium
Copiague FD HQ Fire Station	Moderate	Medium

Health and Social Service Assets: Administration and Education

Community assets reviewed in this category serve a variety of public functions, from health treatment facilities to general purpose shelters in public schools, post offices, and town halls. During a storm event, these facilities may potentially serve as critical disaster response and recovery centers, the identification of which is essential to future disaster management and preparedness.

Four chemical dependence treatment sites are located in the northwest section of the Community on either side of Route 110/Broadway and north of the Amityville Long Island Railroad (LIRR) station. All four sites fall within a non-risk area (see Table 4).



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Table 4: Chemical Dependence Treatment Program Provider Sites

Asset/Resource	Risk Assessment Area(s)	Community Value
Hope For Youth, Inc.	N/A	Low
Long Island Home d/b/a South Oaks Hosp	N/A	Low
Seaford Services, Inc.	N/A	Low
Town/Babylon Division of Drug/Alc Srvs	N/A	Low

A total of nine Office for Persons with Developmental Disabilities (OPWDD) locations have been identified (see Table 5). Six are located in the northern section of the Community near the LIRR rail line, one of which is located in a moderate risk area. The remaining two locations are located in Moderate to High Risk Assessment Areas.

Table 5: NYS OPWDD State and Voluntary Program Locations

Asset/Resource	Risk Assessment Area(s)	Community Value
1 facility	Moderate	Low
2 facilities	Moderate and High	Low
6 facilities	N/A	Low

Two post offices serve the Community (see Table 6). The Copiague post office is located in a non-risk area, while the Amityville post office is situated within a Moderate Risk Assessment Area near the Amityville LIRR station.



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Table 6: Post Offices

Asset/Resource	Risk Assessment Area(s)	Community Value
Amityville	Moderate	Low
Copiague	N/A	Low

There are nine schools located in the Community, six of which are located in non-risk areas (see table 7). Two schools are located in Moderate Risk Assessment Areas near the LIRR rail line and Montauk Highway and one school, the Amityville Memorial High School, is located on Montauk Highway along the shoreline in a Moderate to Extreme Risk Assessment Area. Four shelter locations comprised of public schools have been identified in the Community. Three are located in non-risk areas, while the Amityville Memorial High School is in a Moderate to Extreme Risk Assessment Area and experienced flooding impacts from Superstorm Sandy.

Table 7: Schools

Asset/Resource	Risk Assessment Area(s)	Community Value
Amityville Memorial High School (Shelter)	Moderate, High, and Extreme	Low
Deauville Gardens School	Moderate	Low
Scudder Avenue School	Moderate	Low
Copiague High School (Shelter)	N/A	Low
Copiague Junior High School (Shelter)	N/A	Low
Edmund J Miles Middle School (Shelter)	N/A	Low
Great Neck Road School	N/A	Low
Park Avenue School	N/A	Low
Saint Martin of Tours School	N/A	Low
Wiley School	N/A	Low

One State-owned property has been identified in a non-risk area near the Amityville LIRR station (see Table 8).



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Table 8: State-owned Buildings and Properties

Asset/Resource	Risk Assessment Area(s)	Community Value
People with Developmental Disabilities - Amityville Hostel #9472	N/A	Low

The Amityville Village Hall is located in a non-risk area near the Amityville LIRR Station east of County Line Road and south of Route 12 (see Table 9).

Table 9: Town/Village Hall

Asset/Resource	Risk Assessment Area(s)	Community Value
Village of Amityville	N/A	Low

Libraries are an important community asset in NYRCR Village of Amityville/Copiague and could serve an important function as locations to disseminate emergency information to the public or as potential evacuation locations. The Amityville Public Library is located at 19 John Street in Amityville and the Copiague Memorial Public Library is located at 50 Deauville Boulevard in Copiague. The libraries are located in non-risk areas.

Housing Assets

There is extensive residential development within all three Risk Assessment Areas of the Community. Of particular concern are the 2,144 single-family and 120 two-to-three-family structures within the Extreme Risk Assessment Area and the 1,092 single-family and 40 two-to-three family structures within the High Risk Assessment Area (see Table 10). Many of these housing assets received up to four feet of flooding as a result of Superstorm Sandy, damaging 914 homes in the Village of Amityville and 2,187 homes in the hamlet of Copiague. In addition, 4,959 single-family, 239 two-to-three-family and 114 multi-family structures are within the Moderate Risk Assessment Area.



Table 10: Housing Resources

Asset/Resource	Risk Assessment Area(s)	Community Value
2,144 single-family, 120 two-three-family structures	Extreme	High
1,092 single-family, 40 two-three-family structures	High	High
4,959 single-family, 239 two-three-family, 114 multi-family structures	Moderate	High

Infrastructure Assets: Transportation

Data sets reviewed within this category include both transportation infrastructure as well as transportation-related facilities. Transportation assets within the Village of Amityville/Copiague are catalogued below.

Long Island Railroad’s (LIRR) heavily-utilized Babylon line provides frequent service to points west and east. This particular Community is home to two elevated LIRR stations; one in Amityville and the other in Copiague.

Sunrise Highway (SR 27) and Montauk Highway (SR 27A) are prominent roads providing east-west access through the Village of Amityville/Copiague. Montauk Highway is located in mostly Moderate Risk Assessment Areas with some portions extending through High and Extreme Risk Assessment Areas. Specifically, the segment of Montauk Highway between Cedar Street and Dowsing Place as well as between Pinelawn Avenue and Hawkins Boulevard are in designated High and Extreme Risk Assessment Areas. Additionally, Montauk Highway in the vicinity of Lake Drive is situated in a High Risk Assessment Area. These areas of Montauk Highway experienced flooding during Superstorm Sandy which restricted access. Broadway provides north-south access between Sunrise and Montauk Highways. Broadway, south of Avon Place to its intersection with Montauk Highway is located in a Moderate Risk Assessment Area. Great Neck Road is another north-south route within this NYRCR Community. The portion of Great Neck Road south of Florida Avenue to Montauk Highway is in a Moderate Risk Assessment Area.

One New York State Department of Transportation (NYS DOT) bridge and a total of six LIRR spans (eastbound and westbound) in three locations were identified as being in poor condition based on State data.^{xxix} One bridge is in the Extreme Risk Assessment Area and the other bridges are in the non-risk



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area. These resources are noted in Table 11. Table 12 shows the one scour critical bridge^{xxx}. Table 13 shows the one heliport in the Community, which is currently closed.

Table 11: Bridges in Poor Condition

Asset/Resource	Risk Assessment Area(s)	Community Value
State Hwy. 100 & State Hwy. 27 (BIN # 1019119)	N/A	Low
LIRR Bridge* at Amityville crossing Rt. 110 (BIN #s 7700351/7700352)	N/A	Low
LIRR Bridge* at Copiague crossing Great Neck Rd. (BIN #s 7700361/770362)	N/A	Low
LIRR Bridge* crossing Wellwood Ave. CR 3 (BIN #s 7700371/7700372)	N/A	Low

*Includes eastbound and westbound spans

Table 12: Scour Critical Bridges

Asset/Resource	Risk Assessment Area(s)	Community Value
Riviera Dr. West crossing Santa Barbara Canal (BIN # 2261370)	Extreme	High

Table 13: Heliports

Asset/Resource	Risk Assessment Area(s)	Community Value
Brunswick Hospital Heliport (Closed)	N/A	Low

Infrastructure Assets: Utilities

Several critical infrastructure utility properties and facilities have been identified within NYRCR Village of Amityville/Copiague (see Table 14). These are located primarily within the Moderate Risk Assessment Area and comprise flood control, telephone, water supply, and rail facilities. Other infrastructure resources, including gas and electric supply, are present throughout the Risk Assessment Areas but are not mapped or identified.



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Table 14: Infrastructure Resources

Asset/Resource	Risk Assessment Area(s)	Community Value
1 flood control property	Extreme	High
1 telephone utility	High	Medium
2 water treatment plants	Moderate	High
2 drinking water wells	Moderate	High
1 rail support facility	Moderate	Low
5 flood control properties	Moderate	High

Natural and Cultural Resource Assets

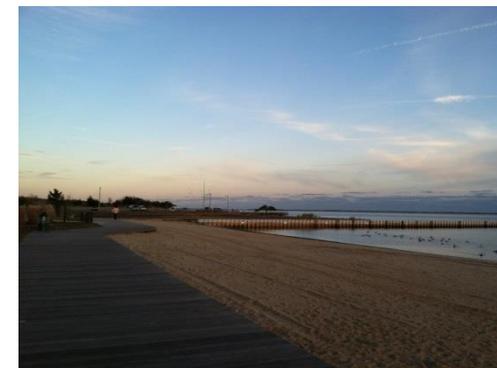
Natural and Cultural Resources include natural habitats, wetlands and marshes, dunes, beaches, river corridors, recreation facilities, parks, open spaces, agricultural areas, religious establishments, libraries, museums, historic landmarks, and performing arts venues.

In NYRCR Village of Amityville/Copiague, the parkland and natural resources are associated with coastal open space. Parks in Amityville include the James Caples Memorial Park and the Amityville Municipal Beach Park. Tanner Park and Indian Island County Park (undeveloped) are located in Copiague. These coastal open space areas sustained significant damage during Superstorm Sandy, with more than six-feet of storm surge in many locations and are located in the Extreme Risk Area. The Amityville Creek, Woods Creek, and Great Neck Creek and their associated freshwater wetlands are important natural resources. These assets are located in the Extreme, High, and Moderate Risk Assessment Areas and have a High Community Value.

The available State data did not identify National-Register listed historic resources in the Community.

Assessment of Risk to Assets and Systems

Risk is the chance that an asset will be damaged or destroyed. Assessing the risk to identified community assets and systems through a Risk Assessment process helped the Committee identify assets at the greatest flood risk, understand measures that would protect those assets, and develop projects that can be put in place to protect assets at risk.



The NYRCR Village of Amityville/Copiague waterfront is an important natural resource asset.



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The Consultant Team used a standardized Risk Assessment Tool to assess and quantify the risk to assets identified by the Community. The asset inventory provided a baseline to identify the most critical assets in the community to be advanced through the Risk Assessment Tool for further analysis. The assets selected from the inventory for input into the Risk Assessment Tool include:

- Assets situated in Extreme and High Risk Assessment Areas
- Critical Assets (FEMA-critical) in Moderate Risk Assessment Areas
- Locally-significant community identified (High Community Value) in Moderate Risk Assessment Areas
- Assets with High Community Value in Non Risk Areas
- Assets providing critical life safety services

In addition, similar assets were grouped as a single asset to the maximum extent possible because these assets would likely experience the same effects from storm events and have similar risk. For example, residential neighborhoods with similar construction were combined by risk area. For each asset input into the Risk Assessment Tool, the three factors that contribute to risk were scored and multiplied to produce a final risk score. The formula to calculate risk is:

$$\text{Hazard} \times \text{Exposure} \times \text{Vulnerability} = \text{Risk}$$

The three factors that contribute to the measure of overall risk for each asset are:

- **Hazard:** The likelihood and magnitude of future storm events. Examples of the most common hazard risks include coastal flooding, flooding in a 100-year floodplain, sea level rise, or hurricanes. Typically, an asset located in an Extreme Risk Assessment Area experiences hazards with greater frequency and intensity than assets in a High or Moderate Risk Assessment Area.
- **Exposure:** The moderating effect of topographic and shoreline features. If assets are more exposed (e.g., situated on low-lying floodplains, directly exposed to a probable storm surge, or otherwise unprotected), they are more likely to suffer storm effects than similar assets located



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at a higher elevation or on a rocky shoreline protected by dunes. Similarly, landscape features and vegetation are more important for an asset proximate to a flood source than an asset further inland.

- **Vulnerability:** The level of impairment or consequences that assets may experience from a storm event. The ability of an asset to resist damage from a storm is a measure of vulnerability. If an asset recovers quickly with limited interruption in service it has low vulnerability. An asset with extended service loss or permanently reduced capacity would be considered to be significantly vulnerable.

Fifty-two assets in the Moderate, High, and Extreme Risk Assessment Areas, or meeting the other criteria described above, were carried through for analysis in the Risk Assessment process.^{xxxii} The assets not located in the Risk Assessment Areas, or that did not meet the other criteria as described, were not carried through the analysis. The assets carried through the analysis ranged from residential areas within Moderate, High, and Extreme Risk Assessment Areas south of Montauk Highway to the Montauk Highway commercial corridor. Natural resource systems such as Strong Creek, Santa Barbara Canal, Howell Creek, Grand Canal, Narrasketuck Creek, Great Neck Creek, and Amityville Creek were also advanced. Other asset categories included in the Risk Assessment were transportation facilities, EMS resources, and commercial/economic uses. Assets that the Community and Committee identified as high value resources such as the Village's beach pavilion and Tanner Park in Copiague were also included for analysis. The Asset Inventory Worksheet and corresponding Risk Assessment for the Village of Amityville/Copiague can be found in Section V D.

Village of Amityville/Copiague Risk Assessment Results

The Risk Score Table on pages 40, 41, and 42 provides an identification number for each asset shown on the Risk Map on page 43. The table is color coded by risk level. Assets are placed into the following categories, based upon their risk scores.

- Assets with a Severe **Risk Score** are shown in red. Assets at Severe Risk are those that are in a dangerous situation or location.



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- **High Risk Score** assets are shown in orange. The High Risk category is indicative of conditions that could lead to significant negative outcomes from a storm.
- **Moderate Risk Score** assets are shown in yellow. A storm for assets in this category would pose moderate to serious consequences. However, these assets in general, have relatively low exposure or vulnerability.
- **Residual Risk Score** assets are shown in green. Flood waters and storm damage would typically pose a minor threat with infrequent occurrences to these assets. This occurs where both vulnerability and exposure are relatively low.

Risk score results ranged from residual at Town-owned utility properties north of Montauk Highway to severe at the Amityville Beach and Pavilion.

Assets at risk are identified in the table and map on the following pages. The identification of these assets helped to inform, focus and provide context for types of projects considered by the NYRCR Planning Committee.



Many residents are raising their homes to avoid flooding from future storms.



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Table 15: Risk Assessment Table^{xxxii}

Risk Map ID# ^{xxxiii}	Name
E1	Montauk Highway Corridor Commercial
E2	Marine Facility
E3	Amity Harbor Civic Association
E4	Marina
E5	Montauk Highway Corridor Commercial
S1	NYS OPWDD State and Voluntary Program Location
S2	NYS OPWDD State and Voluntary Program Location
S3	Copiague Fire Department Headquarters
S4	Amityville Memorial High School
S5	Park Avenue Memorial Elementary School
S6	Enviro-Test. Inc. (Portable X-ray Fluorescence Analyzer)
S7	Deauville Gardens School
S8	South Shore Cardiovascular Medicine, P.C. (Medical - Nuclear Cardiology)
S9	Bennett Place Fire Department Facility
S10	Amityville Heart Center (Medical - Private Practice)
S11	Scudder Avenue School
H1	Copiague Residential
H2	Amityville Residential
H3	Copiague Residential
H4	Amityville Residential
H5	Copiague Residential
H6	Amityville Residential
I1	Sanitary Pump Station
I2	County of Suffolk

LEGEND
E = Economic Assets
S = Health and Social Services Assets
H = Housing Assets
I = Infrastructure Assets
N = Natural and Cultural Resource Assets
Red = Severe Risk
Orange = High Risk
Yellow = Moderate Risk
Green = Residual Risk



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Table 15: Risk Assessment Table (cont'd)

Risk Map ID# ^{xxxiv}	Name
I3	Long Island Railroad
I4	Long Island Railroad
I5	Montauk Hwy (Copiague)
I6	County of Suffolk - 235 Imola Pl
I7	County of Suffolk - Straight
I8	Town of Babylon - Lafayette St
I9	Town of Babylon - 163 Copiague Pl
I10	Suffolk County Water Authority - Lambert Ave
I11	Town of Babylon - Beachview St
I12	Town of Babylon
I13	Town of Babylon - 108 Copiague Pl
N1	Amityville Beach and Pavilion
N2	Copiague Harbor Beach
N3	Tanner Park and Facilities
N4	Strong Creek
N5	Great Neck Creek
N6	Amityville Creek
N7	Unqua Corinthian Yacht Club
N8	Santa Barbara Canal
N9	Howell Creek
N10	Grand Canal
N11	Narrasketuck Creek
N12	James Caples Memorial Park
N13	Wood Creek
N14	Indian Island County Park

LEGEND
E = Economic Assets
S = Health and Social Services Assets
H = Housing Assets
I = Infrastructure Assets
N = Natural and Cultural Resource Assets
Red = Severe Risk
Orange = High Risk
Yellow = Moderate Risk
Green = Residual Risk



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Table 15: Risk Assessment Table (cont'd)

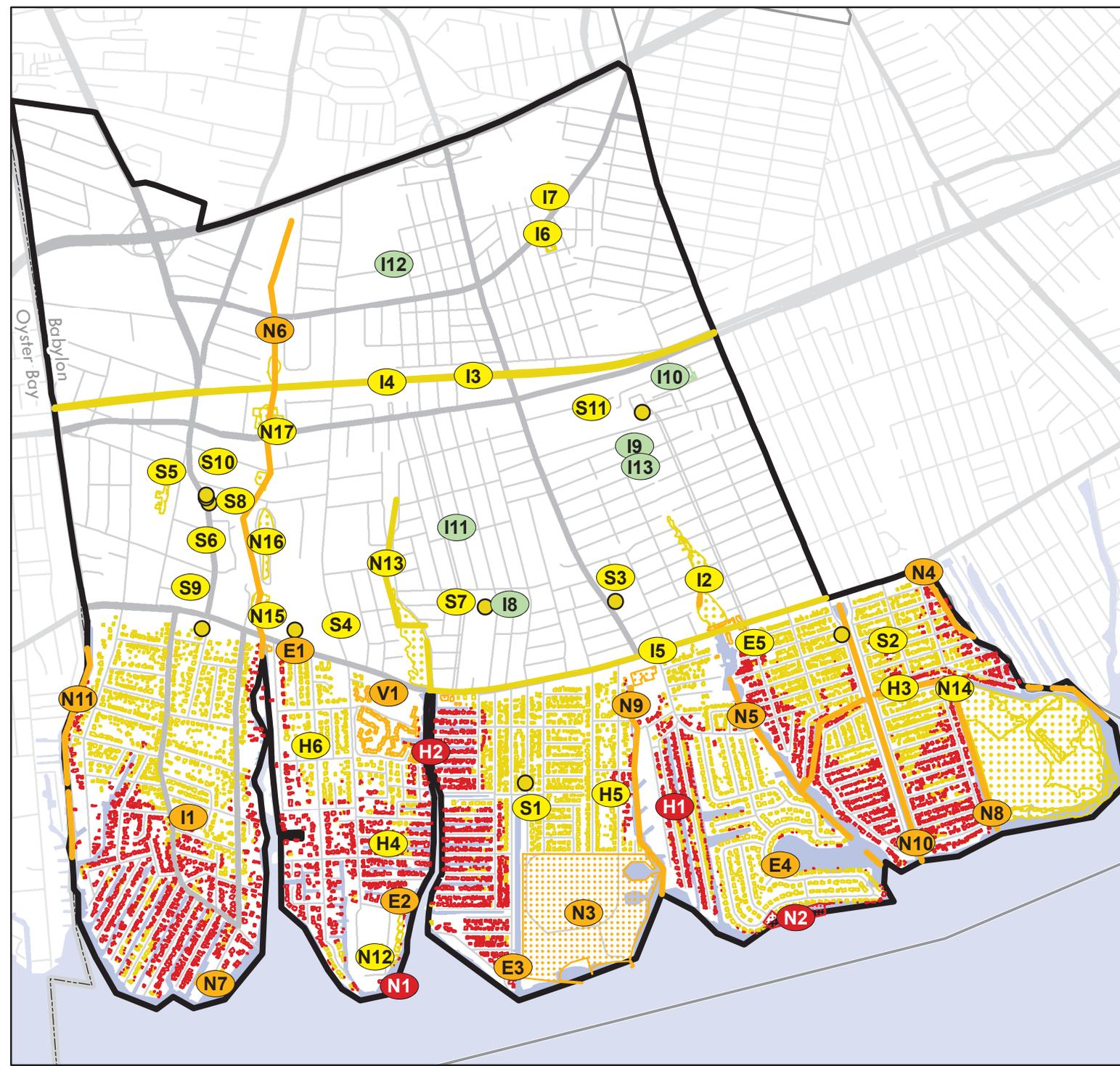
Risk Map ID# ^{xxxv}	Name
N15	Freshwater Wetland
N16	Freshwater Wetland
N17	Peterkin Park
V1	Snug Harbor

LEGEND
E = Economic Assets
S = Health and Social Services Assets
H = Housing Assets
I = Infrastructure Assets
N = Natural and Cultural Resource Assets
Red = Severe Risk
Orange = High Risk
Yellow = Moderate Risk
Green = Residual Risk



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Figure 3: Assets at Risk



- Severe Risk
- High Risk
- Moderate Risk
- Residual Risk

- Village of Amityville/Copiague NYRCR Planning Area
- Other NYRCR Planning Areas
- Municipal Boundary

Assets on this map are identified by Risk ID # in the Asset Risk Table within the document.





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The area south of Montauk Highway is predominantly comprised of residential properties, many of which back on to canals. This area is subject to persistent, recurring flooding during both major storms and typical seasonal weather and high tides. Throughout the course of the planning process, the susceptibility of this area was raised by Village and hamlet residents at the Public Engagement Events and by members of the Committee at their working sessions. Most recently, there was flooding throughout this area in January 2014 as a result of winter snowfalls and subsequent melting. More than a year after Superstorm Sandy this neighborhood is still recovering with homes in various states of construction (including raising). Other properties are for sale, abandoned, or in disrepair; all of which was evident during field reconnaissance by the Consultant Team. As a result, adequately addressing the needs of those residing south of Montauk Highway was of great concern to the NYRCR Planning Committee. This anecdotal evidence has been validated through the Risk Assessment Analysis as residential assets situated south of Montauk Highway with adjacencies to the canals and those towards the Great South Bay generally had Severe Risk Scores with some residential assets having High Risk Scores interspersed.

Non-residential assets that had Severe Risk Scores are immediately adjacent to the Great South Bay. These assets are the waterfront recreational areas of the Amityville Beach and Pavilion and the Copiague Harbor Beach. The NYRCR Planning Committee identified that these waterfront beaches and parks are important assets that contribute to the overall high quality of life of our Community and it is therefore important to protect these assets and make them more resilient.

The High Risk Score non-residential assets are in the vicinity of the Great South Bay or its associated creeks and canals. Adjacent or nearby the Great South Bay, these High Risk Score assets include commercial/marine facilities, civic associations and parks – marine businesses, yacht/boating clubs, marinas, Amity Harbor Civic Association, and Tanner Park. Creeks and canals associated with the Great South Bay are High Risk Score assets which include Great Neck Creek, Amityville Creek, Howell Creek, Narrasketuck Creek, Santa Barbara Canal, and Grand Canal. High Risk Score assets adjacent or nearby these creeks and canals include utilities, businesses and senior housing - a sanitary sewer pump station, the Montauk Highway Corridor commercial area, and the Snug Harbor development. The Risk Assessment Analysis validated the NYRCR Planning Committee observations and experiences indicating that these High Risk Score assets were important to consider for resiliency improvements.



B. Assessment of Needs and Opportunities

The Committee initially identified needs and opportunities based on the community's reconstruction and economic growth goals, existing plans and studies, and the community's overall vision for its future. The term "need" is used here to illustrate infrastructure and services that were damaged or rendered inoperable by Superstorm Sandy as well as methods and operations that failed to work during the storm event or that experienced insufficient capacity to respond effectively.

Thinking through what took place during the storm event, as well as what was damaged, provided the Committee with insights as to the inherent resiliency of those structures, procedures, and operations. This assessment process led to a frank discussion of community needs and includes recognition of changing climate patterns and the economic and practical necessity of factoring resiliency and adaptive capacity into recovery actions.

Opportunities are based on the idea that additional resiliency benefits, whether economic, environmental, social, or cultural may be achieved through the integration of new methods, procedures, and materials into the course of rebuilding.

The post-disaster environment also presents opportunities to rebuild in such a way as to create a community that is stronger and more resilient to future storms. Resilient communities tend to have redundant infrastructure and communication systems, diverse and flexible adaptation strategies, and collaborative public and private partnerships.

Throughout the NYRCR Plan, you will see needs, opportunities, and projects categorized by their Recovery Support Function (or RSF).^{xxxvi} FEMA uses these RSFs to identify, coordinate, and ultimately deliver assistance to the Community from several different funding sources available in the recovery effort – e.g., Federal, State, private, philanthropic, and not-for-profit. The "Economic Development" RSF, for example, will help bring together all the possible sources of assistance to achieve business recovery and resiliency through the projects identified by the Community (discussed further in Section IV: Proposed and Featured Project Profiles). There are six RSFs. They are listed and defined below.

- **Community Planning and Capacity Building:** The community's ability both to implement storm recovery activities and to plan to mitigate the effects of future storms.



Flooding on Montauk Highway during Superstorm Sandy.



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- **Economic Development:** Returning economic and business activities to a state of health and developing new economic opportunities that result in a stronger, more resilient community.
- **Health and Social Services:** The restoration, and potential expansion of public health programs, health care facilities and essential social services, especially for vulnerable populations on the Island.
- **Housing:** An assessment of local housing conditions and associated risk levels is critical as communities continue to rebuild.
- **Infrastructure:** Investments in infrastructure can be effective both in rebuilding capabilities lost during the storm and in reducing future risks to critical assets.
- **Natural and Cultural Resources:** The rehabilitation, management, and protection of natural and cultural resources that define a community's physical and human character.

The following is a discussion of the needs and opportunities identified by NYRCR Village of Amityville/Copiague Committee members and community at large. A table that lists the needs and opportunities of NYRCR Village of Amityville/Copiague is found at the end of this section.

Community Planning and Capacity Building

The Committee identified that their community's uniqueness should be preserved and improved upon. Despite the devastation from Superstorm Sandy, this community rallied and pulled together, helping one another to recover. The Committee recognized that this community spirit is critical to the recovery process and that planning for the future should keep these principles in mind. Therefore, the Committee felt strongly that improvements to increase their future resiliency should include making changes that are gradual and controlled. As building, codes, plans, and permits are reviewed by the Village and Town to incorporate storm resiliency protections, preserving the quality of life and character of this community should guide the updates.

During Superstorm Sandy, emergency service providers and local governments did not have the organizational mechanisms and equipment in place to adequately respond. Based upon these experiences, there is a need to make improvements to emergency information, policies, procedures, and tools used by local police, fire, highway, and municipal governments. First responders did not have the equipment necessary to handle an emergency event of this magnitude. The Committee and the Community have indicated that there is a need to provide the emergency equipment in order to more



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effectively respond to emergencies in the future. The critical emergency equipment lacking in the Community includes rescue trucks and boats, life safety equipment, fire/police/municipal communications equipment and emergency supplies. The Superstorm Sandy experience highlighted that a high level of preparedness is required prior to the next emergency event. The Committee identified that preparedness includes the identification of evacuation routes and markers. Also discussed by the Committee was emergency access to hospitals. It was identified that while the nearest hospital to the Town of Babylon is Good Samaritan in neighboring West Islip, its location near the water and the risk of access being blocked along Montauk Highway has led the Committee to discuss the importance of ensuring emergency access to the west in Massapequa and the Town of Oyster Bay to hospitals in Nassau County.

During Superstorm Sandy there were challenges disseminating evacuation and emergency information because the appropriate communication protocols were not in place. Protocols that were absent included a communications plan to address how to ensure that emergency information was provided to every resident in the Community, that businesses were well informed, and that information was coordinated among all emergency providers. Many people in the community were not well informed prior to Superstorm Sandy about the seriousness of the threat. Particularly at risk were the vulnerable populations in the community, especially seniors and the non-English-speaking community, who may not have access to emergency information. This is a unique need in Copiague where 33% of the population is Hispanic/Latino. Members of the Community feel that had there been better information there would have been more evacuations, and they would have occurred earlier. To some extent, assets and private property could have been better secured had there been more information prior to the event. In addition, many people were reluctant to evacuate, citing the distance of the nearest evacuation center and the lack of available gasoline as a reason. Based on this reluctance to evacuate during Superstorm Sandy, Committee members felt that an evacuation center closer to or within the Village of Amityville or hamlet of Copiague, would encourage more evacuations during future emergency events. Also at issue was the need for communications during the event. With traditional means of mass communication such as telephone and television out of service because of the storm, there was a lack of ability to provide information about evacuation locations, evacuation routes, updates about the storm, and other critical news.



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Economic Development

Providing for the economic resiliency of the Community is a critical need. During Superstorm Sandy, the Community experienced a loss of economic activity because businesses were closed for extended periods, ranging from a few days to several months. Businesses were closed because of flooding of their facilities and lack of communication services. Businesses were also impacted by decreases in sales activity because homeowners were occupied with the restoration of their homes. The Committee recognizes that the economic health of the Community, a stable tax base, and job growth are all important factors for the Community. Total primary jobs in 2011 in the Village of Amityville was 4,308 and in Copiague was 5,908, with employment in Health Care and Social Assistance comprising more than 20 percent of all jobs in both communities^{xxxvii}. Preserving these jobs and providing for targeted growth is important for the Community. Another important feature of the economy are the downtown centers; the Village of Amityville and Copiague both have downtowns that are important commercial centers for the Community. In their planning work, both communities have identified that strengthening and improving their downtown areas are important for the future of the community. The Montauk Highway commercial corridor is another important commercial area in both communities that must grow economically for the Community to be resilient. The Committee and members of the public recognized that the economy of both communities is closely related to their location on the Great South Bay; therefore, the health of the Bay is also critical to the overall long term economic resiliency of both the Village of Amityville and Copiague.

Health and Social Services

During Superstorm Sandy, evacuation of vulnerable populations was an important concern. Certain vulnerable populations, especially the elderly, were not well informed about Superstorm Sandy and did not take proper precautions such as purchasing sufficient groceries and medications prior to the event; many did not evacuate. The Village of Amityville and Copiague both identified that there is a need to assist the elderly and special needs populations before, during, and after emergency events in the future. In addition, Superstorm Sandy also created a situation where many roads were impassable because of flooding or downed utility lines. The community therefore identified that there is a need to ensure that roadway access is maintained to hospitals, medical facilities, and evacuation centers for all residents, particularly vulnerable populations, during emergency events.



The Village of Amityville has identified that strengthening and improving the downtown commercial area is important for the future of the Community.



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Housing

The devastation to the housing in both the Village of Amityville and Copiague from Superstorm Sandy highlighted that there is a critical need to make housing more resilient. As noted in Section I, 23% of the entire housing stock in the Village of Amityville was damaged and 27% of the entire housing stock in Copiague was damaged^{xxxviii}. A majority, 98%, of the damaged homes experienced one to four feet of water from flooding during Superstorm Sandy^{xxxix}. These facts underscored for the Committee and the public the need to seek strategies to make residential neighborhoods more resilient to flooding. In addition, the Committee has indicated that there are approximately two dozen damaged homes that remain empty or abandoned by home owners^{xl}. These homes have become a great concern to surrounding neighbors for health, safety, and economic reasons. The Committee identified that there is a need to address the presence of empty and abandoned buildings or houses in the community since Superstorm Sandy.

During the post-Superstorm Sandy period, there has been a lot of concern and confusion in the community about residential house insurance rates. Committee Members identified that there is a need to provide public education on relationship between housing resiliency, building codes, and flood insurance rates as this has become a critical issue since Superstorm Sandy.

Infrastructure

Superstorm Sandy ravaged the infrastructure in the Village of Amityville and Copiague. The Storm inundated the storm sewer system, forcing flood waters and debris up through the system onto streets and into homes, damaging the piping and catch basins of the storm sewers themselves and flooding adjacent properties. The storm dismantled bulkheads, washing the storm surge over, through, and around their remnants and eroding land behind the bulkhead. Winds and flood waters brought down trees and utility lines, leaving a community in the dark with no means of communications. The Committee and the Community have identified that strengthening infrastructure is a need of paramount importance for resiliency. Addressing the flooding of streets and properties is a significant need in both communities. Strengthening and improving utilities to prevent power outages such as those experienced during and after Superstorm Sandy in the future was a strong theme among the Committee and Community residents. The Committee identified the importance of working with regional power suppliers to harden power, gas, and oil supplies to the community as well as exploring the installation of alternative utility systems such as solar, geothermal, and microgrids. There is a need to address



Many residents remain displaced from their damaged homes.



Trees knocked over by Superstorm Sandy pulled down utility lines.



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repetitive flooding that comes over damaged bulkheads and back up through the storm drainage system is a critical need particularly below Montauk Highway. Ensuring that fuel distribution and personal communication system are more resilient and reliable during emergencies is an important need identified by the community as these systems were not available for extended periods during and after Superstorm Sandy.

During Superstorm Sandy, it was also apparent that there were deficiencies in the transportation system which prevented efficient and effective evacuation. The same deficiencies hampered recovery after the storm passed. The deficiencies identified involved bridge weight limits and roadway elevations. Two bridges in the American Venice neighborhood of Copiague could not be traversed by emergency equipment because of weight limits. As the bridges are the only means of access to these neighborhoods, residents were at an extremely elevated level of risk. Low roadway elevation is another deficiency in the community. Low-lying roadways flooded during Superstorm Sandy creating situations where evacuees and emergency responders could not traverse the flooded roadway. Often in these locations there is no alternate route as many local streets dead end on the bays, creeks, and canals. There is a need to address these emergency access and evacuation needs for these neighborhoods to be safe and resilient to face of future storms by addressing roadway flooding and bridge weight limits.

Natural and Cultural Resources

Natural and cultural resources in NYRCR Village of Amityville/Copiague took the brunt of the force of Superstorm Sandy. Many resources such as the Amityville Beach and Tanner Park are located on the waterfront and as such saw severe impacts from storm surge flooding and high wind. The Community has expressed strongly that opportunities to protect and enhance recreational, cultural, and historic assets, particularly as they relate to the Great South Bay are critical to future resiliency. The Community recognizes the importance of natural resources such as the creeks, canal system, and wetlands. Waterfront parks are both important natural and cultural resources and are important opportunities for improved resiliency in these communities. The presence of these natural features improve resiliency by decreasing the exposure and vulnerability of assets behind them and providing a large public area for recovery activities after emergency events. These assets, such as the Amityville Beach Pavilion, saw upwards of 6 feet of storm surge and flooding during Superstorm Sandy. These critical features in the community are opportunities that should be maximized. There are many historic buildings and neighborhoods in these communities that are important to preserve and enhance such as the Village of



Local street flooding during Superstorm Sandy was a serious issue.



The canals are an important resource which took the brunt of the force from Superstorm Sandy.



Village of Amityville/Copiague NY Rising Community Reconstruction Plan

Amityville downtown, Copiague downtown, train stations and the American Venice neighborhood. The Committee supports natural and cultural resources initiatives such as the consistent dredging of the Fire Island Inlet and Great South Bay channels as a source of suitable materials to rebuild, replenish sand and ensure viability of outer beach dune/beach infrastructure, flood proofing infrastructure, facilities and buildings at Village/Town waterfront parks, stabilizing the western shoreline of Tanner Park abutting the western concourse canal, nourishing beaches and enhancing the resiliency of waterfront parks.

Table 16 summarizes the Needs and Opportunities identified through the planning process.



Village of Amityville/Copiague NY Rising Community Reconstruction Plan

Table 16: NYRCR Village of Amityville/Copiague Needs and Opportunities

Community Planning and Capacity Building
<p>Need: Allow for gradual and controlled change/improvements while keeping our uniqueness.</p> <p>Opportunity: Revise/update building codes, zoning ordinances, comprehensive plans, and subdivision/site plan regulations to require resilient construction techniques, materials and storm resiliency protections for all new structures in high and extreme risk areas.</p>
<p>Need: Improve emergency information, policies, procedures, and tools used by local police, fire, highway, and municipal government.</p> <p>Opportunity: Improve emergency management and first response systems.</p>
<p>Need: Provide better information to the public regarding risk and evacuation procedures.</p> <p>Opportunity: Provide public education on the impacts in flood prone areas on life and property, insurance, storm preparedness, evacuation areas, securing of property and safety</p>
<p>Need: Create evacuation route out of the Village of Amityville/Copiague, as none currently exists.</p> <p>Opportunity: Coordinate with adjacent municipalities to create a uniform evacuation route out of areas south of Montauk highway.</p>
<p>Need: Develop arrangements in advance for short term shelters during emergency events.</p> <p>Opportunity: Several existing public facilities such as schools are located outside the flood zone that could potentially be used as shelters.</p>
Economic Development
<p>Need: Maintain and grow local tax base, create jobs and provide for the resiliency of the economy.</p> <p>Opportunity: Support the needs of commercial centers in the downtowns, along Montauk Highway, and near the waterfront without compromising the primarily residential character and Village/Hamlet way of life.</p>



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Table 16: NYRCR Village of Amityville/Copiague Needs and Opportunities (cont'd)

Health and Social Services
<p>Need: Special needs populations require assistance before, during, and after emergency events.</p> <p>Opportunity: Develop a plan for identifying special needs populations such as the elderly, children, disabled, and non-English-speaking populations and plan for their unique requirements recognizing the diverse population mix of age groups, ethnic backgrounds, and abilities.</p>
<p>Need: Access to hospitals, medical facilities, and evacuation centers during emergencies.</p> <p>Opportunity: Raise critical roadways that provide access to these facilities; provide public transportation or alternative methods of access to these areas for special needs populations.</p>
Housing
<p>Need: Provide public education on location of housing, building codes, and flood insurance rates.</p> <p>Opportunity: Change in Federal flood insurance programs and destruction caused by Sandy has elevated the awareness of risk to homeowners presenting a good opportunity for the Village and Town to educate the public about the risks of living on the coast, the options available to increase resiliency, and the relation to flood insurance rates.</p>
<p>Need: Increase resiliency of housing.</p> <p>Opportunity: Develop a program that assists individual property owners and small businesses in navigating the complexities of insurance requirements, public programs, permitting, and issues related to raising their homes.</p>
<p>Need: Address the presence of empty and abandoned buildings/houses since the storm.</p> <p>Opportunity: Identify abandoned properties south of Montauk Highway and develop a plan for their acquisition, use, management, and maintenance.</p>



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Table 16: NYRCR Village of Amityville/Copiague Needs and Opportunities (cont'd)

Infrastructure
<p>Need: Mitigate repetitive flooding on roadways and property.</p> <p>Opportunity: Install back flow valves at outfalls, create ponding areas for stormwater to collect and infiltrate into the ground, raise roadways, and expand wetland areas.</p>
<p>Need: Improvements to utility services.</p> <p>Opportunity: Work with regional power suppliers to harden power, gas, and oil supplies to the community; explore installation of alternative systems such as solar, geothermal, microgrids.</p>
<p>Need: Deficiencies in the transportation system which prevent efficient and effective evacuation.</p> <p>Opportunity: Address bridge weight limits and low roadway elevations.</p>
Natural and Cultural Resources
<p>Need: Preserve homes and resources associated with the Great South Bay.</p> <p>Opportunity: Preserve historic resources including downtowns, train stations, and historic housing; nourish beaches.</p>
<p>Need: Protect and enhance recreational, cultural, and historic assets.</p> <p>Opportunity: Support the consistent dredging of the Fire Island Inlet and Great South Bay channels as a source of suitable materials to rebuild, replenish sand and ensure viability of outer beach dune/beach infrastructure, flood proof infrastructure/facilities/buildings at Village/Town waterfront parks, stabilize the western shoreline of Tanner Park abutting the western concourse canal, and enhance the resiliency of waterfront parks.</p>



Section III: Reconstruction and Resiliency Strategies

The process of identifying the community's post-storm needs and opportunities informed the NY Rising Community Reconstruction (NYRCR) Planning Committee's (Committee) development of strategies to resolve needs and realize opportunities. In turn, the strategies assisted in the conceptualization and design of projects to specifically address the needs and opportunities. Strategies are broad plans, methods programs, policies, or other actions that specifically address an identifiable need or meet a specific goal, often over a long period of time. Typically, there exist several strategies to address a given need. Communities are most successful when they blend traditional stabilization and repair actions with a holistic, long-range, forward-looking view of recovery and economic development. This section presents the strategies developed by the Committee for how best to use community assets, capitalize on opportunities, and resolve critical issues.

For every need or opportunity, potential strategies were generated for each resiliency issue from multiple management angles. The list of strategies spans an array of methodologies and timeframes, from preparedness to retrofits, from immediate procedural improvements to long-range capital investment programs. Strategies also include conservation of natural protective features, regulatory changes and building code updates, structural defenses, resilient retrofits, market measures, land use planning, and education and outreach in an effort to employ multiple, complementary actions rather than relying on a single means of protection.

Careful consideration was given to what is at risk, what resources are available, and the capacity to implement various management measures. As general resiliency strategies evolved to specific projects and actions several factors were considered to begin prioritizing the most effective and feasible strategies. These considerations included: how each strategy relates to Superstorm Sandy's impacts on NYRCR Village of Amityville/Copiague; to what extent each strategy would reduce current and projected risk; whether it contributed to protection of vulnerable populations; feasibility of a successful implementation; compliance with existing regulations; upfront and long-term maintenance costs; direct and indirect benefits; and public perception.



Street scene during the days after Superstorm Sandy.



A. Reconstruction and Resiliency Strategies

The following strategies were developed by the Committee as a roadmap to a more resilient community. Reconstruction strategies were based on the identified assets at risk and the community's needs which were discussed in the previous section. Each strategy was developed by taking into account these key considerations: (1) how the strategy will address risk and satisfy the needs of the community; (2) how the strategy will help vulnerable populations; and (3) how strategies will be implemented through projects. Proposed projects that fit within each strategy are also briefly described.

Strategy: Establish local emergency evacuation routes and facilities.

Recognizing the need in the Community to develop arrangements in advance for short term housing and to ensure access to critical facilities during and after emergencies the Committee developed this strategy which supports the Community Planning and Capacity Building Recovery Support Function (RSF).

The lack of a nearby evacuation center was a deterrent to evacuation for residents of the Village of Amityville and Copiague during Superstorm Sandy. Some residents, especially the elderly and non-English speaking populations, often do not want to leave their community or may not have the means to travel great distances to a shelter and are at greater risk if they do not evacuate. In order to address this critical issue one Proposed Project was developed. Establishing a local evacuation facility in the community outside the flood zone will encourage more residents to seek safety. Several public buildings that have potential to be used as a temporary shelter are located outside of the flood hazard areas and provide an opportunity to establish a local shelter in the short term with the addition of a permanent generator to ensure a continuous power supply during outages. A permanent generator is anticipated to cost approximately \$350,000.

An Additional Resiliency Recommendation to address this strategy is an Evacuation Route Marker and Flood Height Marker System which would designate, design, and implement a system of evacuation route markers and flood height markers to aid in emergency evacuation and flooding/emergency awareness (described in more detail in Section V.A).



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Strategy: Establish local emergency evacuation routes and facilities.				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Local Emergency Evacuation Center Permanent Generator	Install a permanent generator at a local public facility to create a shelter and drop-in center for use during emergency events. Existing school facilities outside the flood zone have been discussed with a final location to be determined.	\$350,000	Proposed	N

Strategy: Ensure access into and out of hazard areas for residents and first responders.

Recognizing the need in the Community to ensure access out of and into hazard areas for evacuation and post emergency activities, the Committee developed this strategy which supports the Infrastructure RSF.

There were serious safety concerns during Superstorm Sandy for certain areas of the Community where flooded roads or inadequate infrastructure did not allow for evacuation of residents and/ or response by emergency services personnel leaving those who did or could not evacuate at greater risk to injury. In order to address this critical issue one Proposed Project was developed.

During Superstorm Sandy there were serious safety issues for the residents of the American Venice neighborhood. Two bridges supply the only vehicular access into or out of this neighborhood, which is surrounded by canals on three sides and Great South Bay on the fourth. Residents and property in the neighborhood are at risk from injury and fire because rescue workers and certain fire protection equipment cannot access the area due to weight restrictions on the bridges. Since the only deterrent to accessing the neighborhood is the two bridges over the canals, the ability to upgrade or replace bridges presents an opportunity to correct the vehicular access issue at this location. This project would cost approximately \$1,000,000 for the rehabilitation of the bridges or approximately \$8,000,000 if replacement of the bridges is needed.



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Strategy: Ensure access into and out of hazard areas for residents and first responders.				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
American Venice Bridges Improvements	This project will rehabilitate or replace bridges in the American Venice area of Copiague at East Riviera Drive and West Riviera Drive.	\$1,000,000 rehabilitation; \$8,000,000 replacement	Proposed	N

Strategy: Improve municipal emergency preparedness.

Recognizing the need in the Community to ensure that local police, fire, highway, and emergency management teams have the correct information, appropriate policies, documented procedures, and an adequate supply of tools to address emergency events in the future the Committee developed this strategy which supports the Community Planning and Capacity Building RSF.

Local government is the first to respond in emergency events. This requires a set of policies and procedures to be strictly followed, correct information regarding the situation in various parts of the Community to be available to responders, and an adequate supply of equipment available in order to meet a variety of emergency response needs. During Superstorm Sandy emergency responders in the Village of Amityville and hamlet of Copiague were faced with evacuation and recovery efforts but lacked appropriate tools and supplies to perform that function leaving those that did not evacuate from hazard areas at greater risk to injury. The storm raised the community’s awareness of the need to have a sufficient supply of a variety of emergency preparedness equipment on hand. The Committee identified one Proposed Project in order to meet this critical need.

The procurement of heavy duty rescue and emergency preparedness equipment is necessary to properly respond during a storm emergency and also for recovery efforts after the storm has passed. In order to be properly prepared the Community will need to acquire equipment such as generators to keep emergency response facilities operable during a power outage, rescue boats and high water evacuation trucks to allow for evacuation of residents that may be stranded in areas inaccessible due to flooding, and various other tools and equipment such as pumps and trucks to assist with debris clean up



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and roadway access reestablishment. It is anticipated that it will cost approximately \$3,000,000 to implement this project and get the Communities properly equipped to adequately handle another natural disaster.

Additional Resiliency Recommendations to address this strategy are the Village of Amityville Fire Department Main Headquarters Extension, Village of Amityville Mill Street Fire House Expansion, Copiague Fire Department Storage Facility/ Temporary Housing Unit, Emergency Supplies, and Additional Resiliency Equipment and Supplies (described in more detail in Section V.A).

Strategy: Improve municipal emergency preparedness.				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Resiliency Equipment	Purchase of equipment to address deficiencies in emergency preparedness during storms. Potential equipment includes fire department search and rescue boats, generators, and evacuation trucks.	\$3,000,000	Proposed	N

Strategy: Mitigate repetitive flooding.

The ability to reduce the amount of flooding in the community is a critical need; therefore the Committee developed this strategy which supports the Infrastructure RSF.

Flooding in the Community results from various factors, most significantly deficiencies in the storm drainage system, compromised bulkhead protections, and low elevation of roadways. Superstorm Sandy caused significant damage to components of the storm sewer system and the public bulkhead system. Powerful waves carried surge waters laden with heavy debris and sand into the storm drainage system collapsing pipes and damaging catch basins as well as damaging bulkheads and eroding the shore behind them. Homes, business, and streets sustained up to four feet of flooding as stormwater backed up through the drainage system, flooded low lying streets, and/or overtopped the bulkhead system. To address these critical issues two Proposed Projects were developed.



Flooding at street end during Superstorm Sandy.



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To address the problem of backflow through the storm drain system the Committee developed of the Proposed Project of comprehensive storm sewer improvements. This project will investigate opportunities for expanding the capacity of the storm drainage system using measures such as improving outfalls and/or installing backflow preventers/flapper valves, including repairs/upgrades to areas south of Montauk Highway that suffer frequent flooding. In certain areas it may be necessary to do limited elevation of the roads to accommodate the necessary drainage improvements. This project is anticipated to cost up to approximately \$10,000,000.

The storm surge from Sandy also severely damaged bulkheads in the Community leading to erosion behind the damaged bulkhead and additional flooding of adjacent streets and residences. To address this, the Proposed Project of Waterfront Resiliency Improvements was developed. This is a long term comprehensive plan to provide for repair, replacement, or creation of appropriate built shoreline treatments along shorelines and road termini. It is estimated that this project will cost approximately \$3,000,000.

Additional Resiliency Recommendations to address this strategy to mitigate repetitive flooding are the Montauk Highway Roadway Improvements and Natural Recharge and Runoff Reduction Project (described in more detail in Section V.A).

Strategy: Mitigate repetitive flooding				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Storm Sewer Improvements	Implement repair, replacement, or upgrades to the storm sewer system in locations south of Montauk Highway which experience severe recurring flooding during major storm events such as Superstorm Sandy.	\$10,000,000	Proposed	N
Waterfront Resiliency Improvements	Develop a long term comprehensive plan and implement rehabilitation of built shoreline treatments along shorelines and road termini in targeted locations.	\$3,000,000	Proposed	N



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Strategy: Improve resiliency of waterfront parks

The Committee developed this strategy in response to the Community identifying water front parks as an important asset; this strategy applies to the Natural and Cultural Resources RSF.

Waterfront parks provide recreational opportunities, positively influence the quality of life in the area, and serve as buffer to Great South Bay for the inland residential areas. Assets located on the waterfront took the brunt of Superstorm Sandy's force. The pavilion at the Village of Amityville Beach was completely destroyed, natural beach areas at Copiague Harbor Beach, Tanner Park and other locations were eroded, and creeks, canals and wetland areas were inundated with floodwater that left damage and debris. Many low income children and income limited seniors uses the public waterfront areas as their only source of recreation. In order to address the critical need to re-establish the Natural & Cultural assets destroyed by Sandy the Committee developed one Proposed Project.

The importance of the Amityville Beach pavilion to the Community resulted in the project to restore the pavilion. In a twist of fate the total destruction of the pavilion creates an opportunity to rebuild the structure to be more resilient and better ride out future storms. Once completed the Village will be able to once again fully open the facility and provide the entire Community with summertime beach experiences. These important community and recreational experiences have not been available since Superstorm Sandy. The estimated cost for this project is approximately \$1,500,000.

An Additional Resiliency Recommendation to address this strategy is to Equip a Waterfront Park for Use as Post-Event Staging Facility (described in more detail in Section V).



Superstorm Sandy flooding at waterfront park in Amityville.

Strategy: Improve resiliency of waterfront parks				
Project Name	Short Project Description	Estimated Cost	Proposed or Featured Project	Regional Project (Y/N)
Amityville Beach Pavilion Restoration & Resiliency	This project will repair and improve the resiliency of the beach pavilion at Amityville Beach.	\$1,500,000	Proposed	N



Section IV: Implementation – Project Profiles

This section provides a complete Project Profile for each Proposed or Featured Project identified by the NY Rising Community Reconstruction (NYRCR) Committee (Committee) and Community. In addition to providing a detailed description of each project, the profiles include information on two important elements used by the Committee to evaluate the value of each project – a Cost-Benefit Analysis and a Risk Reduction Analysis. Before proceeding to the projects themselves, it is important to understand these two analytical elements of the Project Profiles.

Cost-Benefit Analysis

A cost-benefit analysis (CBA) is a tool used to evaluate the benefits and costs associated with a project. The CBA provides decision-makers with a framework for comparing different projects (i.e., anticipated cost of implementation against total expected benefits), and determining whether the benefits of a particular project outweigh the costs. More specifically, the value of the CBA is two-fold: (1) to inform the selection of projects; and (2) to support grant applications for funding opportunities.

Because the NYRCR Program is a community-driven process, the CBA has focused on identifying project costs and benefits that easily relate to the communities that the NYRCR Planning Committees represent. Community and Committee input--informed by a true understanding of local conditions, needs and community values--plays a crucial role in the selection of projects that are implemented. With this in mind, the CBA has used a mix of both quantitative and qualitative factors in its analysis.

The CBA cannot, however, evaluate costs or benefits with complete certainty; rather, it provides the Community with a practical understanding of the potential estimated costs of project implementation and the potential benefits accrued to the community with the particular project in place. The costs and benefits used to evaluate projects through the CBA are explained further below.

Project Costs

Project Profiles include a detailed break-down of all anticipated costs, both short-term and long-term -- e.g., construction, operation and maintenance costs, as well as overall life-cycle costs. The cost of implementing a project is just one aspect of the justification for funding of these projects. Conversely,



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another important variable is the future costs of not implementing these projects -- which have the potential to negatively impact the long-term viability of both the Village and its neighboring South Shore communities. While these costs are more difficult to quantify, they are no less important to the analysis, and are therefore addressed qualitatively. These costs include:

- Extensive, repetitive damage to personal property (e.g., vehicles and residences) and public infrastructure resulting from frequent recurring flooding and future storm events;
- Economic loss to residents and to local and regional employers as a result of the inability to work; and
- Hindrance in the provision of life safety and emergency services resulting in repeated inability to access areas of the community

Project Benefits

The types of benefits considered in the CBA include:

- **Risk Reduction:** The extent to which a project reduces the risk of damage to a community asset from a future storm event (discussed further below under “Risk Reduction Analysis”).^{xli}
- **Economic Resiliency:** The project’s potential to help minimize economic costs and reduce the time it takes for the local economy to rebound from a storm event. Economic data included, where applicable, an estimate of permanent jobs secured/added; relationship to, and/or furtherance of, Regional Economic Development Plan goals; potential for additional economic activity; and the net effect on local municipal expenditures.^{xlii}
- **Health, Social and Public Safety Services:** Qualitative information was provided on the overall population benefits of improved access to health and social service facilities and public safety services; type and size of socially vulnerable population secured;^{xliii} and degree to which essential health and social service facilities are able to provide services to a community during a future storm or weather event as a result of the project.
- **Environmental Protection:** Benefits include the protection of crucial environmental assets (e.g., beaches, dunes, and wetlands) or high-priority habitat, threatened and endangered species, migration or habitat connectivity; any clean-up resulting from the action; creation of open space or a new recreational asset.



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Risk-Reduction Analysis

A Risk Reduction Analysis estimates the extent to which Proposed and Featured Projects could reduce storm damage and flood risk to specific community assets when the project is in place. (The extent to which a project reduced such risk is also considered as a benefit in the Cost Benefit Analysis -- see "Project Benefits" above.) Risk "Reduction" is different from the Risk "Assessment" in Section II in a very important way – Risk Assessment looks at storm and flood risks to community assets before the project is implemented; Risk Reduction looks at the reduced risk after the project is in place.

For the Risk Reduction Analysis, projects were evaluated under a three-foot rise in sea level scenario for their potential to reduce an asset's level of exposure and/or vulnerability to future storms. This helps communities and decision-makers understand the potential environmental, social and economic outcomes associated with implementing a project. (For a more detailed discussion of the methodology and factors used in the risk reduction analysis, see Section V.)

Project Profiles

The NYRCR Program has allocated to the Community up to \$14.1 million (Village of Amityville: up to \$5.6 million; Copiague: up to \$8.6 million. The funding is provided through the U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant – Disaster Recovery (CDBG-DR) program. While developing projects and actions for inclusion in the NYRCR Plan, Planning Committees took into account cost estimates, cost-benefit analyses, the effectiveness of each project in reducing risk to populations and critical assets, feasibility, and community support. Planning Committees also considered the potential likelihood that a project or action would be eligible for CDBG-DR funding. The projects and actions set forth in the NYRCR Plan are divided into three categories. The order in which the projects and actions are listed in the NYRCR Plan does not necessarily indicate the Community's prioritization of these projects and actions. Proposed Projects are projects proposed for funding through the Community's allocation of CDBG-DR funding. Featured Projects are projects and actions that the Planning Committee has identified as important resiliency recommendations and has analyzed in depth, but has not proposed for funding through the NYRCR Program. Additional Resiliency Recommendations (see Section V) are projects and actions that the Planning Committee would like to highlight and that are not categorized as Proposed Projects or Featured Projects. The total cost of Proposed Projects in the



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NYRCR Plan exceeds the NYRCR Community's CDBG-DR allocation to allow for flexibility if some Proposed Projects cannot be implemented due to environmental review, HUD eligibility, technical feasibility, or other factors. Implementation of the projects and actions found in the NYRCR Plan are subject to applicable Federal, State, and local laws and regulations, including the Americans with Disabilities Act (ADA). Inclusion of a project or action in the NYRCR Plan does not guarantee that a particular project or action will be eligible for CDBG-DR funding or that it will be implemented.

The following are the Project Profiles for the Proposed Projects for the Village of Amityville/Copiague.^{xliv}



Proposed Project: Storm Sewer and Roadway Drainage Improvements

Project Description

This project will make repairs to, and increase the capacity of, the storm sewer system in the Village of Amityville and the hamlet of Copiague, primarily in locations south of Montauk Highway that experience severe recurring flooding during major storm events. The roadway network below Montauk Highway is comprised of two-way roadways providing one travel lane in each direction. The street width ranges from 24-feet to 30-feet and street elevations ranging from one-foot near the bay to 14-feet adjacent to Montauk Highway. The Community is proposing this project to address severe negative impacts on safety, property, and quality of life that are occurring as a result of damage to the system from Superstorm Sandy.



Storm Sewer and Roadway Drainage Improvements are a Proposed Project.

During Superstorm Sandy water elevations in Great South Bay rose four- to five-feet above normal high tide. As a result storm surge waters backed up through the storm sewer system and flooded streets as well as adjacent businesses and residences in the neighborhoods south of Montauk Highway. Due to the inundation from Superstorm Sandy, many sections of the storm sewer system have, and continue to, fail - collapsed pipes and inlets are creating sinkholes and outfall pipes are filled with debris. This project will rehabilitate and expand the capacity of the storm drainage system using measures such as repairing/replacing outfall pipes, replacing and/or adding additional catch basins, and installing backflow preventers/flapper valves. The backflow protector technology to be utilized has yet to be determined. In certain locations in the extreme and high risk areas that are at a low elevation, it may be necessary to do limited elevation of the roads to accommodate the necessary drainage improvements. Approximately 150 locations/components have already been identified for immediate attention; additional priorities will be established based on the locations most in need of improvement and the availability of funding. Existing conditions in the storm sewer system are unknown; needed repairs may be discovered during construction that will need to be addressed. This Project is still conceptual; it will require engineering, cost analysis, design, survey, environmental analysis, and permitting to determine

STORM SEWER AND ROADWAY DRAINAGE IMPROVEMENTS

Recovery Support Function:
Infrastructure

Cost: \$10,000,000

Assets made more Resilient:
Residences, businesses, and community facilities in the severe and high risk areas of the Village of Amityville and hamlet of Copiague

Storm sewer drainage system

Risk Reduction & Benefits:
Decreased vulnerability to flooding

Increased resiliency of the storm sewer drainage system

Economic benefit - maintaining home values and reduced property damage

Social and health benefits - maintaining access to medical facilities during emergency events and for emergency



detailed project definition, costs, impacts, and feasibility.

Estimated Project Costs

The total estimated cost for this project is \$10,000,000. Of this total cost, \$2,000,000 is budgeted for soft costs including engineering study design, permitting, and construction inspection. The engineering design study will include an inventory of the storm sewer drainage system south of Montauk Highway. This study will determine the condition of the system as a whole, identify additional locations in need of improvements, and determine physical improvements that need to be made on a system wide basis. The remainder of the funding, \$8,000,000 is budgeted to construct the drainage improvement projects identified in the engineering study. Such improvements may include catch basin and gate valve installation, drainage pipe replacement, and roadway drainage improvements via road raising. This includes approximately 150 storm sewer locations/components identified for immediate attention including catch basin and gate valve installation, drainage pipe replacement, and roadway drainage improvements via road raising. The total estimated cost for this project includes budget for contingencies. The maintenance cost is assumed to be \$4,000 annually. The useful life for the newly installed catch basins, valve and pipes is anticipated to be approximately 30 years on average for the project.

Project Benefits

Risk Reduction Benefits

Improving the storm sewers will and increase the resiliency of neighborhoods south of Montauk Highway. The project reduces the risk to assets in these areas by reducing flooding and flood-related impacts. This project will provide future benefits to all residents and business owners in the project area who experienced flooding through the storm sewers during Superstorm Sandy and first responders who have difficulties traversing flooded streets as a result of deficient storm sewers. The storm sewers themselves will be more resilient with the installation of backflow valves because there will be less damage from debris entering during high water.

Economic Benefits



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Design and construction of the Storm Sewer and Roadway Drainage Improvements Project will add temporary jobs for up to two years. An estimated 125 annual full time equivalent (FTE) jobs will be created during that period.^{xlv} Permanent sewer maintenance jobs which existed prior to and after Superstorm Sandy will be retained with these improvements. The Storm Sewer and Roadway Drainage Improvements Project will address the Long Island Regional Economic Development Council (REDC) goal: “Investments in Rebuilding LI ‘Smartly’” from *The Strategic Economic Development Plan for Nassau and Suffolk Counties (2013 Update)* which includes a strategy related to this project: “Rebuild and expand infrastructure to improve job access, revitalize downtowns and transit hubs, speed trade, and attract and retain dynamic regional businesses and highly skilled workers.”^{xlvi}

The Storm Sewer and Roadway Drainage Improvements Project will enhance the local economy by preserving real estate values. Real estate values in the areas which experience flooding through the storm sewers have decreased, translating into decreased property taxes for the Village and the Town. Rehabilitating the storm sewers will address these negative impacts on property values by making these neighborhoods more resilient to future storms. This will have a positive impact on home values and municipal budgets. The Storm Sewer and Roadway Drainage Improvements Project will reduce future storm-related emergency and recovery costs by reducing the frequency and location of flooding. These improvements will reduce the costs of personal property damage for homeowners from flooding events.

Health and Social Benefits

The Storm Sewer and Roadway Drainage Improvements Project will decrease the severity of, or eliminate, roadway flooding; therefore, maintaining transportation access to health and medical facilities for affected residents. The elimination of ponding, which can breed mosquitoes, is a positive health benefit from reducing flooding. Decreasing and/or eliminating flooding will improve the overall quality of life in the community which will be a positive social benefit.

Cost-Benefit Analysis

Proposed Storm Sewer Improvement Project for NYRCR Village of Amityville/Copiague has been analyzed in terms of its costs and benefits. At a cost of \$10,000,000 the project will have numerous benefits including decreased risk/vulnerability to flooding through the storm sewer system; economic benefits in the maintenance of home values and reduced property damage; and social and health



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benefits from maintaining clear access to medical facilities during emergency events and for emergency responders. This analysis demonstrates that the benefits outweigh the costs making the project justifiable and appropriate.

Risk Reduction Analysis

The Risk Reduction Process was used to evaluate the level of risk reduction that could be achieved through the implementation of the Storm Sewer and Roadway Drainage Improvements project. This project will achieve a direct risk reduction for several thousand households in the neighborhoods located in the extreme and high risk areas south of Montauk highway in the Village of Amityville and hamlet of Copiague. During Superstorm Sandy and other emergency events, these neighborhoods are at an elevated risk because the existing storm sewer system permits storm surge water to inundate streets and flood adjacent residences, businesses and community facilities. Improving the storm sewers will increase the resiliency of these neighborhoods. The project reduces the risk score for assets in these areas by reducing flooding and flood-related impacts. Using the Risk Assessment Tool and the Risk Reduction Analysis it was determined that assets that initially had a severe risk score, 2,144 single-family residential assets, 120 two-three-family assets, 14 commercial assets, 2 industrial assets and 2 recreational assets, will decrease their risk to a high risk score with the project in place. The assets that initially had an extreme risk score, 1,092 single-family assets, 40 two-three-family assets, 8 commercial assets, 4 industrial assets and 1 recreational asset, will decrease in risk to a moderate risk score with this project in place.

General Timeframe for Implementation

It is estimated that, from the time implementation begins, this Project has potential for immediate implementation (0 to 12 months). An engineering evaluation will first be required to identify locations in need of improvement and to develop plans for improvement (2 months). Engineering plans are then submitted to regulatory agencies for review and permit approval (2 months). Upon receiving regulatory and permit approvals, bid documents will be prepared and contractor(s) to conduct the work will be selected (2 months). The project will then be constructed per the contractor schedule submitting during the bidding process. Construction is anticipated to take 3-6 months, depending on the project design, time of year, weather, or other variable factors.



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Regulatory Requirements Related to Project

Anticipated regulatory and agency review requirements may include a NYS Department of State (NYS DOS) Coastal Zone Management (CZM) consistency concurrence and consultation with New York State (NYS) Department of Environmental Conservation (DEC) and the U.S. Army Corps of Engineers (US ACE) regarding permitting. Other permitting may be required.

Jurisdiction

This project will fall under the jurisdiction of the Village of Amityville and the Town of Babylon.



Proposed Project: **Waterfront Resiliency Improvements**

Project Description

This project will rehabilitate and/or raise public bulkhead systems in targeted locations throughout the Community. The tidal surge from Superstorm Sandy damaged bulkhead systems allowing unimpeded flooding of adjacent neighborhoods and erosion of land behind the structure. The existing public bulkheads are cracked, not sealed properly to the outfall pipe, and have separation between the bulkhead and the adjacent land. Flooding due to the compromised bulkhead systems continues to be a threat. This project will include engineering design study to conduct an inventory of the Village and Town owned bulkheads to determine their condition, identify locations in need of rehabilitation, and develop necessary designs to address bulkheads in need of repair. Decisions on which bulkheads will receive repairs or replacement will be based on the locations most in need of improvement and the availability of funding.

Estimated Project Costs

The total estimated cost for this project is \$3,000,000. Of this total cost, \$600,000 is budgeted for soft costs including engineering study, design, permitting, and construction inspection. The engineering design study will include field work, a condition assessment of all public bulkheads and identification of the necessary bulkhead improvements. The remainder of the funding, \$2,400,000 is budgeted for reconstruction and repair of approximately 1,800 linear feet of public bulkheads. The total estimated cost for this project includes budget for contingencies. The maintenance cost is assumed to be \$3,000 annually. The useful life for the rehabilitated/replaced public bulkheads is anticipated to be approximately 50 years.



Waterfront Resiliency Improvements are a Proposed Project.

WATERFRONT RESILIENCY IMPROVEMENTS

Recovery Support Function:
Infrastructure

Cost: \$3,000,000

Assets made more Resilient:
Residences, businesses, and community facilities in targeted areas of the severe risk areas of the Village of Amityville and hamlet of Copiague

Public bulkhead systems

Risk Reduction & Benefits:
Decreased vulnerability to flooding

Decreased exposure to storm surge

Increased resiliency of the public shoreline protection system

Economic benefits - maintaining home values and reduced property damage

Social and health benefits -maintain clear access to adjacent roadways



Project Benefits

Risk Reduction Benefits

Improving the public bulkhead system will increase the resiliency of neighborhoods and roads south of Montauk Highway that are adjacent to public bulkhead systems. This project reduces the risk for assets in these areas by improving shore defenses thereby reducing exposure to flooding and flood-related impacts. The bulkheads themselves will be made more resilient; therefore, they will be at less risk for damage from future storms.

Economic Benefits

Design and construction of the Waterfront Resiliency Improvements project will add temporary jobs for up to two years. An estimated 37 FTE jobs will be created during that period. Permanent waterfront protection maintenance jobs which existed prior to and after Superstorm Sandy will be retained with these improvements.^{xiv} The Waterfront Resiliency Improvements will address the Long Island REDC goal: *Investments in Rebuilding LI "Smartly" from The Strategic Economic Development Plan for Nassau and Suffolk Counties (2013 Update)* which includes a strategy related to this project: *"Rebuild and expand infrastructure to improve job access, revitalize downtowns and transit hubs, speed trade, and attract and retain dynamic regional businesses and highly skilled workers."*^{xlvii}

The Waterfront Resiliency Improvements project will enhance the local economy by preserving real estate values. Real estate values in the areas which experience flooding as a result of compromised bulkhead systems have decreased, translating into decreased property taxes for the Village and the Town. Rehabilitating the bulkhead systems will address these negative impacts on property values by making these neighborhoods more resilient to future storms which will have a positive impact on home values. The Waterfront Resiliency Improvements will reduce future storm-related emergency and recovery costs by reducing the frequency and location of flooding. These improvements will reduce the costs of personal property damage for homeowners from flooding events.

Health and Social Benefits

The Waterfront Resiliency Improvements Project will decrease the severity of roadway flooding therefore maintaining transportation access to health and medical facilities for affected residents. The



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elimination of ponding, which can breed mosquitoes, is a positive health benefit from reducing flooding. Decreasing and/or eliminating flooding will improve the overall quality of life in the Community which will be a positive social benefit.

Cost-Benefit Analysis

The Proposed Waterfront Resiliency Improvements Project for the Community has been analyzed in terms of its costs and benefits. At a cost of \$3,000,000 the project will have numerous benefits including: reduction in risk/vulnerability to flooding from storm surge, maintenance of home values, reduced property damage, maintenance of roadway access to emergency facilities for residents and to high risk neighborhoods for emergency responders. This analysis demonstrates that the benefits outweigh the costs making the project justifiable and appropriate.

Risk Reduction Analysis

The Risk Reduction Process was used to evaluate the level of risk reduction that could be achieved through the implementation of the Waterfront Resiliency Improvement project. Improving the public bulkhead system will increase the resiliency of neighborhoods south of Montauk Highway that are adjacent to the public bulkhead systems by reducing the risk of flooding and flood-related impacts. The Risk Reduction Analysis determines that the risk to approximately 200 single-family residential assets, 5 two-three-family residential assets, 5 commercial assets and 2 recreational assets adjacent to the public bulkhead system that are located in the Extreme Risk Area will decrease from a severe risk score to a high risk score.

General Timeframe for Implementation

It is estimated that, from the time implementation begins, this Project has potential for immediate implementation (0 to 12 months). An engineering evaluation will first be required to identify locations in need of improvement and to develop plans for improvement (2 months). Engineering plans will then be submitted to regulatory agencies for review and permit approval (2 months). Upon receiving regulatory and permit approvals, bid documents will be prepared and contractor(s) to conduct the work will be selected (2 months). The project will then be constructed per the contractor schedule submitting during



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the bidding process. Construction is anticipated to take 3-6 months, depending on the project design, time of year, weather, or other variable factors.

Regulatory Requirements Related to Project

Anticipated regulatory and agency review requirements may include a NYS DOS CZM consistency and consultation with NYS DEC and the US ACE. This project may require other permits.

Jurisdiction

This project will fall under the jurisdiction of the Village of Amityville and the Town of Babylon.



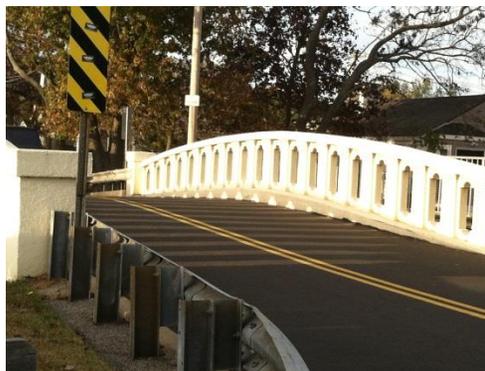
Proposed Project: **American Venice Bridges Improvements**

Project Description

This project will rehabilitate or replace bridges in the American Venice neighborhood of the hamlet of Copiague. The two bridges at East and West Riviera Drive are the only means of vehicular access to the neighborhood and currently have a load rating of 12 tons which does not permit use by certain heavy rescue and emergency vehicles. As a result, first responders could not access the neighborhood during Superstorm Sandy. The lack of emergency access also delayed post-storm assistance to the neighborhood. Replacing or upgrading the bridges to have a 20-ton load rating is needed to rectify this deficiency, which in an emergency situation such as Superstorm Sandy, has severe negative impacts on safety, property, and quality of life. This Project is conceptual - it will require engineering analysis to determine if the bridges can be rehabilitated or will need to be replaced. Both bridges have a roadway dimension of 19.5 feet measured to the inside of the parapet walls and a span dimension over the canals of 38 feet, abutment to abutment. The posted speed limit is 20 mph. A four foot sidewalk is located to the outside of each bridge. Both bridges have short length of beam guide rail with turn down end terminals on all approaches.

Estimated Project Costs

The total estimated cost for this project is \$1,000,000 if it is a rehabilitation project or \$8,000,000 if it is a replacement project. Of this total cost, the amount budgeted for soft costs is \$200,000 if it is a rehabilitation project or \$1,600,000 if it is a replacement project. These soft costs include conducting an engineering study to determine the condition of the bridges and to identify necessary improvements, preparing bridge designs, obtaining permits, conducting environmental analysis, and performing



American Venice Bridges Improvements are a Proposed Project.

AMERICAN VENICE BRIDGES IMPROVEMENTS

Recovery Support Function:
Infrastructure

Cost: \$1,000,000 if a rehabilitation or \$8,000,000 if a replacement; the level of improvement necessary and the cost are to be determined during the engineering study.

Assets made more Resilient:
600 residences in the American Venice area of Copiague

Two bridges located at East Riviera Drive and West Riviera Drive in Copiague

Risk Reduction & Benefits:
Decreased vulnerability by eliminating the lack of access for emergency equipment

Economic benefits by-maintaining home values and reducing recovery costs



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construction inspection. The remainder of the funding, \$800,000 if it is a rehabilitation project or \$6,400,000 if it is a replacement project is budgeted for the construction to rehabilitate or replace the bridges. The total estimated cost for this project includes budget for contingencies. The maintenance cost is assumed to be \$4,000 annually. The useful life for the improved bridges is anticipated to be approximately 50 years or more.

Project Benefits

Risk Reduction & Resiliency Benefits

This project will increase the resiliency of the 600 households in the American Venice neighborhood, which is located in Extreme and High Risk Assessment Areas. Maintaining access into and out of the neighborhood for residents and first responders will preserve access to emergency services.

Economic Benefits

Design and construction of the American Venice Bridges Improvements will add temporary jobs for more than two years. An estimated 98 FTE jobs will be created during that period.^{xlv} The American Venice Bridges Improvements will address the Long Island REDC goal: *Investments in Rebuilding LI “Smartly”* from *The Strategic Economic Development Plan for Nassau and Suffolk Counties (2013 Update)* which includes a strategy related to this project: *“Rebuild and expand infrastructure to improve job access, revitalize downtowns and transit hubs, speed trade, and attract and retain dynamic regional businesses and highly skilled workers.”*^{xlviii}

American Venice Bridge Improvements will enhance the local economy by preserving real estate values in these neighborhoods, as safety and access are important factors in real estate value. The American Venice Bridge Improvements can reduce future storm-related emergency and recovery costs by creating proper emergency access into and out of this neighborhood.

Health and Social Benefits

In emergency situations, lack of access to the American Venice neighborhood for emergency vehicles could have severe health repercussions. There will be overall health and social benefits to the residents of this neighborhood from the American Venice Bridge Improvements Project by ensuring accessibility



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for emergency equipment during storm events as well as quality of life benefits from the improvement to overall safety in this neighborhood.

Cost-Benefit Analysis

The cost for the American Venice Bridges Improvement Project is approximately \$1,000,000 if it is a rehabilitation project or approximately \$8,000,000 if it is a replacement project. The project will have numerous benefits including increased resiliency of the neighborhood, maintenance of home values, reduction of recovery costs, and increased access to critical facilities for the residents of the neighborhood and access to the neighborhood for first responders. This analysis demonstrates that the benefits outweigh the costs making the project justifiable and appropriate.

Risk Reduction Analysis

The Risk Reduction Process was used to evaluate the level of risk reduction that could be achieved through the implementation of the American Venice Bridges Improvements project. Improving access into and out of the American Venice neighborhood will increase the resiliency of the neighborhood by reducing the vulnerability of residents to being stranded and unable to access critical facilities during an emergency, or conversely, of first responders not being able to reach those in need in the neighborhood. The Risk Reduction Analysis determined that the risk for the approximately 500 residential assets in the portion of the American Venice neighborhood located in the Extreme Risk Assessment Area decreased from a severe risk score to a high risk score and that the risk for the approximately 100 residential assets in the portions of the American Venice neighborhood located in the High Risk Assessment Area decreased from a high risk score to a moderate risk score.

General Timeframe for Implementation

It is estimated that, from the time implementation begins, this Project has potential for mid-term implementation (12 to 36 months). An engineering evaluation will first be required to identify the necessary improvement to the bridges and to develop engineering plans for improvement (6 months). An environmental document identifying impacts and mitigation will be required (4 months). Engineering plans and environmental documentation will then be submitted to regulatory agencies for review and



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permit approval (4 months). Upon receiving regulatory and permit approvals, bid documents will be prepared and contractor(s) to conduct the work will be selected (2 months). The project will then be constructed per the contractor schedule submitting during the bidding process; construction is anticipated to take 3-6 months, depending on the project design, time of year, weather, or other variable factors.

Regulatory Requirements Related to Project

Anticipated regulatory and agency review requirements may include a NYS DOS CZM consistency concurrence, coordination with NYS State Historic Preservation Office (SHPO) and consultation with NYS DEC, United States Coast Guard (USCG) and U.S. Army Corps of Engineers (US ACE) regarding permitting.

Jurisdiction

This project will fall under the jurisdiction of the Town of Babylon.



Proposed Project: **Amityville Beach Pavilion Restoration and Resiliency**

Project Description

The Amityville Beach Pavilion sustained six feet of storm surge during Superstorm Sandy which substantially damaged the facility, including structural damage as well as damage to the interior contents and equipment. The Community is proposing this project to address quality of life impacts resulting from the absence of this important community facility. More than a year after Sandy, the facility has not returned to its full function. All residents of Amityville utilize this facility and have been impacted by its absence, particularly children from low income households and other vulnerable populations. The beach and pavilion are open to the public; a fee is charged to non-resident and residents of the Village can attend for free. This project will both restore the functionality of this community asset and improve its resiliency against future storms by rehabilitating and elevating the building; replacing the doors, overheads doors, windows, fans, millwork, counters, plumbing, electrical, and kitchen equipment; improving stormwater drainage on the parking lot, and connecting the building to the sanitary sewer system via the installation of a sanitary sewer pumping station. These improvements will enable the Village of Amityville to once again fully open the facility and provide the community summertime recreational experiences. This Project is still conceptual - it will require an engineering study to determine a detailed project scope, assess impacts and feasibility, develop a design, and complete environmental analysis and permitting requirements.



Amityville Beach Pavilion Restoration and Resiliency is a Proposed Project.

Estimated Project Costs

AMITYVILLE BEACH PAVILION RESTORATION AND RESILIENCY

Recovery Support Function:
Natural and Cultural Resources

Cost: \$1,500,000

Assets made more Resilient:
Amityville Beach Pavilion in the Village of Amityville

Risk Reduction & Benefits:
Decreased vulnerability to flooding

Economic benefit - reducing future storm-related emergency and recovery costs at the facility

Environmental benefits -
elimination of cesspools

Social and health benefits -
restoring a facility that is critical to the entire community, particularly children from low income households



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The total estimated cost for this project is \$1,500,000. Of this total cost, \$300,000 is budgeted for soft costs, such as engineering study, design, permitting, and construction inspection. The remainder of the funding, \$1,200,000 is budgeted to construct the improvements identified in the engineering study. Such improvements may include site construction, safety, and temporary facilities, concrete, masonry, carpentry, doors/windows, finishes, equipment, solid waste/sanitary sewer upgrades, mechanical system upgrades/replacement, electric power and distribution upgrades/replacement, parking and drainage improvements, raising structure and drainage/storm sewer improvements. The total estimated cost for this project includes budget for contingencies. The maintenance cost is assumed to be \$3,000 annually. Though not feasible to quantify, the elimination of the cesspool system and replacement with sanitary sewers will likely decrease the cost of maintenance that is required to ensure normal operation of the current cesspool system. The useful life for the improved Amityville Pavilion is anticipated to be approximately 30 years on average for all features of the project.

Project Benefits

Economic Benefits

Design and construction of the improvements to the Amityville Beach Pavilion and facilities is expected to create an estimated 19 FTE temporary construction jobs, for at least two years. Permanent seasonal jobs at the beach pavilion which existed prior to Superstorm Sandy will be reinstated with the reopening of the facility. ^{xlv} The Amityville Beach Pavilion Restoration and Resiliency Project will help stimulate tourism and its associated jobs. This project supports one of the goals of the Long Island Regional Economic Development Council: “Investments in Our Natural Assets”, which includes a strategy related to this project to “Produce a new generation of sustainable, well-paying jobs in the legacy sectors of agriculture, aquaculture, fisheries and tourism by expanding export opportunities, infrastructure, recreation facilities, research partnerships and workforce training.”^{xlix}

The Amityville Beach Pavilion Restoration and Resiliency Project could indirectly bring revenue to the local economy; recreational spending is more likely to be retained within the Village of Amityville if this facility is restored and made more resilient, attracting new visitors to the beach and the community in general. The resiliency improvements planned for the facility will reduce future storm-related emergency and recovery costs at the facility for the Village of Amityville. The elimination of the cesspool



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system and replacement with sanitary sewers will decrease the cost of maintenance that is required to operate the cesspool system.

Environmental Benefits

The Amityville Beach Pavilion Restoration and Resiliency Project will include the removal of two underground cesspool structures that are currently used for restroom and kitchen waste. This arrangement can be unsanitary and susceptible to overflow during storm events. There will be environmental benefit from the replacement of the cesspool system with a sanitary sewer system.

Parking lot drainage improvements will be included as part of the Amityville Beach Pavilion Restoration and Resiliency Project. The new parking lot drainage system will be more environmentally sensitive and utilize modern storm water management guidelines.

Health and Social Benefits

The Amityville Pavilion and beach facilities provide access to healthy recreational activities for all the residents of the Village of Amityville and surrounding areas. The Pavilion provides Village residents and the general public with several beach-oriented services – including free or low-cost swimming and boating lessons for children, many among vulnerable populations. Community amenities such as the Amityville Beach Pavilion contribute to the quality of life of the Village and surrounding area therefore its restoration and future resiliency will have positive social benefits for this Community.

Cost-Benefit Analysis

The Proposed Amityville Beach Pavilion Restoration and Resiliency Project has been analyzed in terms of its costs and benefits. At a cost of \$1,500,000 the project will have numerous benefits including decreased vulnerability to flooding and flood damage, reduced storm-related emergency and recovery costs at the facility, elimination of cesspools, and the restoration of critical recreational facility important to the entire Community, particularly children from low income households. This analysis demonstrates that the benefits outweigh the costs making the project justifiable and appropriate.

Risk Reduction Analysis



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The Risk Reduction Process was used to evaluate the level of risk reduction that could be achieved through the implementation of the Amityville Beach Pavilion Restoration and Resiliency Project. The pavilion is located in an Extreme Risk Assessment Area. This project will achieve a reduction in risk to the pavilion by reducing vulnerability of the pavilion to flooding and flood related damage reducing the risk score for this asset from severe to moderate.

General Timeframe for Implementation

It is estimated that, from the time implementation begins, this Project has potential for immediate implementation (0 to 12 months). An engineering evaluation will first be required to develop design plans for the improvements (4 months.) Engineering plans will then be submitted to regulatory agencies for review and permit approval (2 months.) Upon receiving regulatory and permit approvals, bid documents will be prepared and contractor(s) to conduct the work will be selected (2 months.) The project will then be constructed per the contractor schedule submitting during the bidding process; construction is anticipated to take 3-6 months, depending on the project design, time of year, weather or other variable factors.

Regulatory Requirements Related to Project

Anticipated regulatory and agency review requirements may include a NYS DOS CZM consistency concurrence and consultation with NYS DEC and the US ACE regarding permits.

Jurisdiction

This project will fall under the jurisdiction of the Village of Amityville.



Proposed Project: Permanent Generator for a Local Emergency Center

Project Description

The Community is proposing this project to acquire a permanent generator necessary to create a local emergency center, a facility which is necessary but was absent in this Community during Superstorm Sandy. This project will install a permanent generator to a local public facility to create a shelter/drop-in center to be used before, during, and after emergency events as a shelter for displaced persons; a drop-in center for those not displaced but lacking power, heat, water, or other services; and as a distribution center for donated items.

The facility will be centrally located in or near the Community and outside of the identified Extreme, High, and Moderate Risk Assessment Areas. This facility will ideally earn a Red Cross designation as a shelter and be equipped with redundant systems to ensure continuity of operations following an emergency or weather event. Existing school facilities outside the flood zone have been discussed for this purpose with a final location to be determined. During Superstorm Sandy, residents in the community were reluctant to evacuate to centers considered to be too far away. The specific requirements for the generator, and therefore the cost will need to be refined once a specific facility is identified. Coordination with Red Cross has been initiated by the Committee and their requirements for designation as an official Red Cross shelter have been taken into consideration as part of the location search.

Estimated Project Costs

The total estimated cost for this project is \$350,000. Of this total cost, \$16,000 is budgeted for delivery, engineering, and start-up and \$26,000 is budgeted for the concrete base pad. The remainder of the funding, \$308,000 is budgeted for an industrial generator, parts, supplies, and electrical upgrades. The operating and maintenance cost includes routine maintenance and inspection on the generator of \$3,900 per year on average. An additional cost for fuel to power the generator will vary depending on



A Permanent Generator for a Local Emergency Center is a Proposed Project.

PERMANENT GENERATOR FOR A LOCAL EMERGENCY CENTER

Recovery Support Function:

Community Planning and Capacity Building

Cost: \$350,000

Assets made more Resilient:

Local Emergency Shelter

Risk Reduction & Benefits:

Decreased vulnerability of the shelter to power outages

Health and social benefits – provides an option for those that may be reluctant or those that do not have the means to evacuate to facilities further away



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the frequency and duration of emergency events and should be budgeted and adjusted annually depending on usage patterns and current fuel costs. The useful life for the permanent generator is assumed to be approximately 20 years.

Project Benefits

Risk Reduction & Resiliency Benefits

The facility where the generator is installed will be more resilient to power outages during a storm event. The entire community would become more resilient due to the ability to recover faster from emergency events. Residents who do not wish to leave the community during times of emergency will have a local shelter to utilize and increased cooperation by residents to evacuation orders will decrease the risk to emergency responders that rescue stranded citizens.

Economic Benefits

The installation of a permanent generator at a local emergency evacuation center will secure some temporary work for existing local tradespersons. The Local Emergency Evacuation Center will address the Long Island REDC goal, *Investments in Rebuilding LI "Smartly"* from *The Strategic Economic Development Plan for Nassau and Suffolk Counties (2013 Update)* which include a strategy related to this Project: *"Rebuild and expand infrastructure to improve job access, revitalize downtowns and transit hubs, speed trade, and attract and retain dynamic regional businesses and highly skilled workers."*

Health and Social Benefits

The Local Emergency Evacuation Center will improve public safety during emergency events by providing a nearby location with electricity and shelter, particularly for vulnerable populations that may be reluctant or unable to evacuate to facilities that are further away. Providing evacuation options will improve the overall quality of life in the community which will be a positive social benefit.

Cost-Benefit Analysis

The Permanent Generator for a Local Emergency Evacuation Center Project has been analyzed in terms of costs and benefits. At a cost of \$350,000 the project will have numerous benefits including increased resilience of the community, decreased risk of injury to citizens and first responders, and ability to



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evacuate vulnerable populations that may be reluctant to go to facilities further away. This analysis demonstrates that the benefits outweigh the costs making the project justifiable and appropriate.

Risk Reduction Analysis

This project was not advanced through the Risk Assessment Process because its effect on risk is more theoretical and difficult to quantitatively assess. However, in general, the entire community will be more resilient because a local public facility will be designated a Red Cross shelter thereby encouraging more people to evacuate their homes during emergency events and decreasing the risk of injury to citizens and first responders alike.

General Timeframe for Implementation

It is estimated that, from the time implementation begins, this Project has potential for immediate implementation (0 to 12 months). The Community will first have to identify and reach agreement for the use of a facility for the local emergency center (2 months). Then bid proposals and plans from contractors for the generator purchase and installation can be pursued (2 months). A site plan will be prepared for submission to agencies and the municipality (2 months). Plans will then be submitted to regulatory and municipal agencies for review and permit approval (2 months). Upon receiving regulatory and permit approvals, bid documents will be prepared and contractor(s) to conduct the work will be selected (2 months). The generator will then be installed per the contractor schedule submitting during the bidding process; installation is anticipated to take 2 months, depending on the project design, time of year, weather, or other variable factors.

Regulatory Requirements Related to Project

There are no anticipated regulatory and agency review requirements for this project.

Jurisdiction

This project will fall under the jurisdiction of the Village of Amityville and the Town of Babylon.



Proposed Project: Resiliency Equipment

Project Description

This project is being proposed by the Community to procure equipment necessary to address the lack of proper emergency response equipment required during storms and other critical situations. During Superstorm Sandy, emergency responders did not have the rescue and recovery equipment necessary for required functions such as evacuations. Post-Superstorm Sandy, recovery equipment was not available to address many urgent community needs including storm-related debris clean-up in the streets and storm sewer drainage system. This project will ensure that the necessary response and recovery equipment is available for future storm events. Examples of equipment needed includes, but is not limited to: water rescue boats, water rescue unit dry suits, mobile command trailer, ambulance, electronic road signs for emergency information, communications equipment, bucket trucks, storm drain vacuum truck, generators, and high water rescue trucks.



Resiliency Equipment is a Proposed Project.

Estimated Project Costs

The estimated cost for the Resiliency Equipment project is approximately \$3,000,000.

Project Benefits

Risk Reduction Benefits

All citizens of the Village of Amityville and hamlet of Copiague will be at reduced risk from injury due to the availability of vital emergency response and rescue equipment. There will be decreased vulnerability to prolonged recovery from emergency events because the proper equipment will be available for recovery.

RESILIENCY EQUIPMENT

Recovery Support Function:

Community Planning and Capacity Building

Cost: \$3,000,000

Assets made more Resilient:

Citizens of the Village of Amityville and hamlet of Copiague

Risk Reduction & Benefits:

Decreased vulnerability to prolonged recovery from emergency events

Health and social benefits to all members of the community during emergencies including vulnerable populations



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Economic Benefits

The Resiliency Equipment Project will reduce future storm-related emergency and recovery costs for the Village of Amityville, Town of Babylon, and residents because the proper equipment will be available to more quickly and efficiently respond to and recover from emergency events. Residents will benefit economically by avoiding lost time at work and lost wages because the response and recovery will be more expeditious.

Health and Social Benefits

The Resiliency Equipment Project will benefit all members of the community during emergencies, including vulnerable populations. Community safety and preparedness are contributing factors to the overall quality of life in this community; therefore there will be positive social benefits to procuring the necessary equipment for community resiliency.

Cost-Benefit Analysis

The Proposed Resiliency Equipment Project for the Community has been analyzed in terms of its costs and benefits. At a cost of \$3,000,000 the project will have numerous benefits including decreased vulnerability to prolonged recovery, and health and social benefits to all members of the community. This analysis demonstrates that the benefits outweigh the costs making the project justifiable and appropriate.

Risk Reduction Analysis

This project was not advanced through the Risk Assessment Process because its effect on risk is more theoretical and difficult to quantitatively assess. However, in general, the entire community will be more resilient because residents, business owners, and the first responders in the area who experience flooding or other emergencies will benefit from increased preparedness, decreased response times, and decreased recovery times.

General Timeframe for Implementation



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It is estimated that, from the time implementation begins, this Project has potential for immediate implementation (0 to 12 months). Bids will be solicited for the equipment (2 months). Vendors will be selected and the equipment will be procured, which is anticipated to take 3-6 months, depending on equipment availability or other variable factors.

Regulatory Requirements Related to Project

There are no anticipated regulatory and agency review requirements for this project.

Jurisdiction

This project will fall under the jurisdiction of the Village of Amityville and the Town of Babylon.



Section V: Additional Materials

A. Additional Resiliency Recommendations

Presented in the following table are additional resiliency recommendation identified during the planning process in addition to those recommended as Proposed and Featured Projects.

Table 17: Additional Resiliency Recommendations

Strategy	Project Name	Short Description	Estimated Cost	Regional (Y/N)
Establish municipal codes that will make the community more resilient in the future.	Resiliency Review and Update	This project will study, revise and/or update existing local codes, ordinances, comprehensive plans regulations and permitting processes to incorporate storm resiliency protections.	\$100,000	N
Address home heating fuel oil tank and hazardous materials leakage problems.	Fuel and Hazardous Material Safe Storage Program	This project will develop and implement a program targeting the safe storage of fuel and hazardous materials by updating construction codes and providing funding for home owners to make improvements to existing fuel storage tanks.	\$5,000,000	Y
Improve public communications prior to, during, and after storm events.	Emergency Event and Storm Preparedness Communication Program	The first element of this project will address the needs of emergency responders and municipal entities during storm events for more uniform communication devices and protocols. The second element of this project will improve public communications prior to, during, and after storm events including regular emergency preparedness reminders and more accurate flood alerts and warnings.	\$200,000	N



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Table 17: Additional Resiliency Recommendations (cont'd)

Strategy	Project Name	Short Description	Estimated Cost	Regional (Y/N)
Spread awareness of resilient construction techniques.	Education Program on Resilient Construction Methods	This project will develop and implement an education program for homeowners, developers, construction professionals, and construction officials on resilient construction methods and techniques.	\$100,000	Y
Improve resiliency of waterfront parks.	Equip Waterfront Park for Use as Post-Event Staging Facility	This project will develop a plan and secure any equipment or materials necessary to use a waterfront park as a post-event staging facility.	\$500,000	N
Establish local emergency evacuation routes and facilities	Evacuation Route Marker and Flood Height Marker System	This project will plan for the designation, design and implementation of a system of evacuation route markers and flood height markers to aid in emergency evacuation and flooding/emergency awareness.	\$500,000	Y
Establish areas for temporary storage.	Vehicle Refuge and Public Parking Areas	Establish an area, outside the extreme and high-risk zones, that could serve as temporary storage for vehicles that are normally kept at resident's homes and businesses south of Montauk Highway.	\$500,000	N
	Boat Storage Area	Establish an area, outside the extreme and high-risk zones, that could serve as temporary storage for boats and watercraft that are normally kept at the marinas and in the canals and creeks along the Great South Bay.	\$500,000	N
Improve emergency information, policies, procedures and tools used by local government	Village of Amityville Fire Department Main Headquarters Extension	Extension to the FD building for enlarged kitchen, overnight sleeping quarters, truck room, showers, generator system upgrade, laundry room	\$5,000,000	N



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Table 17: Additional Resiliency Recommendations (cont'd)

Strategy	Project Name	Short Description	Estimated Cost	Regional (Y/N)
departments (police, fire, highway, etc.)	Village of Amityville Mill Street Fire House Expansion	Expansion and renovation of the Mill Street Fire House building to house all the water rescue equipment and for storage of emergency supplies	\$150,000	N
	Copiague Fire Department Storage Facility/ Temporary Housing Unit	Purchase a building to use as a storage facility and/or temporary housing unit.	\$500,000	N
	Emergency Supplies	Supplies necessary for the resiliency of the community that may not be fulfilled through the Proposed Projects.	\$50,000	N
	Additional Resiliency Equipment and Supplies	Equipment necessary for the resiliency of the community that may not be fulfilled through the Proposed Projects.	\$2,000,000	N
Support the needs of businesses and allow for better redevelopment via Smart Growth Centers without compromising residential character.	Montauk Highway, Broadway and Great Neck Road Commercial Corridors Revitalization	This project will plan for and implement revitalization techniques along Montauk Highway, Broadway in the Village of Amityville and Great Neck Road in Copiague to support community resiliency through local economic development and consider Smart Growth Centers with site-sensitivity to the surrounding areas such as in the downtown and train station areas.	\$300,000	N



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Table 17: Additional Resiliency Recommendations (cont'd)

Strategy	Project Name	Short Description	Estimated Cost	Regional (Y/N)
Plan for the unique requirements of special needs populations such as the elderly, children and disabled.	Vulnerable Populations Resiliency Plan Development and Implementation	A plan will be developed and implemented to address the emergency, evacuation, and long-term resiliency needs in the Village of Amityville and Copiague for our vulnerable populations assessing the needs of people with disabilities, low and very-low income populations, elderly, young children, homeless, and people at risk of becoming homeless.	\$100,000	N
Spreads awareness to home and business owners about resiliency.	Home Owner/ Business Owner Resiliency Education Program	A home and business owners education program will be developed and implemented to spread resiliency awareness, assisting individual property owners and small businesses in navigating the complexities of insurance requirements, public programs, permitting, and issues related to raising homes.	\$100,000	Y
Mitigate repetitive flooding	Montauk Highway Roadway Improvements	This project will plan for, design, and implement improvements to address flooding and drainage along Montauk Highway.	\$500,000	N
Reduce power outages.	Utility Improvements South of Montauk Highway	This project will develop plans and designs and implement improvements to utilities south of Montauk Highway such as underground utilities or new above-ground technologies.	\$5,000,000	Y
Preserve natural resources associated with the Great South Bay.	Sediment and Debris Removal Program	This project will remove sediment and debris along creeks, canals, and lakes in the Village of Amityville and Copiague.	\$1,000,000	Y
	Tree Replacement Program	The tree replacement program will provide funding for the purchase of trees and other landscaping materials to replace community vegetation lost during Superstorm Sandy.	\$200,000	N



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Table 17: Additional Resiliency Recommendations (cont'd)

Strategy	Project Name	Short Description	Estimated Cost	Regional (Y/N)
Mitigate repetitive flooding.	Natural Recharge and Runoff Reduction Project	This project will provide improvements to the creeks in the Village of Amityville and Copiague using green infrastructure for the attenuation of storm water to improve local flood control and water quality.	\$1,000,000	N
Preserve and enhance historic resources including downtowns, train station areas and housing.	American Venice Historic Area Restoration	This project will create a historic park that will be a gateway both to the American Venice community and to the revitalized Montauk Highway Corridor in Copiague.	\$2,000,000	N
	Village of Amityville Maritime Museum	This project will create a maritime museum celebrating the Village of Amityville's rich maritime history	\$2,000,000	N



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B. Master Table of Projects

Presented in the following table are all projects identified by the NY Rising Community Reconstruction (NYRCR) Village of Amityville/Copiague Planning Committee (Committee). This table includes Proposed Projects, Featured Projects, and Additional Resiliency Recommendations.

Table 18: Master Project Table					
Strategy	Project Name	Short Description	Project Category	Estimated Cost	Regional (Y/N)
Establish local emergency evacuation routes and facilities.	Local Emergency Evacuation Center Permanent Generator	This project will install a permanent generator to be used to create a shelter /drop-in center during emergency events at a local public facility.	Proposed Project	\$350,000	N
Improve emergency information, policies, procedures and tools used by local government departments (police, fire, highway, etc.)	Resiliency Equipment	This project involves the procurement of equipment to address emergency preparedness during storms and other critical situations.	Proposed Project	\$3,000,000	N



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Table 18: Master Project Table (cont'd.)

Strategy	Project Name	Short Description	Project Category	Estimated Cost	Regional (Y/N)
Mitigate repetitive flooding.	Storm Sewer and Roadway Drainage Improvements	This project will investigate opportunities for expanding the capacity of the storm drainage system using potential measures such as improving outfalls and/or installing backflow preventers/flapper valves. In certain targeted locations it may be necessary to do limited elevation of the roads to accommodate the necessary drainage improvements.	Proposed Project	\$10,000,000	N
	Waterfront Resiliency Improvements	This project will rehabilitate and/or raise public built protective systems, such as bulkheads, in targeted locations.	Proposed Project	\$3,000,000	N
Ensure access to critical facilities and evacuation routes.	American Venice Bridges Improvements	This project will rehabilitate or replace bridges in the American Venice area of Copiague at East Riviera Drive and West Riviera Drive which have weight restrictions which do not permit use by certain rescue and emergency trucks and disaster recovery vehicles.	Proposed Project	\$1,000,000-\$8,000,000	N
Improve resiliency of waterfront parks.	Amityville Beach Pavilion Restoration & Resiliency	This project will improve the resiliency of the beach pavilion at Amityville Beach by elevating the structure and systems, improving facility, raising parking lot, improving the drainage, adding a pumping station and connecting to the sanitary sewer system.	Proposed Project	\$1,500,000	N



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Table 18: Master Project Table (cont'd.)

Strategy	Project Name	Short Description	Project Category	Estimated Cost	Regional (Y/N)
Establish municipal codes that will make the community more resilient in the future.	Resiliency Review and Update of Local Codes, Ordinances, Regulations and Permits	This project will study, revised and/or update existing local codes, ordinances, regulations and permitting processes to incorporate storm resiliency protections.	Additional Resiliency Recommendation	\$100,000	N
Address home heating fuel oil tank and hazardous materials leakage problems.	Fuel and Hazardous Material Safe Storage Program	This project will develop and implement a program targeting the safe storage of fuel and hazardous materials by updating construction codes and providing funding for home owners to make improvements to existing fuel storage tanks.	Additional Resiliency Recommendation	\$5,000,000	Y
Improve public communications prior to, during and after storm events.	Emergency Event and Storm Preparedness Communication Program	The first element of this project will address the needs of emergency responders and municipal entities during storm events for more uniform communication devices and protocols. The second element of this project will improve public communications prior to, during and after storm events.	Additional Resiliency Recommendation	\$200,000	N
Spread awareness of resilient construction techniques.	Education Program on Resilient Construction Methods	This project will develop and implement an education program for homeowners, developers, construction professionals and construction officials on resilient construction methods and techniques.	Additional Resiliency Recommendation	\$100,000	Y



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Table 18: Master Project Table (cont'd.)

Strategy	Project Name	Short Description	Project Category	Estimated Cost	Regional (Y/N)
Improve resiliency of waterfront parks.	Equip Waterfront Park for Use as Post-Event Staging Facility	This project will develop a plan and secure any equipment or materials necessary to use a waterfront park for use as a post-event staging facility.	Additional Resiliency Recommendation	\$500,000	N
Establish local emergency evacuation routes and facilities.	Evacuation Route Marker and Flood Height Marker System	This project will plan for the designation, design and implementation of a system of evacuation route markers and flood height markers to aid in emergency evacuation and flooding/emergency awareness.	Additional Resiliency Recommendation	\$500,000	Y
Establish areas for temporary storage.	Vehicle Refuge and Public Parking Areas	Establish an area, outside the extreme and high-risk zones, that could serve as temporary storage for vehicles that are normally kept at resident's homes and businesses south of Montauk Highway.	Additional Resiliency Recommendation	\$500,000	N
	Boat Storage Area	Establish an area, outside the extreme and high-risk zones, that could serve as temporary storage for boats and watercraft that are normally kept at the marinas and in the canals and creeks along the Great South Bay.	Additional Resiliency Recommendation	\$500,000	N
Plan for more resilient residential structures with short, medium, and long-term	Village of Amityville Fire Department Main Headquarters Extension	Extension to the building for the following an enlarged kitchen, overnight sleeping quarters, truck room, showers, generator system upgrade, laundry room	Additional Resiliency Recommendation	\$5,000,000	N



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Table 18: Master Project Table (cont'd.)

Strategy	Project Name	Short Description	Project Category	Estimated Cost	Regional (Y/N)
mitigation strategies.	Village of Amityville Mill Street Fire House Expansion	Expansion and renovation of the Mill Street Fire House building to house all the water rescue equipment and for storage of emergency supplies	Additional Resiliency Recommendation	\$150,000	N
	Copiague Fire Department Storage Facility/ Temporary Housing Unit	Purchase a building to use as a storage facility and/or temporary housing unit.	Additional Resiliency Recommendation	\$500,000	N
	Emergency Supplies	. Supplies necessary for the resiliency of the community that may not be fulfilled through the Proposed Projects.	Additional Resiliency Recommendation	\$50,000	N
	Additional Resiliency Equipment and Supplies	Equipment necessary for the resiliency of the community that may not be fulfilled through the Proposed Projects.	Additional Resiliency Recommendation	\$2,000,000	N
Support the needs of businesses and allow for better redevelopment via Smart Growth Centers without compromising residential character.	Montauk Highway, Broadway and Great Neck Road Commercial Corridors Revitalization	This project will plan for and implement revitalization techniques along Montauk Highway, Broadway in the Village of Amityville and Great Neck Road in Copiague to support community resiliency through local economic development and consider Smart Growth Centers with site-sensitivity to the surrounding areas such as in the downtown and train station areas.	Additional Resiliency Recommendation	\$300,000	N



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Table 18: Master Project Table (cont'd.)

Strategy	Project Name	Short Description	Project Category	Estimated Cost	Regional (Y/N)
Plan for the unique requirements of special needs populations such as the elderly, children and disabled.	Vulnerable Populations Resiliency Plan Development and Implementation	A plan will be developed and implemented to address the emergency, evacuation and long-term resiliency needs in the Village of Amityville and Copiague for our vulnerable populations assessing the needs of people with disabilities, low and very-low income populations, elderly, young children, homeless and people at risk of becoming homeless.	Additional Resiliency Recommendation	\$100,000	N
Spreads awareness to home and business owners about resiliency.	Home Owner/ Business Owner Resiliency Education Program	A home- and business-owners education program will be developed and implemented to spread resiliency awareness, assisting individual property owners and small businesses in navigating the complexities of insurance requirements, public programs, permitting and issues related to raising homes.	Additional Resiliency Recommendation	\$100,000	Y
Mitigate repetitive flooding	Montauk Highway Roadway Improvements	This project will plan for, design and implement improvements to address flooding and drainage along Montauk Highway.	Additional Resiliency Recommendation	\$500,000	N
Reduce power outages.	Utility Improvements South of Montauk Highway	This project will develop plans, design and implement improvements to utilities south of Montauk Highway such as underground utilities or new above-ground technologies.	Additional Resiliency Recommendation	\$5,000,000	Y



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Table 18: Master Project Table (cont'd.)

Strategy	Project Name	Short Description	Project Category	Estimated Cost	Regional (Y/N)
Preserve natural resources associated with the Great South Bay.	Sediment and Debris Removal Program	This project will remove sediment and debris along creeks, canals and lakes in the Village of Amityville and Copiague.	Additional Resiliency Recommendation	\$1,000,000	Y
	Tree Replacement Program	The tree replacement program will provide funding for the purchase of trees and other landscaping materials to replace community vegetation lost during Superstorm Sandy.	Additional Resiliency Recommendation	\$200,000	N
Mitigate repetitive flooding.	Natural Recharge and Runoff Reduction Project	This project will provide improvements to the creeks in the Village of Amityville and Copiague using green infrastructure for the attenuation of storm water to improve local flood control and water quality.	Additional Resiliency Recommendation	\$1,000,000	N
Preserve and enhance historic resources including downtowns, train station areas and housing.	American Venice Historic Area Restoration	This project will create a historic park that will be a gateway both to the American Venice community and to the revitalized Montauk Highway Corridor in Copiague.	Additional Resiliency Recommendation	\$2,000,000	N
	Village of Amityville Maritime Museum	This project will create a maritime museum celebrating the Village of Amityville's rich maritime history.	Additional Resiliency Recommendation	\$2,000,000	N



C. Public Engagement Process

Governor Cuomo has been a strong proponent of bottom-up, community-driven planning; in other words, the real “experts” are the residents of the communities that have been confronted first-hand by natural disasters. A critical component of the NY Rising Community Reconstruction (NYRCR) Program is the exchange of information between the Consultant Team, the Committee, and the public to identify appropriate projects, strategies, and solutions that are likely to carry community support. The public in this case is defined as area residents, employees, civic groups, neighborhood and homeowner associations, environmental and other interest groups, business interests, governmental agencies; educational, medical, religious, and other institutions; the media, elected/ appointed officials, and other stakeholders who expressed interest in the process.

The Public Engagement Strategy:

- Established the means to engage and facilitate information-sharing with the public throughout the development of the NYRCR Plan;
- Educated the public and elicited public comments and suggestions regarding all aspects of the Plan within the NYRCR Village of Amityville/Copiague;
- Employed outreach techniques that allowed for collection and coordination of public communication and comments; and
- Encouraged outreach to groups that might normally be underrepresented in a planning study, such as minorities, Spanish-speaking residents, low-income residents, seniors, youth, and the disabled.

The Committee and Consultant Team utilized a number of dissemination techniques to achieve a thorough, responsive, open, and transparent communication process. An important component of the outreach program is to understand public sentiment and to be able to answer questions and address public concerns. Several methods were provided for the public to make comments and ask questions. The Committee and Consultant Team used these comments to enhance and improve the NYRCR Plan.



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NYRCR Planning Committee Members/Meetings

NYRCR Planning Committee Meetings were held on a regular basis at which time Committee Members discussed agenda items and reached consensus on topics such as the community vision statement, critical assets and risks, community needs and opportunities, public event planning and feedback, NYRCR Conceptual Plan development, strategies, projects, and costs. As of March 10, 2014, there have been 11 Planning Committee Meetings, with the first being on September 6, 2013.

All Committee meetings were open to the public, with meeting dates and times posted on the NYRCR website (www.stormrecovery.ny.gov/nyrcr). Meeting materials were prepared including agendas, sign-in sheets, minutes, comment log, PowerPoint presentations, graphics/boards, and handouts. The public was invited to comment on the work of the Committee by filling out a comment form available at each Committee Meeting. The public could also provide comment via the NYRCR website.

The Committee also formed several subcommittees to explore certain topics in further detail, which included a Public Engagement Subcommittee, a Copiague Subcommittee, and an Emergency Evacuation Center Subcommittee.

Public Engagement

While the Committee represented the interests of many, it was important to provide opportunities for the public to participate in the development of the NYRCR Plan. The Co-Chairs and Committee members attended all Open House meetings to assist and interface with residents. While the primary vehicle for this effort was public engagement events, additional outreach opportunities for comment were provided at different venues in the NYRCR Community and through the NYRCR website.

Public Engagement Events

Each public engagement event included the presentation of work completed to date, as well as opportunities for attendees to provide feedback. The NYRCR Consultant Team provided the following materials for each meeting: public notice (including press releases, announcements, individual mailings, and other appropriate means), outreach to underserved communities and displaced stakeholders, information gathering from those attending, and the collection and inclusion of feedback into the ongoing planning process. A summary of each public engagement event was available both in hard copy and electronically.



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Public engagement events were scheduled to coincide with major project milestones. A targeted and well-executed public involvement process is intended to educate and raise awareness during the development of the Plan, which ensures that when the Plan is put into implementation, the public, elected officials, and key stakeholders have had ample opportunity to actively participate in the decision-making process. Members of the public who are informed and engaged in the process are more likely to support the overall Plan or become interested in a targeted component within the Plan.

Outreach for public engagement events included: posting on the NYRCR website and other electronic media; flyers and posters at strategic locations throughout the community including libraries, community centers, and other centers of activity; e-mails and/or texts to lists available from: chambers, civics, school district, churches, synagogues, American Legion, Veterans of Foreign Wars (VFW), American Association of Retired Persons (AARP), Hibernians, and other community leaders. Committee members personally distributed flyers and notices to merchants and supermarkets for posting.

The desired outcome of each public engagement event was to obtain the public's reactions and feedback to the Committee's work in order to incorporate their input. These comments were compiled by the Consultant Team and provided to the Committee in a clear and comprehensive manner. The Committee reviewed the public's feedback and incorporated it into the NYRCR Amityville/Copiague Plan. Although the public engagement events were advertised as events for the NYRCR planning process, community members attended who were often interested in assistance with individual property concerns. In order to accommodate these individuals at each public engagement event, tables were available in a separate area for New York State, FEMA, and non-governmental organizations (NGO) staff from the various intake centers to provide individual assistance. These community members were subsequently encouraged to participate in the NYRCR planning process.

The following public engagement events were held:

- Public Engagement Event 1, Thursday, September 26, 2013, American Legion Hall 94, 22 Grove Place, Babylon, NY, 6:00 PM to 9:00 PM. At this open house-style event the program background, planning process, community visions, needs and opportunities and community assets were presented. Public Engagement Event 1 was a joint meeting with the Town of



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Babylon Communities of the Village of Amityville/Copiague and the Village of Babylon/West Babylon.

- Public Engagement Event 2, Thursday, November 7, 2013, Tanner Park Senior Center, Tanner Park, Copiague, NY 11726. This event included both an open house for viewing materials and a formal presentation by the Committee Co-Chairs. Information discussed at this meeting included strategies and potential projects. Public Engagement Event 2 was a joint meeting with the Town of Babylon Communities of the Village of Amityville/Copiague, the Village of Babylon/West Babylon, and the Village of Lindenhurst.
- Public Engagement Event 3, Monday, February 24, 2014, Lindenhurst High School Cafeteria, 300 Charles St. Lindenhurst, NY, 5:00 PM to 7:00 PM. At this open house event the Proposed Projects were presented. Public Engagement Event 3 was a joint meeting with the Town of Babylon Communities of the Village of Amityville/Copiague, the Village of Babylon/West Babylon, the Village of Lindenhurst, and West Gilgo to Captree.
- A fourth Public Engagement Event will be held in Spring 2014 to present this NYRCR Plan to the public.

Outreach Activities

In addition to the public engagement events, other outreach activities were conducted. The Suffolk Regional Lead regularly met with elected and public officials - local, County, and Federal (FEMA) - to report on the progress of the Committee and to generate input. In addition, the Committee established an Outreach Subcommittee to identify mechanisms for further outreach. This outreach involved:

Organizational/Stakeholder Engagement: The Committee Members, NYRCR Staff, and Consultant Team attended regularly scheduled organization events as an agenda item to discuss the NYRCR planning process. Organizations events attended included the Amityville Chamber of Commerce, Copiague Chamber of Commerce, Amityville and Copiague Kiwanis Club, Amityville Historical Society, and the Village of Amityville Organization of Organizations. In some instances, civic groups from several communities were addressed together, in order to maximize input and cross-border, inter-municipal collaboration. The team addressed the Chambers of Commerce from Amityville, Copiague, and Massapequa (in Nassau County) in one joint presentation and engagement session; the same approach was taken several Kiwanis Clubs in the region, including Amityville, Copiague, Massapequa, Lindenhurst, Northport and Huntington. An event was held with the Bay Village Civic Association on Monday



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September 16, 2013 at the Park Avenue Memorial Elementary School. A presentation was made providing the Civic Association with an overview of the NYRCR Program. Members were also engaged in an activity using note cards and were asked to write on one side one word about “What’s great about the Village of Amityville/Copiague?” and on the other side of the card “What you missed most after Superstorm Sandy?” The input was used to inform the development of the vision statement and needs.

Expert Sessions: A *Power (Electric/Gas) Resiliency Education Session* was held on Tuesday, December 17, 2013 at the West Islip Community Center on Higbie Lane. Over 30 members from the various Suffolk County NYRCR Planning Committees were in attendance. The education session focused on National Grid/LIPA (now operated by PSEG Long Island as of January 1, 2014) lessons learned post-Superstorm Sandy as well as current and future hardening projects/initiatives that are being undertaken by the utilities within the County. Committee members who attended stated that the session was valuable in understanding how hardening infrastructure or raising a road can impact the utilities. Other Committee members indicated that it was valuable to meet other Suffolk NYRCR Committee Members from adjacent Communities.

A *Flooding & Erosion Protection Education Session* held on January 21, 2014, at the West Islip Fire Department, 309 Union Boulevard in West Islip. Representatives from *Sea Grant* gave an innovative presentation about ongoing and future treatments of the natural shoreline. The presentation also noted that Long Island’s coastline is home to a dynamic variety of habitats that supports a range of plants and animals, some of which are endangered and threatened. The shoreline contains everything from heavily developed urbanized areas on barrier islands to the Otis Pike Fire Island High Dune Wilderness, the State’s only federally-designated wilderness area. Sea Grant stressed the interplay between the natural and built environments that converge at the “living edge”. In addition, the Nature Conservancy provided information about wetlands restoration and the NYS DEC discussed the permitting requirements and thresholds for approval for various types of projects being considered by the Committees.

Online Outreach: A web-based survey was used to gauge public opinion on the Proposed and Featured Projects. An advantage of a survey was its potential to reach individuals that cannot or choose not to attend public engagement events. Surveys were restricted to one survey completion per computer.



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Schools/Youth A web-based survey targeting school-age persons was conducted to receive input on the Proposed Projects from the Next Generation in the community.

Vulnerable Populations/Seniors: The Outreach Subcommittee identified opportunities to reach out to these groups. The Committee has chosen to locate its second Town-wide Public Event at the Tanner Park Senior Center in Copiague in order to make the event more accessible to seniors; the event started earlier than others to overlap with the Senior Center's regular hours of operation and to reach seniors who may already be present at the Center. Due to Copiague's large Hispanic/Latino population (about 33 percent of the population), providing language- and culturally-sensitive outreach to this community was particularly important for this Committee and the NYRCR Consultant Team. Meeting materials were published in English and Spanish, and Spanish-language interpreters were present at events to assist with one-on-one communication with residents for whom English-only discussion would have proven insufficient.

Website: The NYRCR website (www.stormrecovery.ny.gov/nyrcr) served as a repository for downloadable versions of all public information and event notifications. Posted materials included an overview of the planning process, maps, documents, notices and summaries of public engagement events, and contact information. The website includes an area to accept public comment.

Print and Broadcast Media: Study information was also disseminated through selected local, print, radio, and TV media to keep the community informed and to respond to media inquiries.

NYRCR Staff Communication: The primary contact for the Study Team was the NYRCR Suffolk County Regional Lead. The NYRCR Suffolk County Regional Lead was also available to directly answer specific questions and receive comments.

E-Mail: E-mail comments and requests for information could be sent to the State's e-mail address at: info@stormrecovery.ny.gov. This email address was prominently displayed on all materials and the website so that it was widely disseminated and available for public use.



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Comment Forms: Comment forms were available at committee meetings and public engagement events/open houses and on the State's website to provide an opportunity for the public to contribute their thoughts, which were then passed along to the Committee and the Consultant Team.



D. Community Asset Inventory

Presented on the following pages is the inventory of assets as well as the Risk Assessment spreadsheet. The following information is included in the Risk Assessment spreadsheet for each asset: asset name, risk assessment area, asset class, critical facility designation, community value, landscape attributes, and Risk Assessment scores.



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Risk Assessment Tool

Asset Information							Landscape Attributes							Risk Assessment			
Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Erosion Rate ≥ 1 foot per year or unknown	Waterline frequently a shore defense or rippled vegetation	Shore defenses absent, not constructed to anticipated conditions, or deteriorating	Protective vegetation between asset and flood source absent	Dunes absent, below BFE, eroding, little vegetation; Bluff slope unstable, little vegetation	Asset on coastal barrier island or filled wetland	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Amityville Beach and Pavilion	Extreme	Natural and	Natural Prot	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	5	68
Amityville Residential - Extreme Risk Area	Extreme	Housing	Single-Family	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	4	54
Copiague Harbor Beach	Extreme	Natural and	Natural Prot	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	4	54
Copiague Residential - Extreme Risk Area	Extreme	Housing	Single-Family	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	4	54
Montauk Highway Corridor Commercial	Extreme	Economic	Employment	Yes	No	Medium	No	Yes	Yes	No	Yes	Yes	2	3	4.00	4	48
Tanner Park and Facilities	Extreme	Natural and	Parks and Re	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	3	41
Snug Harbor	Extreme	Health and S	Healthcare F	Yes	Yes, FEMA	Low	No	Yes	Yes	No	Yes	Yes	2	3	4.00	3	36
Amity Harbor Civic Association	Extreme	Natural and	Parks and Re	Yes	No	Low	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Amityville Creek	Extreme	Natural and	Water Bodie	Yes	No	Low	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Boat Yard	Extreme	Economic	Marine com	Yes	No	Low	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Grand Canal	Extreme	Natural and	Water Bodie	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Great Neck Creek	Extreme	Natural and	Water Bodie	Yes	No	Low	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Howell Creek	Extreme	Natural and	Water Bodie	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Marina	Extreme	Economic	Marine com	Yes	No	Medium	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Narraskatuck Creek	Extreme	Natural and	Water Bodie	Yes	No	Low	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Santa Barbara Canal	Extreme	Natural and	Water Bodie	Yes	No	High	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Strong Creek	Extreme	Natural and	Water Bodie	Yes	No	Low	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Unqua Corinthian Yacht Club	Extreme	Natural and	Parks and Re	Yes	No	Low	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	2	27
Sanitary Pump Station	High	Infrastructur	Wastewater	Yes	Yes, FEMA	High	No	No	Yes	No	Yes	No	1	3	2.00	4	24
Amityville Residential - High Risk Area	High	Housing	Single-Family	Yes	No	High	No	No	Yes	No	Yes	Yes	1.5	3	2.50	3	23
Copiague Residential - High Risk Area	High	Housing	Single-Family	Yes	No	High	No	No	Yes	No	Yes	Yes	1.5	3	2.50	3	23
County of Suffolk	Extreme	Infrastructur	Public Works	Yes	Yes, FEMA	Low	No	Yes	Yes	No	Yes	No	1.5	3	3.50	2	21
61 South Emerson Ave - IRA	High	Health and S	Support Hou	Yes	No	Low	No	No	Yes	No	Yes	No	1	3	2.00	3	18
Deo, Surujdai	High	Health and S	Support Hou	Yes	No	Low	No	No	Yes	No	Yes	No	1	3	2.00	3	18
James Caples Memorial Park	High	Natural and	Parks and Re	Yes	No	Low	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Montauk Highway Corridor Commercial	High	Economic	Employment	Yes	No	Medium	No	No	Yes	No	Yes	No	1	3	2.00	3	18
Wood Creek	High	Natural and	Water Bodie	Yes	No	Low	No	No	Yes	Yes	Yes	Yes	2	3	3.00	2	18
Indian Island County Park (undeveloped)	Extreme	Natural and	Parks and Re	Yes	No	Low	No	Yes	Yes	Yes	Yes	Yes	2.5	3	4.50	1	14
Freshwater Wetland - Extreme Risk Area	Extreme	Natural and	Wetlands an	Yes	No	Low	No	Yes	Yes	No	Yes	Yes	2	3	4.00	1	12
Long Island Railroad - High Risk Area	High	Infrastructur	Transportati	Yes	No	Low	No	No	Yes	No	Yes	No	1	3	2.00	2	12
Long Island Railroad - Extreme Risk Area	Extreme	Infrastructur	Transportati	Yes	No	Low	No	Yes	Yes	No	Yes	No	1.5	3	3.50	1	11
Montauk Hwy (Copiague)	Extreme	Infrastructur	Transportati	Yes	No	Low	No	Yes	Yes	No	Yes	No	1.5	3	3.50	1	11
Amityville Heart Center (Medical - Private)	Moderate	Health and S	Healthcare F	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	2	9
Amityville Memorial High School	Moderate	Health and S	Schools	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	2	9
Amityville Residential - Moderate Risk Area	Moderate	Housing	Single-Family	Yes	No	High	No	No	Yes	No	Yes	No	1	3	1.50	2	9
Bennett Place Fire Department Facility	Moderate	Health and S	Emergency C	Yes	Yes, FEMA	Medium	No	No	Yes	Yes	Yes	No	1	3	1.50	2	9
Copiague Fire Department Headquarters	Moderate	Health and S	Emergency C	Yes	Yes, FEMA	Medium	No	No	Yes	No	Yes	No	1	3	1.50	2	9
Copiague Residential - Moderate Risk Area	Moderate	Housing	Single-Family	Yes	No	High	No	No	Yes	No	Yes	No	1	3	1.50	2	9
County of Suffolk - 235 Inola Pl	Moderate	Infrastructur	Public Works	Yes	Yes, FEMA	Low	No	No	Yes	Yes	Yes	No	1	3	1.50	2	9
County of Suffolk - Straight	Moderate	Infrastructur	Public Works	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	2	9
Deauville Gardens School	Moderate	Health and S	Schools	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	2	9
Enviro-Test, Inc. (Portable X-ray Fluorography)	Moderate	Health and S	Healthcare F	Yes	Yes, FEMA	Low	No	No	Yes	Yes	Yes	No	1	3	1.50	2	9
Park Avenue Memorial Elementary School	Moderate	Health and S	Schools	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	2	9
Scudder Avenue School	Moderate	Health and S	Schools	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	2	9
South Shore Cardiovascular Medicine	Moderate	Health and S	Healthcare F	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	2	9
Freshwater Wetland - High Risk Area	High	Natural and	Wetlands an	Yes	No	Low	No	No	Yes	No	Yes	Yes	1.5	3	2.50	1	8
Peterkin Park	High	Natural and	Parks and Re	Yes	No	Low	No	No	Yes	No	Yes	No	1	3	2.00	1	6
Suffolk County Water Authority - Lamont	Moderate	Infrastructur	Public Works	Yes	Yes, FEMA	Medium	No	No	Yes	No	Yes	No	1	3	1.50	1	5
Town of Babylon	Moderate	Infrastructur	Public Works	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	1	5



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Risk Assessment Tool																	
Asset Information							Landscape Attributes							Risk Assessment			
Asset	Risk Area	Asset Class	Asset Sub-category	Socially Vulnerable Populations	Critical Facility	Community Value	Erosion Rate ≥ 1 foot per year or unknown	Waterline frequently at shore defense or upland vegetation	Shore defenses absent, not constructed to anticipated conditions, or deteriorating	Protective vegetation between asset and flood source absent	Dunes absent, below BFE, eroding, little vegetation; Steep slope unstable, little vegetation	Asset on coastal barrier island or filled wetland	Landscape Attribute Score ("Yes" = +0.5)	Hazard Score	Exposure Score	Vulnerability Score	Risk Score
Town of Babylon - 108 Copiague Pl	Moderate	Infrastructure	Public Work	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	1	5
Town of Babylon - 163 Copiague Pl	Moderate	Infrastructure	Public Work	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	1	5
Town of Babylon - Beachview St	Moderate	Infrastructure	Public Work	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	1	5
Town of Babylon - Lafayette St	Moderate	Infrastructure	Public Work	Yes	Yes, FEMA	Low	No	No	Yes	No	Yes	No	1	3	1.50	1	5



F. Glossary

Acronyms

AARP - American Association of Retired Persons

ADA - Americans with Disabilities Act

CBA - Cost-benefit analysis

CDBG-DR - Community Development Block Grant – Disaster Recovery

CDP - Census Designated Place

EMS - Emergency Medical Services

FEMA - Federal Emergency Management Agency

FTE - Full-time equivalent

GIS - Geographic Information Systems

HUD - U.S. Department of Housing and Urban Development

LIRR - Long Island Rail Road

NOAA - National Oceanic and Atmospheric Administration

NGO - Non-governmental organization

NYRCR - NY Rising Community Reconstruction

NYS DEC - New York State Department of Environmental Conservation



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NYS DOS - New York State Department of State

NYS DOT - New York State Department of Transportation

NYS OPRHP – New York State Office of Parks, Recreation, and Historic Preservation

OPWDD - Office for People with Developmental Disabilities

VFW - Veterans of Foreign Wars

Terms

Asset - Places or entities where economic, environmental and social functions of the community occur.

Asset Inventory - Completing an inventory of the community’s social, economic, and natural resource assets that have been, or will be, affected by coastal or riverine hazards.

Community Vision - The overall goal of the community throughout the NYRCR planning process.

Conceptual Plan - A snapshot of the current thoughts of the community and planning committee. These plans evolved as communities analyzed the risk to their assets, their needs and opportunities, the potential costs and benefits of projects and actions, and their priorities.

Exposure - Local landscape characteristics that tend to increase or decrease storm effects.

Geographic scope - The planning area identified by the community and State guidelines where assets are most at risk; where future construction or reconstruction of existing development should be encouraged or discouraged; or where key investment to improve the local economy can be instituted.

Hazard - The likelihood and magnitude of anticipated hazard events.



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Implementation Schedule - Preparing an implementation schedule of the actions needed to implement the strategies.

Need - Infrastructure and services that were damaged or rendered inoperable by Superstorm Sandy as well as methods and operations that failed to work during the storm event or experienced insufficient capacity to respond effectively.

Needs and Opportunities Assessment - Determining needs and opportunities to improve local economic growth and enhance resilience to future storms.

Opportunity - Additional resiliency benefits, whether economic, environmental, social or cultural, that may be achieved through the integration of new methods, procedures and materials into the normal course of rebuilding.

Public Engagement - Offering opportunities for public input and involvement at key milestones in the planning process.

Resilience - The ability of a system to absorb impacts while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt.

Risk - The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes.

Risk Area - Geographic areas at risk from coastal hazards according to differences in the exposure of the landscape.

Risk Assessment - Assessing risk to key community assets based on the three factors contributing to risk: hazard, exposure, and vulnerability.

Risk Assessment Tool - Evaluation of risk based on the formula: Hazard x Exposure x Vulnerability

Risk Score - The result of the risk assessment tool evaluation

Strategy - A specific way or ways to address the needs and realize opportunities presented by the committee.

Vulnerability - The capacity of an asset to return to service after an event.



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E. End Notes

Photo Credits: All photos contained in this document have been taken by the Jacobs Engineering Consultant Team, or provided by the Village of Amityville/Copiague NYRCR Planning Committee and thinkstock.com with permission.

ⁱ With the exception of data on ethnicity and race, all demographic data depicted below was taken from the US Census Bureau's American Factfinder at the CDP level, and reflects data from the most recent American Community Survey (ACS). Demographic data relating to ethnicity and race were derived from the 2010 Census in order to provide the most recent data available in those categories.

ⁱⁱ It is acknowledged that the CDP data may include some areas that are not contained within the identified NYRCR Community; however, across all CDPs in Suffolk County, the differences between the Census CDP boundaries and the NYRCR Community definitions are usually quite small. Additionally, the Census data's intended use in this report is to provide an overview of the composition and general habits of the community. It is unlikely that areas included in the CDP but excluded from the NYRCR Community will result in a substantial effect on the overview-level interpretation of the data or affect the identification of needs and opportunities or projects under the NYRCR Program.

ⁱⁱⁱ http://en.wikipedia.org/wiki/Copiague,_New_York

^{iv} <http://www.city-data.com/work/work-Amityville-New-York.html#mostCommonIndustries>

^v <http://www.city-data.com/work/work-Copiague-New-York.html#mostCommonIndustries>

^{vi} US Department of Commerce, NOAA, National Weather Service. *Hurricane/Post-Tropical Cyclone Sandy, October 22–29, 2012 May 2013. p. 1.*

^{vii} http://www.washingtonpost.com/blogs/capital-weather-gang/post/hurricane-sandy-recap-historic-storm-from-storm-surge-to-snow/2012/10/31/9a7c56d8-2362-11e2-ac85-e669876c6a24_blog.html

^{viii} <http://ny.water.usgs.gov/sandyindex.html>

^{ix} US Department of Commerce, NOAA, National Weather Service. *Hurricane/Post-Tropical Cyclone Sandy, October 22–29, 2012 May 2013. p. 12.*

^x <http://www.cnn.com/2012/10/30/us/sandy-records/>

^{xi} National Oceanic and Atmospheric Administration (NOAA), National Climatic Data Center, <http://www.ncdc.noaa.gov/billions/events>.

^{xii} A Message from Mayor James P. Wandell, <http://www.amityville.com/mayor-message.cfm>.

^{xiii} Federal Emergency Management Agency (FEMA), Individual Assistance Preliminary Damage Assessments.

^{xiv} Federal Emergency Management Agency (FEMA), Individual Assistance Preliminary Damage Assessments.

^{xv} Federal Emergency Management Agency (FEMA), Individual Assistance Preliminary Damage Assessments.

^{xvi} Federal Emergency Management Agency (FEMA), Individual Assistance Preliminary Damage Assessments.

^{xvii} FEMA prepared an analysis of damage according to the number of applicants for assistance in each affected zip code. 11701 is the zip code for the Village of Amityville.

^{xviii} FEMA prepared an analysis of damage according to the number of applicants for assistance in each affected zip code. 11726 is the zip code for Copiague.

^{xix} Substantial Damage - Damage of any origin sustained by a building whereby the cost of restoring the building to its before-damaged condition would equal or exceed 50 percent of the market value of the building before the damage occurred. (<http://www.fema.gov/national-flood-insurance-program/definitions>.)

^{xx} For owner occupied properties in the Amityville zip code, FEMA tabulated 746 homes with damage in the range of \$0 to \$15,000; 506 homes with damage in the range of \$15,000 to \$31,900; 244 homes with damage in the range of \$31,900 to \$50,000; and 59 homes with damage of \$50,000 or more. In the Copiague zip code, FEMA tabulated 454 homes with damage in the range of \$0 to \$15,000; 179 homes with damage in the range of \$15,000 to \$31,900; 56 homes with damage in the range of \$31,900 to \$50,000; and 7 homes with damage of \$50,000 or more. It should be noted that the average claim paid by FEMA will likely be substantially less than the estimated damages, due to deductibles and other factors.

^{xxi} U.S. Department of Housing and Urban Development (HUD) Office of Policy Development and Research, *Analysis of Communities Impacted by Hurricane Sandy*, January 29, 2013, draft.

^{xxii} U.S. Department of Housing and Urban Development (HUD) Office of Policy Development and Research, *Analysis of Communities Impacted by Hurricane Sandy*, January 29, 2013, draft.

^{xxiii} U.S. Department of Housing and Urban Development (HUD) Office of Policy Development and Research, *Analysis of Communities Impacted by Hurricane Sandy*, January 29, 2013, draft.

^{xxiv} U.S. Department of Housing and Urban Development (HUD) Office of Policy Development and Research, *Analysis of Communities Impacted by Hurricane Sandy*, January 29, 2013, draft.

^{xxv} These were letters sent by the Town to the homeowner indicating that their homes had been inspected and deemed to be substantially damaged. The FEMA definition of substantial damage is: "Damage of any origin sustained by a building whereby the cost of restoring the building to its before-damaged condition would equal or exceed 50 percent of the market value of the building before the damage occurred."

^{xxvi} Long Island Regional Planning Council. *Long Island 2035 Visioning Initiative Final Report*. December 2009. p. 21

^{xxvii} The Extreme, High, and Moderate risk areas incorporate future sea level rise by adding 3 feet of elevation to the Mean High Water shoreline, NOAA National Weather Service shallow coastal flood advisory thresholds, and the 100-year floodplain, respectively.



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^{xxxviii} Asset not in the extreme, high, and moderate risk assessment areas are noted as not applicable (N/A.)

^{xxxix} Aggregated GIS data provided by NYSDOS. Bridge data developed and maintained by NYS DOT State Highway Bridge Program, which inspects all bridges every two years. For more information on bridge condition from NYS DOT, visit: <https://www.dot.ny.gov/main/bridgedata>

^{xxx} Scour-critical bridges are at risk of failure due to scour. Scour is "the result of the erosive action of flowing water, removing sediment from the streambed and banks of streams and from around the piers (intermediate supports) and abutments (end supports) of bridges." <https://www.fhwa.dot.gov/engineering/hydraulics/pubs/idfieldpoa.pdf>.

^{xxxxi} The Village of Amityville/Copiague's 52 assets that were carried through the risk assessment process were refined, consolidated and/or eliminated based on the initial review of over 150 assets during the NYRCR Conceptual Plan development stage.

^{xxxii} Red = Severe Risk, Orange = High Risk, Yellow = Moderate Risk, Green = Residual Risk

^{xxxiii} E = Economic Assets, S = Health and Social Services Assets, H = Housing Assets, I = Infrastructure Assets, N = Natural and Cultural Resource Assets

^{xxxiv} E = Economic Assets, S = Health and Social Services Assets, H = Housing Assets, I = Infrastructure Assets, N = Natural and Cultural Resource Assets

^{xxxv} E = Economic Assets, S = Health and Social Services Assets, H = Housing Assets, I = Infrastructure Assets, N = Natural and Cultural Resource Assets

^{xxxvi} NYRCR Guidance Document. 2013. http://stormrecovery.ny.gov/sites/default/files/documents/Guidance_for_Community_Reconstruction_Plans.pdf.

^{xxxvii} U.S. Bureau of Labor Statistics.

^{xxxviii} U.S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research, prepared an *Analysis of Communities Impacted by Hurricane Sandy* (January 29, 2013, draft).

^{xxxix} U.S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research, prepared an *Analysis of Communities Impacted by Hurricane Sandy* (January 29, 2013, draft).

^{xl} Village of Amityville/Copiague NYRCR Planning Committee.

^{xli} New York Rising Community Reconstruction Program. *NYRCR Program Guidance to Firms, Project Evaluation, December 30, 2013*. p.3.

^{xlii} These costs could relate to reduced emergency and recovery expenditures in the future less implementation costs for the life of the project.

^{xliiii} Socially vulnerable population may be derived from the following criteria: poverty/low income, immigrant status, education level, institutionalization, renter-occupied household status, single senior-citizen household status.

^{xliiv} There are no Featured Project for the Community.

^{xli} Full-time equivalent (FTE) figures are general estimates. FTE's were estimated assuming half of the project cost would be labor and applying an average annual salary of \$40,000 based on data obtained from the U.S. Bureau of Labor Statistics, *Occupational Employment Statistics, May 2012 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates Nassau-Suffolk, NY Metropolitan Division* http://www.bls.gov/oes/current/oes_35004.htm#47-0000. This source and method for Full Time Equivalent jobs is used for all project profiles. Each FTE represents one year of employment.

^{xli} Long Island Regional Economic Development Council *The Strategic Economic Development Plan for Nassau and Suffolk Counties 2013 Update*, (2013).

^{xli} Long Island Regional Economic Development Council *The Strategic Economic Development Plan for Nassau and Suffolk Counties 2013 Update*, (2013).

^{xli} Long Island Regional Economic Development Council *The Strategic Economic Development Plan for Nassau and Suffolk Counties 2013 Update*, (2013).

^{xli} Long Island Regional Economic Development Council *The Strategic Economic Development Plan for Nassau and Suffolk Counties 2013 Update*, (2013).

^l Long Island Regional Economic Development Council *The Strategic Economic Development Plan for Nassau and Suffolk Counties 2013 Update*, (2013).



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