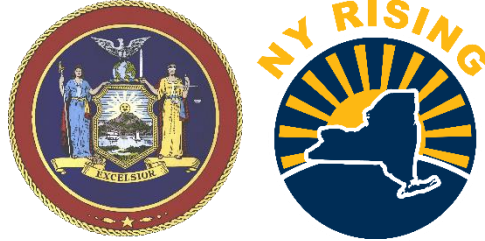


**New York
Governor's Office of Storm Recovery**



National Disaster Resilience Competition Phase 1 Application
As submitted to the U.S. Department of Housing and Urban Development (HUD),
March 27, 2015

Competition Schedule:

The National Disaster Resilience Competition is a year-long competition structured in two phases: (1) the framing phase and (2) the implementation phase.

- Phase 1 applications are due to HUD by March 27, 2015.
- HUD anticipates notifying applicants if they have been accepted to Phase 2 in June 2015.
- If invited by HUD to participate in Phase 2, GOSR will have 120 days after the date of an invitation letter to design and develop projects.
- HUD anticipates taking up to 60 days after the Phase 2 submissions before announcing awards.
- HUD must obligate the funds (sign a grant agreement) by September 30, 2017.
- Grantees will have 24 months to expend funds after obligation.

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Exhibit A Executive Summary
New York State
ExhibitAExecutiveSummary_NYS.pdf

The New York State Governor’s Office of Storm Recovery (GOSR) was established by Governor Andrew M. Cuomo in the wake of a series of unprecedented disasters: Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. From its inception, GOSR has worked to program federal recovery dollars including Community Development Block Grant Disaster Recovery (CDBG-DR) funds to promote a long-term resilient recovery in New York State. Through the National Disaster Resilience Competition (NDRC), GOSR will build upon the State’s ongoing investment in resilience, capitalizing upon the opportunity to respond and adapt to newly understood risks. As such, the State’s application to the NDRC:

- Identifies the following Most Impacted and Distressed target areas which meet the unmet recovery needs thresholds outlined in the HUD NDRC Notice of Funding Availability: Greene County, Nassau County, Schoharie County, Suffolk County, Tioga County, Westchester County, and the five counties of New York City;
- Describes and establishes GOSR’s capacity and experience in working across sectors to design and implement recovery and resiliency projects;
- Frames continuing infrastructure, economic revitalization, and housing unmet recovery needs by building upon GOSR’s Action Plan Amendment Eight (APA8) unmet needs analysis, as well as consultation with the State’s NDRC Interagency Working Group and input from eligible counties, and other stakeholders;
- Outlines a holistic, integrated approach that considers the physical, social, economic, and environmental resilience of both man-made and natural systems;
- Leverages and seeks to advance GOSR’s collaborative relationships with various partners at the local and regional scales, including governments, state agencies,

academic institutions, non-governmental organizations, foundations, and private-sector entities; and

- Demonstrates the State’s long term commitment to catalyzing a resilient recovery.

GOSR has successfully implemented recovery and resiliency programs in the areas of housing, economic development, infrastructure, and community reconstruction. Synthesizing lessons learned from these programs, including the NY Rising Community Reconstruction (NYRCCR) Program, a first-of-its-kind grassroots resiliency effort, GOSR has identified two dominant community typologies—coastal and riverine—which are at extreme risk from flooding caused by increasingly frequent extreme weather events and flooding connected to climate change.

GOSR’s systems-based approach hinges upon identifying strategies that will simultaneously improve the physical, social, economic, and environmental resilience of vulnerable riverine and coastal communities. This approach builds upon the recommendations of the NYS 2100 Commission, which was established by Governor Cuomo following Superstorm Sandy, and incorporates expert feedback from agency partners, counties, and other stakeholders. Additionally, select state agencies and counties have already provided substantial input regarding potential strategies, partnerships, and funding sources. Should the State advance to Phase 2, GOSR will continue to work with stakeholders to identify additional target areas, as appropriate, and to develop and refine impactful resiliency projects. In Phase 2, GOSR will undertake a multi-systems analysis to better define the characteristics common to coastal and riverine communities. GOSR will then select pilot communities and work with partners to design innovative resilience solutions tailored to the regional context.

The ultimate goal is to develop, implement, evaluate, and scale projects that provide multiple co-benefits and improve everyday quality of life through cross-sector collaboration with state agencies and other partners. NDRC funding will further empower the State to leverage existing resilience efforts and to catalyze new investments. Precedent examples of systems-based solutions include the two Rebuild by Design projects GOSR is working to implement; the Red Hook Integrated Flood Protection System project in Brooklyn; the Oakwood Beach buyout and green infrastructure project on Staten Island; and the buyout, green infrastructure, and affordable housing project proposed by the NYRCR Planning Committee in the village of Sidney, which is being implemented through the NYRCR Program and with Federal Emergency Management Agency Hazard Mitigation Grant Program funds. These efforts also reflect the State's prioritization of nature-based features, which can be designed to mitigate physical risk, while delivering economic, social, and environmental co-benefits. Nitrogen-mitigation will be a critical element of any environmentally-oriented resilience strategy going forward, and the State has already made significant investments toward reducing nitrogen pollution on Long Island through investments in sewer infrastructure in Suffolk County and critical wastewater treatment facilities like Bay Park in Nassau County.

Exhibit B Threshold Requirements
New York State
ExhibitBThresholdReq_NYS.pdf

Introduction

For the purposes of the HUD National Disaster Resilience Competition (NDRC) Phase 1 application, HUD has identified the State of New York as an eligible applicant. This document serves as the one application being submitted to this competition by the eligible applicant, New York State. The State has identified unmet economic revitalization, infrastructure, and housing recovery needs across 11 counties (Greene, Nassau, Schoharie, Suffolk, Tioga, Westchester, and the five counties of New York City), composing the State's 11 target areas in this Phase 1 application. These NDRC-eligible counties constitute 11 of New York State's 15 counties that have been identified by HUD as Most Impacted and Distressed areas as a result of federally declared disasters from 2011 through 2013. This Exhibit B narrative response is supported by the best available data and conforms to the threshold requirements outlined in Appendix G of the NDRC Notice of Funding Availability (NOFA) released on September 17, 2014. This narrative is also informed by a comprehensive unmet needs analysis recently undertaken by the State as part of Action Plan Amendment Eight (APA8), as required by FR-5696-N11 issued October 16, 2014. As a current HUD grantee, the State periodically amends its Action Plan to document the proposed use of funding to support continued recovery efforts. This process is one of the ways the State possesses a deep understanding of the evolving unmet recovery needs of storm-impacted communities.

The State considers the data referenced as part of the APA8 unmet recovery needs analysis as the best available data for purposes of this application. These data also form the basis for understanding the extent of the populations impacted as a result of recent disasters. While they are not necessarily predictive of populations that may be impacted in future events, they will

inform the analyses and modeling conducted by the State in framing its future vulnerabilities and hazards.

These data display the unmet recovery and rebuilding needs of the State and its counties as a whole, and demonstrate that of impacted populations, those with low- and moderate-income, limited English proficiency, functional needs, the elderly, or isolated are disproportionately burdened by the effects of these disasters. The State’s approach to recovery and rebuilding is grounded by this understanding of vulnerable populations, and the State will continue to address the specific needs of these populations in its current and future rebuilding and recovery efforts.

As discussed in Exhibit E (pages 56-61) and Attachment D (pages 96-111), in addition to establishing disaster impacts and unmet recovery needs in APA8, the State engaged in extensive outreach to state agencies, eligible counties, and other stakeholders to identify unmet recovery needs for this Phase 1 application. As such, this narrative reflects NDRC-specific input that stakeholders have contributed via survey submissions and other mechanisms.

It is critical to note that the State can identify additional target areas in Phase 2 of the NDRC application. The State will continue to work with all relevant stakeholders—especially Declared counties¹—to assess both new and existing data that might establish additional target

¹ In Appendix B of the NDRC NOFA, HUD designated 50 counties across the State as Declared (i.e. counties receiving a Federal Disaster Declaration from 2011 to 2013) and therefore eligible for consideration as part of this Phase 1 application. Of those 50 counties, HUD designated 15 counties as Most Impacted and Distressed and another 29 sub-county Census Tracts and/or Places within 11 Declared counties as Most Impacted and Distressed. As per HUD, Tribal Areas located with Most Impacted and Distressed counties are eligible for consideration as part of this

areas for inclusion in the Phase 2 application. In order to be considered as an NDRC target area, the county or sub-county area must meet: 1) Most Impacted threshold criteria, 2) Distressed threshold criteria, and 3) unmet recovery needs threshold criteria. Regardless, the solutions the State intends to develop will be scalable and replicable outside of the target areas introduced above.

The State is committed to meeting all of the threshold requirements per the NDRC NOFA. Should the State advance to Phase 2, the State will ensure that all proposed activities meet a national objective, are eligible activities, incorporate resilience activities as outline in the NOFA, and have a clear tie back to the disaster which qualified the target area. The State understands that the overall, over 50% of CDBG-DR funds must meet the national objective of benefiting low- and moderate-income individuals. These threshold requirements will be further detailed in Phase 2 as the activities are refined and presented to HUD per the NOFA requirements. As Part of this Phase 1 application, the State is submitting CBDG-NDR Application Certifications in Attachment C (pages 90-93). New York State meets all of the applicable requirements of the General Section in addition to the requirements of the NDRC NOFA.

Economic Revitalization Unmet Recovery Needs

The State has identified continuing unmet economic revitalization recovery needs due to Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee in Most Impacted and Distressed areas that cannot be addressed with existing resources. To meet the unmet needs thresholds

Phase 1 application, and Tribal Areas located within Declared counties are automatically deemed Distressed, though not Most Impacted.

outlined in Appendix G, the State has identified a minimum of five businesses with remaining repair needs. As discussed below, the extensive and continued outreach conducted in the administration of the NY Rising Small Business Recovery Program meets the following data source requirements outlined in the NOFA's Appendix G: a windshield survey showing a minimum of five businesses with remaining unmet repair needs; a survey of at least five business owners confirming damage due to the disaster and repairs not completed due to not receiving adequate resources; and the recorded addresses of those businesses.

Launched in spring 2013, the NY Rising Small Business Recovery Program was established to serve eligible small businesses impacted by Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. Tens of thousands of businesses were located in Census Tracts with greater than one foot of flooding during Superstorm Sandy. These businesses suffered physical damage or, at minimum, were closed for extended periods of time due to power outages and limited transportation networks. As of December 2014, over 3,000 businesses submitted applications to the program and are at various stages of review or approval in the application process. Approximately 700 applications have been approved for grant assistance to date. The program currently remains open for new applications.

The Governor's Office of Storm Recovery (GOSR) executed subrecipient agreements with a statewide network of Small Business Development Centers (SBDCs) through the State University of New York (SUNY) to assist in the administration of the program. In addition, the State engaged the Empire State Development Corporation to conduct additional outreach for the program. The State's extensive SBDC network is uniquely positioned to provide both initial outreach and on-going technical assistance to storm-impacted businesses. Every applicant to the Small Business Recovery Program undergoes four levels of review:

- An *initial review* by the SBDC Business Advisor (BA), who is located in the field and works directly with the business applicant as the primary point of contact. The BA works closely with the applicant in person and over the phone throughout the application process. This includes a site visit.
- A *second level of review* by the SBDC Case Manager Lead who performs a QA/QC of the BA's work prior to submitting the file to GOSR for final underwriting.
- An *initial underwriting* by a GOSR Underwriter and support staff. This review includes, but is not limited to an anti-fraud, waste, and abuse (AFWA) check, duplication of benefits verification, confirmation of proof of damage, and the review for reasonableness of eligible expenses.
- A *final review* by GOSR management for compliance with program policies and procedures.

The program performs one or all of the following additional reviews in assessing applicants requesting construction-related assistance:

- Estimated Cost of Repair (ECR) and Allowable Activities (AA) Third Party Damage Inspection: Per program policies and procedures, all applicants seeking construction assistance for future or past repair and/or mitigation work are required to have a damage assessment from the program's vendor. The damage assessment provides a valuation of the damages suffered by the business and also either calculates the value of the work already completed or calculates the value of the work to be completed.

- **Third Party Environmental Checklist:** Per program policies and procedures, all applicants seeking construction-related assistance are required to comply with all HUD environmental requirements, as outlined in 24 CFR Part 58. The environmental review (ERR Cat Ex A) for construction activities includes a site visit and the completion of an on-site National Environmental Policy Act checklist, which is carried out by the Program’s vendor.
- **BA Site Visit:** if the BA or GOSR determines that additional verification is needed to confirm the level of damage and outstanding recovery needs, a site visit with the business applicant to tour the impacted business location will be scheduled.

In cases where there is insufficient evidence of a site visit or windshield survey based on the criteria above, the State has conducted additional site visits and communicated with the business to confirm that there are continuing unmet needs.

Through a review of applicant files, ongoing technical assistance, and site visits, the State has identified continuing unmet economic recovery needs in the target areas outlined below. In summary, for the purposes of meeting the unmet economic revitalization recovery needs threshold for this Phase 1 application, the State presents data to demonstrate that small businesses have been subject to at least one site visit to validate damage and establish remaining unmet needs. Based on available HUD guidance, the State is confident that these inspections and verification procedures surpass a standard definition of a windshield survey in methodological rigor—and therefore meet—the data source guidelines outlined in Appendix G to demonstrate unmet economic revitalization recovery needs.

Infrastructure Unmet Recovery Needs

The State has identified continuing unmet infrastructure recovery needs due to Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee in the Most Impacted and Distressed target areas that cannot be addressed with existing resources. To meet the unmet needs thresholds outlined in Appendix G, the State has identified quantified damage (i.e. FEMA Category C to G) that remains unrepaired as a result of inadequate resources. The State presents FEMA project worksheets with the estimated damage and repair amounts and unfunded repair needs to establish a minimum of \$400,000 in permanent unfunded infrastructure repair need and to describe the location and damage of the permanent public infrastructure relative to the location of the Most Impacted and Distressed target area. In the following narrative, the State indicates through a sources and uses document if there is no current source of funding for the projects associated with the worksheets.

Target Areas

Greene County

Most Impacted and Distressed

HUD has designated Greene County a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene and Superstorm Sandy). For this Phase 1 application, the State designates the entire county as a target area.

Greene County, located west of the Hudson River between Kingston and Albany, was severely impacted by Hurricane Irene and Tropical Storm Lee. In total, almost 1,000 owner-occupied and renter occupied housing units were damaged in the county. Of these, over 500 were defined as low- and moderate-income households. These data were collected by the State over recent months and they combine data from FEMA and the Small Business Administration as

well as programmatic data collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.²

In addition to the damage caused to the county’s housing stock, the State estimated that the county suffered significant business disruption. In all, 120 loan applications were received by the Small Business Administration, of which 68.3% were denied for various reasons—signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

To demonstrate that this Most Impacted and Distressed area meets the Unmet Recovery Needs Threshold per the NOFA, the State is using data collected in the area of *economic revitalization*.

In this target area, the State can identify seven businesses in the NY Rising Small Business Recovery Program showing continued unmet recovery need with no source of funding available or indicated. This surpasses the minimum criteria of five businesses. Supporting documentation for these small businesses is provided as part of the State’s supportive data. Supporting documentation indicates whether the business received a visit from a SBDC representative, went through an ECR or ERR Cat Ex A visit and/or AA visit. These businesses have all been verified with site visits and duplication of benefits assessments. They continue to have unmet construction, repair, machinery and equipment, and/or mitigation needs. If documentation is lacking for one of these businesses, the State conducted an additional

² Appendix B of APA8 is accessible through the following link:

http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

windshield survey for the purpose of this Phase 1 application. Because each of the businesses identified have hit their cap as per the program policies and procedures, their unmet recovery needs currently have no source of funding. As such, this target area continues to have unmet recovery needs at the time of this Phase 1 application.

Nassau County

Most Impacted and Distressed

HUD has designated Nassau County as a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene and Superstorm Sandy). In this Phase 1 application, the State designates the entire county as a target area.

Nassau County, situated on western portion of Long Island, was one of the most severely impacted counties as a result of Hurricane Irene and Superstorm Sandy. In APA8, the State estimated that over 50,000 housing units were damaged, including 6,000 severely damaged units in the 100-year flood plain. Of the 50,000 damaged units, over 21,700 were defined as low- and moderate-income households, as per the methodology outlined in APA8. These data were collected by the State over recent months; they combine data from FEMA and the Small Business Administration, as well as programmatic data collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.³

³ Appendix B of APA8 is accessible through the following link:

http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. Over 23,000 small businesses were in a Census Block that received a foot or more of flooding; almost 7,000 were in the actual flood zone, as defined by APA8. In all, over 600 loan applications were received by the Small Business Administration, of which 53.8% were denied for various reasons—signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

In order to display that this Most Impacted and Distressed County meets the Unmet Recovery Needs Threshold, the State is using data collected in the area of *infrastructure*.

In this application, the State is providing the FEMA Project Worksheet associated with the Vegetation Management Program on behalf of the Long Island Power Authority (LIPA), (HUD Matrix Code: 03-Other Public Facilities and Improvements; PW: PA-02-NY-4085-PW-00367(3)). Project worksheets (PWs), as well as the sources and uses statement, are provided as part of the State's supportive data.

LIPA's retail electric system provides electric service to over 1.1 million customers in Nassau and Suffolk counties and the Rockaway Peninsula in Queens. This customer base represents 99% of the total possible customers on Long Island. In the aftermath of Superstorm Sandy, thousands of those customers were left without power for weeks. All 12 of LIPA's substations on the South Shore of Long Island sustained flood damage.

After Superstorm Sandy, LIPA undertook substantial reconstruction and resilience efforts (e.g. storm hardening measures, including installation of flood prevention barriers, elevation of equipment and adjustments to switching systems etc.) The State, through GOSR, is providing an

\$80 million match to FEMA’s \$1.4 billion in funds to upgrade LIPA’s network. Planned improvements include a new outage management system and other technology upgrades to identify power outages and rapidly restore power. Funding will also be used to repair substations and electrical distribution systems.

However, LIPA also plans to spend \$729 million of its total federal and State assistance and insurance proceeds on mitigation measures to protect against future storms, such as strengthening lines and elevating equipment. These additional unmet recovery needs require a local match in excess of \$60 million. At present, no funding sources have been identified for addressing these needs. As such, this represents an unfunded unmet need well in excess of the \$400,000 threshold required for Nassau County.

Schoharie County

Most Impacted and Distressed

HUD has designated Schoharie County a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene and the remnants of Tropical Storm Lee). For this Phase 1 application, the State designates the entire county as a target area.

Schoharie County, situated in the Mohawk Valley, was severely impacted by Hurricane Irene and Tropical Storm Lee. In APA8, the State estimated that nearly 1,200 housing units were damaged in the county. Of these damaged units, over 700 were defined as low- and moderate-income households, as per the methodology outlined in APA8. These data were collected by the State over recent months; they combine data from FEMA and the Small Business

Administration, as well as programmatic data collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.⁴

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. In all, 120 loan applications were received by the Small Business Administration, of which 68.3% were denied for various reasons—signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

In order to display that this Most Impacted and Distressed County meets the Unmet Recovery Needs Threshold, the State is using data collected in the area of *economic revitalization*.

In this target area, the State can identify eight businesses in the NY Rising Small Business Recovery Program showing continued unmet recovery need with no source of funding available or indicated. This surpasses the minimum criteria of five businesses. Supporting documentation for these small businesses is provided as part of the State's supportive data. Supporting documentation indicates whether the business received a visit from a SBDC representative, went through an ECR or ERR Cat Ex A visit and/or AA visit. If documentation is lacking for one of these businesses, the State conducted an additional windshield survey.

These businesses have all been verified through site visits and duplication of benefits assessments. They continue to have unmet construction, repair, machinery and equipment, and/or

⁴ Appendix B of APA8 is accessible through the following link:

http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

mitigation needs. However, because they have hit their cap as per the program policies and procedures, their unmet recovery needs currently have no source of funding. As such, this target area continues to have unmet recovery needs at the time of this application.

Suffolk County

Most Impacted and Distressed

HUD has designated Suffolk County a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene, Superstorm Sandy, and severe winter storm and snowstorm from February 8, 2013 through February 9, 2013). In this Phase 1 application, the State designates the entire county as a target area.

Suffolk County, situated on the easternmost portion of Long Island, was one of the counties most heavily impacted by Hurricane Irene and Superstorm Sandy. In APA8, the State estimated that over 15,000 housing units were damaged, including 1,500 severely damaged units in the 100-year flood plain. Of these 15,000 damaged units, over 7,000 were defined as being occupied by low- and moderate-income households, as per the methodology outlined in APA8. These data were collected by the State over recent months; they combine data from FEMA and the Small Business Administration, as well as programmatic data collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.⁵

⁵Appendix B of APA8 is accessible through the following link:

http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. Almost 1,000 small businesses were in a census block that experienced a foot or more of flooding during Superstorm Sandy. In all, over 600 loan applications were received by the Small Business Administration, of which 53.8% were denied for various reasons—signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

In order to display that Suffolk County meets the Unmet Recovery Needs Threshold, the State is using data collected in the area of *infrastructure*. As previously discussed in Nassau County's threshold narrative, the State is providing the FEMA Project Worksheet associated with the Vegetation Management Program on behalf of LIPA, which demonstrates an unmet recovery need of over \$60 million, which is well in excess of the \$400,000 threshold required for both Nassau and Suffolk Counties. See Nassau County subsection above for complete narrative. Supporting documentation through PWs as well as the sources and uses statement are provided as part of the State's supportive data.

Tioga County

Most Impacted and Distressed

HUD has designated Tioga County a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (severe storms, flooding, tornadoes from April 26, 2011 through May 8, 2011 and the remnants of Tropical Storm Lee). In this Phase 1 application, the State designates the entire county as a target area.

Tioga County, situated in the Southern Tier of New York, was severely impacted by Tropical Storm Lee. In APA8, the State estimated that over 2,400 housing units were damaged in the county. Of these damaged units, over 1,100 were defined as being occupied by low- and moderate-income households, as per the methodology outlined in APA8. These data were collected by the State over recent months. They combine data from FEMA and the Small Business Administration, as well as programmatic data collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.⁶

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. In all, 155 loan applications were received by the Small Business Administration, of which 45.8% were denied for various reasons—signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

In order to display that this Most Impacted and Distressed County meets the Unmet Recovery Needs Threshold, the State is using data collected in the area of *economic revitalization*.

In this target area, the State has identified six businesses in the Small Business Recovery Program showing continued unmet recovery need with no source of funding available or indicated. This surpasses the minimum criteria of five businesses. Supporting documentation for

⁶ Appendix B of APA8 is accessible through the following link:

http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

these small businesses is provided as part of the State’s supportive data. Supporting documents indicate whether the business in the target area received a visit from a SBDC representative, went through an ECR or ERR Cat Ex A visit and/or AA visit. If, documentation is lacking for one of these businesses, the State conducted an additional windshield survey.

These businesses have all been verified with site visits and duplication of benefits assessments. They continue to have unmet construction, repair, machinery and equipment, and/or mitigation needs. Because each business identified has hit its cap as per the program policies and procedures, its unmet recovery needs currently have no source of funding. As such, this target area continues to have unmet recovery needs at the time of this application.

Westchester County

Most Impacted and Distressed

HUD has designated Westchester County a Most Impacted and Distressed area for the purposes of the NDRC as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene and Superstorm Sandy). In this Phase 1 application, the State designates the entire county as a target area.

Westchester County, situated just north of New York City, was one of the most impacted counties as a result of Hurricane Irene and Superstorm Sandy. In APA8, the State estimated that nearly 3,000 housing units were damaged in the county. Of these damaged units, almost 1,200 were defined being occupied by low- and moderate-income households, as per the methodology outlined in APA8. These data were collected by the State over the last number of months; they combine data from FEMA and the Small Business Administration, as well as programmatic data

collected during the recovery phase. Complete tables outlining damage at the county and municipal level are outlined in Appendix B of APA8.⁷

In addition to the damage caused to the county's housing stock, the State estimated that the county suffered significant business disruption. Over 1,700 small businesses were in a Census Block with a foot or more of flooding and over 130 were in the flood zone, as defined in APA8. In all, 129 loan applications were received by the Small Business Administration, of which 70.5% were denied for various reasons, signifying a continued unmet need in the county in terms of business needs, as per the methodology outlined in APA8 (also outlined in Appendix B of APA8).

Unmet Recovery Needs

In order to display that this Most Impacted and Distressed County has continued unmet needs and meets the Unmet Recovery Needs Threshold, the State is using data collected in the area of *infrastructure*.

As a result of Hurricane Irene and Superstorm Sandy, Westchester County has incurred almost \$4 million dollars in permanent damage (FEMA Categories C-G). PWs are provided as part of the State's supportive data. At present, no funding sources have been identified for addressing these needs. As such, this represents an unfunded unmet need of \$592,000—well in excess of the \$400,000 threshold required for Westchester County.

⁷Appendix B of APA8 is accessible through the following link:

http://stormrecovery.ny.gov/sites/default/files/uploads/apa8_appendix.pdf.

New York City (Five Counties)

The State of New York and City of New York (City) have closely collaborated to identify and highlight the unmet recovery needs for all five counties of New York City (Bronx, Kings, New York, Queens, and Richmond). These counties were designated by HUD as Most Impacted and Distressed areas as a result of federally declared disasters from 2011 through 2013 (Hurricane Irene and Superstorm Sandy). In this Phase 1 application, the State designates all five counties as target areas. Given the collaboration between the State and City, the narrative outlined below, in fulfillment of the unmet recovery needs requirements of this competition, closely mirrors the language used in the City’s Phase 1 NDRC application.

For the NDRC Phase 1 application purposes, the City is using data from the New York City Housing Authority (NYCHA) to demonstrate over \$439 million in unmet recovery needs and data from the New York City Department of Housing Preservation and Development (HPD) to demonstrate a further \$77.3 million in unmet recovery needs under the NDRC.

Along with the City, the State is submitting proof of these unmet needs as part of the State’s supportive data.

Unmet Recovery Needs

In order to display that each of New York City’s five counties have continued unmet needs and meets the Unmet Recovery Needs (URN) Threshold, the State is using data collected in the area of *housing*. For the purposes of the HUD NDRC Phase 1 application, the URN for housing for all five target areas totals \$516.7 million (see file referenced above).

Public Housing

NYCHA is demonstrating over \$439 million in combined URN across all five of the target areas (Bronx, Kings, New York, Queens, Richmond) as the result of Superstorm Sandy,

DR-4085.

These numbers are not intended to represent all of the City's or NYCHA's unmet needs, rather, just the ones identified for the purpose of supporting the NDRC Phase 1 MID-URN threshold requirement. Prior CDBG-DR funding allocations, together with other funding sources including, but not limited to, insurance, City, State, and FEMA funds (\$3,454,883,000 – see NYCHA_8-Detailed_Accounting_by_Development) are inadequate for addressing remaining housing repair needs (\$3,894,300,274 – see NYCHA_1-Overview-Costs_and_Funding).

All of the NYCHA sites where URN has been identified are Sandy-damaged properties. NYCHA had over 400 buildings with over 35,000 residential units, housing nearly 80,000 residents affected by DR-4085. The sites and buildings were inundated with rain, experienced wind-born debris damage, storm surge and wide-spread power outages that left residents without critical elevator and trash compactor service. Hurricane Sandy posed a significant threat to the health and safety for NYCHA residents.

A critical element in NYCHA's recovery and the overall effort to preserve public housing, is to ensure that the infrastructure replaced, is replaced in a manner that reduces the risk of equipment damage in future storms and minimizes the impact on the City's most vulnerable populations. Although a combination of funding sources (FEMA PA, CDBG-DR and insurance both private and NFIP) have been identified to cover repairs and some mitigation measures (captured within the FEMA PWs), it is not enough to pay for additional resiliency measures identified herein as URN. These resiliency measures would provide back-up power for 179 buildings across 51 developments in Bronx County and fund surge/stormwater protection for 12 developments in Kings County, 16 developments in New York County, seven developments in Queens County and one development in Richmond County. NYCHA does not anticipate that any

of the existing FEMA, CDBG-DR or insurance funds will pay for the nearly \$440 million of planned resiliency measures identified as URN. To show URN in each county, NYCHA has selected one FEMA PW from each county that details the scope of work being paid for by FEMA, insurance (including commercial and NFIP) and CDBG-DR. Correspondingly, the costs for the proposed resiliency measures are attached to prove that there is no scope/cost overlap between what is funded and what is being identified as URN.

NYCHA Supporting Document List

NYCHA 1-Overview-Costs and Funding: Overview of NYCHA DR-4085 repair estimates and identified funding (current as of January, 2015) for DR-4085 damages. Because the FEMA PWs are not final, neither costs nor funding numbers are final. \$3,894,300, 274 costs identified, \$3,454,883,000 funding identified, \$439,417,274 identified URN.

NYCHA 2A-Bronx FEMA PW: Bronx County FEMA Project Worksheet (PW) #02848(0). This FEMA PW was selected to show no scope/cost overlap between repairs covered by FEMA/insurance/CDBG-DR and URN resiliency measures. This document includes an itemized list of the developments and building count (179) for each that are captured in the PW.

NYCHA 2B-Bronx Resiliency Costs: Bronx County building resiliency measures cost estimate identified as URN. This is a spreadsheet estimate of the costs associated with installing back-up power generators on the 179 buildings in the Bronx identified in NYCHA 2A. This estimate methodology is based on the total number of buildings identified in PW02848(0), using R S Means Costworks 1st Quarter 2015, using Union Labor Costs. These line items are assembly costs based on assemblies approved by FEMA for NYCHA estimating. The estimate was prepared by Cliff Thompson, CM PM, Certified Estimator working for CB&I.

NYCHA 3A-B: (A) Demonstrates an overview of estimates for costs to provide combination surge and stormwater protection systems for 34 NYCHA developments that sustained DR-4085 damages from storm surge flooding in Kings, New York, Queens and Richmond Counties. (B) Spreadsheet that shows a per/site breakdown of the resiliency feature costs for Kings, New York, Queens and Richmond Counties and a signed letter from Future Proof stating estimating qualifications and methodology. The estimate was prepared by Prisca Terven Weems, MArch, MSc, LEED AP, Managing Partner of Future Proof.

NYCHA 4A-Kings FEMA PW: Sample Kings County site FEMA PW - Coney Island Houses 4&5. This FEMA PW was selected to show no scope/cost overlap between repairs covered by FEMA/Insurance/CDBG-DR and URN resiliency measures.

NYCHA 4B-Kings Resiliency Costs: Sample Kings County site resiliency measures cost estimate identified as URN.

NYCHA 5A-New York County FEMA PW: Sample New York County site FEMA PW – Rangel Houses. This FEMA PW was selected to show no scope/cost overlap between repairs covered by FEMA/Insurance/CDBG-DR and URN resiliency measures.

NYCHA 5B-New York Resiliency Costs: Sample New York County site resiliency measures cost estimate identified as URN.

NYCHA 6A-Queens FEMA PW: Sample Queens County site FEMA PW – Astoria Houses. This FEMA PW was selected to show no scope/cost overlap between repairs covered by FEMA/Insurance/CDBG-DR and URN resiliency measures.

NYCHA 6B-Queens County Resiliency Costs: Sample Queens County site resiliency measures cost estimate identified as URN.

NYCHA 7A-Richmond FEMA PW: Sample Richmond County site FEMA PW – New Lane Houses. This FEMA PW was selected to show no scope/cost overlap between repairs covered by FEMA/Insurance/CDBG-DR and URN resiliency measures.

NYCHA 7B-Richmond Resiliency Costs: Sample Richmond County site resiliency measures cost estimate identified as URN.

NYCHA 8-Detailed Accounting by Development: A breakdown by development of the DR-4085 repair estimates and identified funding (current as of January, 2015) for DR-4085 damages. Because the FEMA PWs are not final, neither costs nor funding numbers are final. These costs reflect those costs being captured in the FEMA PWs and do not include the proposed resiliency measures identified as URN.

Multi-Family Housing

For purposes of this Phase 1 application, the New York City Department of Housing Preservation and Development (HPD) is demonstrating \$77.3 million in URN, and is submitting proof of URN for the MID designated counties of New York City (see “New York City Supporting Data” file referenced above).

In the aftermath of Superstorm Sandy, the City developed the Multi-Family Build it Back (BiB) Repair Program to address multi-family buildings in the 100-year floodplain that were in need of storm-related repairs and vulnerable to future storm events. The BiB Repair Program addresses limited resiliency retrofits such as raising electrical equipment where feasible, but it is not structured to pursue comprehensive resiliency assessments and scopes of work such as flood-proofing or installing redundant building systems, which require more complex analysis from engineers and technical experts.

To address this gap in resources for multi-family resiliency and protection measures, the City's CDBG-DR Action Plan includes the Residential Building Mitigation Program (RBMP), which allocates \$60 million for comprehensive resiliency retrofit measures necessary to protect vulnerable residents from loss of critical building services in the event of a storm. However, the RBMP does not provide adequate funding to benefit all vulnerable, majority low- and moderate-income (LMI) buildings in the 100-year floodplain. BiB has identified a total of 133 multi-family buildings housing primarily LMI residents (66%) as candidates for comprehensive resiliency retrofits. Based on current data, the existing \$60 million in CDBG-DR funding allocated to BiB resiliency retrofits is expected to serve approximately 38 of the 133 buildings. These 38 buildings are all classified as majority-LMI. Using current cost projections for resiliency retrofits based on building size, we estimate that an additional \$77.3 million is required to fund comprehensive retrofits for the remaining 95 buildings housing LMI residents. Because most of the 95 buildings targeted for the additional \$77.3 million are smaller in size than those to be served by the existing \$60 million, less funding is required per building for retrofit measures.

Exhibit C Capacity
New York State
ExhibitCCapacity_NYS.pdf

Introduction

New York State is proposing a regional approach to resilience that addresses the threats and hazards faced by riverine and coastal communities and responds to the intertwined physical, social, economic, and environment resilience needs of the communities. The approach is regional and cross-cutting because systems, such as watersheds, transcend municipal boundaries and policy silos. The Governor’s Office of Storm Recovery (GOSR) is particularly well-positioned to lead this effort as it is currently leading and coordinating the State’s recovery and rebuilding efforts. GOSR’s work combines a local delivery focus with regional scale, addressing cross-sectional resilience issues. As the Agency’s recovery and rebuilding work advances, it is increasingly apparent that a regional, cross-sectional focus must be embraced to truly address the State’s unmet recovery needs. This regional approach demands in-depth and meaningful engagement from stakeholders all over the State. GOSR’s capacity to engage state agencies, public and private partners, and community stakeholders has been clearly demonstrated in the Agency’s past and current work and the Agency intends to similarly engage diverse partners in this effort.

General Management Capacity

GOSR is spearheading the development of this Phase 1 NDRC application and is well-positioned and well-staffed to manage any additional disaster recovery funding received from HUD. In June 2013, Governor Andrew M. Cuomo established GOSR to maximize the coordination of federally funded recovery and resilience efforts in storm-affected areas throughout New York State. GOSR manages the State’s \$4.4 billion allocation of Community Disaster Block Grant – Disaster Recovery (CDBG-DR) funding authorized by the Disaster Relief Appropriations Act, 2013 (Public Law 113-2, approved January 29, 2013), administering a

variety of programs relating to housing recovery, economic development, infrastructure, and community reconstruction in disaster-impacted areas. Formed under the auspices of the New York State Housing Trust Fund Corporation, a public benefit corporation and subsidiary agency of New York State Homes and Community Renewal, GOSR has demonstrated proficiency in disbursing CDBG-DR dollars in a timely, compliant manner.

GOSR has gleaned valuable experience from the development and administration of recovery programs and is fully prepared to implement additional resiliency programs and projects. GOSR possesses the requisite financial management, project management, and leadership capacity to successfully develop the NDRC application and to shepherd the implementation of subsequent projects. The Agency consists of more than 120 full-time staff, manages an array of contractors, operates financial and procurement systems that are compliant with all State and federal requirements, and has put in place fully functioning quality assurance, quality control, and internal control systems. Additionally, according to the requirements of the Disaster Relief Appropriations Act, 2013 (Public Law 113-2), the State has submitted and continues to update as needed the Certification of Proficient Controls, Processes, and Procedures to HUD, which certify to the Agency's ability to properly manage federal funds.

GOSR has established several models for expeditious project implementation—from utilizing directly-procured vendors to entering into subrecipient agreements with eligible agency, municipal, and non-profit partners. In the NDRC and in the State's ongoing recovery efforts, GOSR is prepared to leverage its institutional knowledge and spearhead implementation of additional recovery and resilience projects, developing innovative financing strategies that streamline recovery at the local level and maximize available CDBG-DR funds. GOSR has experience in utilizing its own staff and contractors to design and plan ambitious regional-level

projects and is not directly dependent on partners for those services. GOSR’s staff has extensive experience in developing programs to meet and exceed various diversity requirements (M/WBE, EEO, Section 3, etc.), as well as in working with quantitative data to analyze racial and economic disparities.

Moreover, since its establishment, GOSR has been working collaboratively with community stakeholders in storm-impacted communities to understand damage, respond to unmet needs, and anticipate future threats. Tailored and robust stakeholder engagement is the foundation upon which each of the State’s recovery programs is built. For example, the NY Rising Small Business Recovery Program utilizes the previously mentioned Small Business Development Center network; the NY Rising Housing Recovery Program utilizes the Long Island Housing Partners; the NY Rising Infrastructure Program, which includes the implementation of two Rebuild by Design projects, utilizes the unique, multi-sector partnerships established in the Rebuild by Design planning process; and the NY Rising Community Reconstruction (NYRCR) Program establishes an ambitious, scalable, and replicable model for citizen empowerment in the recovery and resiliency planning process.

This application has been prepared by GOSR staff, after extensive collaboration with state agencies, county governments, and other stakeholders.

Cross-Disciplinary Technical Capacity

In the continued administration of the State’s recovery programs, GOSR has engaged a variety of expert partners—many of whom were integral to the development of this Phase 1 application—and can be called upon to successfully develop and implement innovative resilience solutions in Phase 2 and beyond. As discussed further in Exhibit E (pages 56-61) and Attachment D (pages 96-111), for the express purpose of preparing this Phase 1 application,

GOSR rolled out a targeted strategy to engage the following stakeholder groups within the State: select state agencies (through a newly established NDRC Interagency Working Group); NDRC Most Impacted and Distressed counties; NDRC Declared counties; Tribal Areas within HUD NDRC Most Impacted and Distressed and Declared counties; potential non-governmental organization partners; and the general public. The NDRC Interagency Working Group brings substantial capacity and technical expertise to bear. Areas of expertise include planning and coastal planning; Brownfield redevelopment; economic revitalization (Department of State (DOS)); environmental science and planning (Department of Environmental Conservation (DEC)); utilities (New York Power Authority (NYPA), New York State Energy Research and Development Authority (NYSERDA), Environmental Facilities Corporation (EFC)); economic development and capital projects management (Empire State Development Corporation (ESDC)); emergency management and hazard mitigation (Division of Homeland Security and Emergency Services (DHSES)); and transportation (Department of Transportation (DOT), Metropolitan Transportation Authority (MTA), Port Authority of New York and New Jersey (PANYNJ)). Like GOSR, many of these agencies have experience in data analysis; community engagement; design and engineering; and delivering large, complex projects across multiple jurisdictions.

In addition to extensively collaborating with state agencies in this Phase 1 application, GOSR has extensive experience working with state agency partners in its day-to-day recovery and rebuilding work. For example, GOSR partners with DHSES to deliver resilient recovery projects through the Federal Emergency Management Agency Public Assistance (PA) program and Hazard Mitigation Grant Program (HMGP). All funds through these programs in the State are disbursed through DHSES. In many cases, GOSR partners with DHSES to provide local

match funding using CDBG-DR funds both for projects implemented by state agencies and for projects implemented by local governments and non-profit organizations. Examples of such projects include the Bay Park Sewage Treatment Plant in Nassau County—one of the largest PA project in FEMA’s history—and the HMGP funded DOT effort to improve the resiliency of 105 bridges around New York State.

Both GOSR and its parent agency, New York State Homes and Community Renewal (HCR), have extensive experience working with civil rights and fair housing issues including data analysis and HUD reporting to address racial or economic disparities. Should the State advance to Phase 2 of the NDRC, GOSR may develop formal partnerships with non-governmental organizations to advance recovery and resiliency partnerships, and to address issues of equity and environmental and social justice, especially as it relates to vulnerable populations. Exhibit E (pages 56-61) and Attachment D (pages 96-111) have additional information on stakeholder consultation.

GOSR and its partner agencies have extensive experience in area-wide and comprehensive planning, which has informed the systems-based approach to resilient recovery outlined in this application. GOSR’s NYRCR Program included a planning phase that entailed the development of 66 community resiliency plans through an innovative participatory process. That effort was accomplished through the extensive contributions of the DOS’s Office of Planning and Development, which has experience in the fields of coastal and riverine planning and has worked to develop models for planning which incorporate rigorous, science-based predictions of the effects of climate change such as sea-level rise. In addition to DOS’s work, under New York State’s Community Risk and Resiliency Act (CRRA), DEC is developing richer estimates of sea-level rise, improving the State’s ability to assess and address possible future

conditions and risks and reducing uncertainty around “known unknowns.” As noted in Exhibit D (pages 48-49), the New York State Resiliency Institute for Storms and Emergencies (RISE) is also working with GOSR throughout the Agency’s rebuilding and recovery efforts to provide data-driven predictive models and data for the Agency.

GOSR and its partner agencies are extremely experienced in innovating and implementing cutting-edge resilience design. For instance, the State’s two Rebuild by Design projects are prime examples of innovative resilience design thinking incorporating the needs of riverine and coastal communities living with water. In the projects’ development stages, GOSR worked closely with and advised both design teams and GOSR is leading the implementation of both of these innovative projects.

GOSR is also experienced in performing cost- and price-analyses to determine the cost-reasonableness and cost-benefit ratio of projects and actions in compliance with federal regulations. Many NDRC Interagency Working Group members are also familiar with different forms of cost-benefit analysis, including the FEMA and Federal Department of Transportation Benefit Cost Analyses (DHSES, DOT, MTA, PANYNJ).

The state agency partnerships discussed in detail here augment the capacity already evident in GOSR actions to introduce resiliency measures at a local, regional, and State level.

Community Engagement Capacity

In addition to maintaining and cultivating productive relationships with state agencies, GOSR has significant capacity and experience in community engagement. The Agency has placed particular emphasis on engaging State residents in its recovery and rebuilding efforts, with a strong focus on those most impacted by past disasters and those most vulnerable to future threats. The New York State Citizen Participation Plan (CPP) sets the framework for public

engagement in the planning, implementation, and assessment of the State’s CDBG-DR recovery program. The State’s CPP seeks to engage low- and moderate-income individuals, individuals with limited English proficiency, and the elderly. Moreover, in addition to the community stakeholder engagement that informs all of the agency’s efforts, two of GOSR’s programs were specifically designed to directly engage community members in storm impacted localities in their recovery, rebuilding, and resilience: the NYRCR Program and the Rebuild by Design Program. These efforts offer replicable and scalable engagement and consultation models; they have already created extensive stakeholder networks that can be leveraged in the development and implementation of NDRC projects when the time comes.

The NYRCR Program encompasses 124 communities across the State with more than 600 New Yorkers representing their communities by serving on Planning Committees. There were over 600 Planning Committee meetings held throughout the program, and an additional 250 public engagement meetings that attracted thousands of community members. Planning Committee members also conducted outreach to populations traditionally under-represented in community planning processes, from immigrant populations to high school students. Planning Committee members made presentations at senior housing complexes, religious gatherings, schools, and at chambers of commerce. As projects in the communities begin to be developed, this high level of public outreach will continue, at both at the Planning Committee level and at the broader public level.

A broad-based public engagement process was also integral in developing the State’s two Rebuild by Design projects: *Living with the Bay* in Nassau County and *Living Breakwaters* in Staten Island. As outlined in Action Plan Amendment 8, the State plans to continue this level of engagement as the projects move into development.

GOSR's state agency partners bolster GOSR's capacity to engage stakeholders by bringing additional subject matter expertise, regional perspectives, and connections to on-the-ground organizations.

In accordance with the requirements of the NDRC NOFA, GOSR held a 15-day public comment period, including the hosting of one public hearing which took place on March 16, 2015. In accordance with the NOFA, GOSR published parts of this application on GOSR's website with an associated online comment/feedback form to allow for prompt responses. In addition, GOSR provided hard copies free of charge to anyone requesting one via email, phone, and/or TTY. In publicizing the comment period and associated hearing, GOSR utilized both formal and informal networks (e.g. legal notices in various media, and via email) to notify stakeholders about the opportunity to comment. GOSR has addressed and incorporated, as appropriate, all relevant feedback into the State's final Phase 1 application submission.

Should the State be invited to continue to Phase 2, GOSR's approach to stakeholder involvement in its Phase 2 application will be consistent with the inclusive and extensive approach taken throughout the recovery and rebuilding process to date and through the Phase 1 application process. Stakeholder feedback is not only solicited at key points in GOSR's process (e.g. during a public comment period for the State's Action Plan), but also given informally, on a day-to-day basis (e.g. homeowners contacting the Housing Program and the Housing Program responding or conducting a survey of homeowners), as well as through programs designed with public participation at their forefront (i.e. the NYRCR Program and Rebuild by Design). The State will provide opportunities for the public to be directly engaged in its Phase 2 application including online and in-person public comment opportunities. The State is considering holding public information sessions on its Phase 2 application prior to the public comment period. The

objective of these meetings would be to solicit additional feedback from communities in shaping the State’s application and ensuring that it is responsive to the needs of populations recovering from past disasters and vulnerable to future threats, including those resulting from climate change. These events will also be a continuation of the State’s ongoing efforts to identify and quantify remaining unmet needs associated with the qualified disasters.

Should the State’s NDRC projects move into implementation, in-depth public participation will be similarly sought. This approach is consistent with GOSR’s plans for public engagement in its existing programs. For example, the State’s Action Plan Eight (APA8) outlined a robust CPP for the implementation of its two Rebuild by Design projects, including the establishment of a Citizens Advisory Council, additional public meetings, and online components. GOSR is also developing a replicable and scalable menu of options to continue its in-depth model of community involvement into the NYRCR project implementation process; GOSR will look to this menu as any proposed NDRC projects move into implementation.

Through its NYRCR Program, GOSR has extensive experience working with and empowering formal and informal community leaders in the planning and execution of resilient recovery and rebuilding projects; including those from vulnerable populations. Members of the NYRCR Program’s Planning Committees were identified by GOSR staff and other stakeholders and included leaders in civic associations, business groups, non-profits, and members of vulnerable populations. Committee members were iteratively chosen with an eye toward creating Committees representative of the community as a whole, and issues of geography, diversity, and the necessity to ensure the participation of historically disengaged groups. Throughout the planning process, NYRCR Program staff worked with each Planning Committee member on a continual basis. Planning Committees in each community were responsible for developing the

community’s NYRCR Plan, which details recovery and resilience projects geared towards the community’s needs. The Planning Committees also exemplify the State’s ability to harmonize the contributions of diverse stakeholders in the consultation process.

Regional or Multi-Governmental Capacity

In the NDRC and in its ongoing recovery and rebuilding work, the State plans to address threats and hazards faced by riverine and coastal communities at a regional, multi-layered level. For example, as highlighted in APA8, some of the State’s wastewater-treatment infrastructure is unprepared to handle severe storms. This inability results in negative impacts in the municipality in which the infrastructure is located. It also causes environmental degradation in the waterways of nearby municipalities: during severe weather events, nitrogen from wastewater treatment plants runs into, and pollutes, State waterways. This environmental degradation can lead to a loss of natural resiliency, which further threatens communities. The State’s Department of Environmental Conservation compellingly demonstrates this in “Nitrogen Pollution and Adverse Impacts on Resilient Tidal Marshlands”:

Excessive eutrophication due to nitrogen loadings cause marsh grass along tidal creeks and bay coasts to initially become greener and grow taller in a manner similar to the effects of fertilizing a lawn. The tall marsh grasses, however, produce fewer roots [. . .]. The poorly rooted grasses eventually grow too tall and then fall over, thereby destabilizing the creek-edge and bay-edge marsh, causing it to slump and exposing soils to erosive forces. The destabilization [. . .] makes these areas much more susceptible to the constant tugging and pulling of waves, accelerating erosion and the ultimate loss of stabilizing vegetation. This process results in the loss of the naturally resilient coastal barrier marshes—a barrier that

protects shoreline communities from major storm surges and wave action along coastal areas.⁸

As described above, *only* committing to a local solution— addressing the infrastructure need *without* undertaking environmental cleanup and additional coastal protection for shoreline communities *or* adding protection to shoreline communities but not addressing the infrastructure needs—would ignore the complexity and interrelatedness of the problem.

Understanding the necessity and value of regional collaboration for the NDRC, the State has consulted with both the City of New York and the State of New Jersey to develop this Phase 1 application. The City and State of New York maintain a critically productive working relationship in the administration of recovery programs. In particular, the City is a subrecipient to the State and will work with local NYRCR Planning Committees to implement several projects developed through the NYRCR Program. The State and City also coordinate closely to ensure alignment of the State’s Acquisition for Redevelopment program. The City’s Phase 1 application approach to serve vulnerable coastal communities throughout the five boroughs aligns with the State’s larger approach to ensure the development of resilient built and natural systems throughout the State.

The State will continue to coordinate with the City of New York and State of New Jersey to advance synergistic Phase 2 approaches that may include the advancement of specific projects, partnerships, or funding schemes.

⁸ “Nitrogen Pollution and Adverse Impacts on Resilient Tidal Marshlands. NYS DEC Technical Briefing Summary.” NYS DEC. April 22, 2014. (2.)

There are many benefits to developing comprehensive regional solutions rather than siloed, one-off solutions. Regional solutions protect more people, are often more practical, and may prove to be more cost effective for the State, all of which are co-benefits. Importantly, regional solutions respond to negative externalities often ignored by one-off solutions. Addressing these externalities will help to combat inequality, as externalities, like pollution, often impact those most socially and economically vulnerable.

There are many examples of best practices in regional thinking. One of these is New York State's Regional Economic Development Councils (REDCs). The State's ten REDCs are comprised of local public, private, and academic experts working in a particular region. Each REDC creates an economic development plan and implementation agenda that emphasizes the economic strengths of the area. Each REDC applies for project funding through the Consolidated Funding Application (CFA). The CFA now features scoring components to reward the inclusion of resilience measures in a grant application. GOSR has worked with REDCs to secure additional funding for projects highlighted in NYRCR Plans. Thus far, 24 NYRCR projects will receive more than \$11.6 million in funding, across six REDCs: Mohawk Valley, Southern Tier, Mid-Hudson, Capital District, North Country, and Long Island.

As directed by HUD, at this stage in the application process, the State is not proposing specific projects. However, in addition to GOSR, there are many state agencies as well as inter-state agencies, such as the NDRC Interagency Working Group, that are extremely capable leaders in developing and implementing regional approaches to resilience.

Exhibit D Need
New York State
ExhibitDNeed_NYS.pdf

Narrative Summary

On October 29, 2012, the largest storm in New York’s recorded history swept ashore. Superstorm Sandy’s impact was devastating, causing widespread damage to residents, homes, businesses, core infrastructure, government property, and an economy just recovering from the recent financial crisis. Fourteen counties were declared Federal Disaster Areas. Two million utility customers lost power, with some blackouts lasting up to three weeks. The storm damaged or destroyed more than 164,342 housing units, affected or closed over 2,000 miles of roads, produced catastrophic flooding in subways and tunnels, and damaged major power transmission systems.

Superstorm Sandy’s impact was particularly tragic coming on the heels of Hurricane Irene and Tropical Storm Lee, which in 2011 devastated many communities in upstate New York’s Catskill, Adirondack, and Hudson Valley regions, and caused severe damage on Long Island. Tens of thousands of homes incurred damage in these three storms, and many were destroyed by flood waters and wind. Businesses and infrastructure suffered substantial damage as well. Appendix B of the NDRC NOFA outlines disaster declarations by county and declaration type for all storms between 2011 and 2013.

In addition to the widespread and deep destruction, the storms of 2011 through 2013 left a realization of New York State’s vulnerability to the interrelated effects of climate change and extreme weather. The State has responded to the destruction caused by these events with an extensive recovery and rebuilding response, detailed in Exhibit C (pages 31-33). However, as Exhibit B makes clear (pages 12-29), there are remaining unmet recovery needs across the State. In Action Plan Amendment Eight (APA8), the State has calculated \$17.80 billion in unmet recovery needs statewide, and that State’s NDRC-specific analysis identified economic

revitalization, infrastructure, or housing unmet recovery needs in the following 11 counties designated by HUD as Most Impacted and Distressed: Greene, Nassau, Schoharie, Suffolk, Tioga, Westchester, and the five counties of New York City. As the State continues its recovery and rebuilding, it will pursue a systems-based approach to address the effects of climate change induced floods on riverine and coastal communities. GOSR’s systems-based approach outlined in this Phase 1 application hinges upon identifying strategies that will simultaneously improve the physical, social, economic, and environment resilience of these communities. As discussed further below, a comprehensive and science-based risk approach has been—and will continue to be—central to New York State’s identification and implementation of recovery and rebuilding projects and programs.

Threats, Hazards, Vulnerabilities

New York State is focusing on the effects of flooding in riverine and coastal communities caused or exacerbated by climate change. These threats, hazards, and vulnerabilities arise from both shocks (one-time events) and stressors (continued events). In both instances, they often have broad, impacts that cross jurisdictional boundaries and so must be addressed with systems-based, regional solutions.

These threats, hazards and vulnerabilities were found through a series of analyses initiated in the wake of Superstorm Sandy and in preparation for this Phase 1 NDRC application:

- The Governor’s Office of Storm Recovery (GOSR) conducted significant outreach—detailed in Exhibit E (56-61) and Attachment D (pages 96-111)—to New York’s counties, state agencies, and other stakeholders to better shape its understanding of vulnerabilities for this Phase 1 NDRC application.

- GOSR’s NY Rising Community Reconstruction (NYRCR) Program formed and supported citizen Planning Committees through an intensive, months-long recovery and resiliency planning process culminating in 66 NYRCR Plans. This grassroots program helped shape the State’s understanding of hazards, risks, and vulnerabilities.
- The New York State Department of State (DOS) developed a risk analysis tool for use in the NYRCR Program. The DOS model incorporates predictions of sea level rise and the probability of different storm hazard levels, and analyzes the likelihood that an infrastructure asset will be exposed to various levels of storm hazards in the one-hundred year planning time frame. NYRCR Plans posted for public review on the GOSR website illustrate the model’s utility in a wide range of project and program settings.
- In Action Plan Amendment Eight (APA8), GOSR revisited the State’s unmet recovery needs analysis. The concentration of the State’s needs in coastal and riverine communities has helped shape this application’s approach, and the specific types of needs identified will help to guide project development should the State advance to Phase 2 of the NDRC. Following HUD’s CDBG-DR Allocation Methodology as published in the Federal Register Notice FR-5696-N-11, the State estimated approximately \$5.68 billion in unmet needs to repair and mitigate the State’s housing, business, and infrastructure as a result of the covered disasters. If HUD’s high construction cost multiplier is factored in, unmet needs are estimated at \$6.85 billion, reflecting the likelihood that reconstruction costs

will be higher in New York State than elsewhere in the United States.⁹ The State’s additional analysis methodology, which incorporates infrastructure needs that may not be eligible for CDBG-DR funding, estimates approximately \$17.8 billion in outstanding recovery and mitigation needs not currently funded by federal programs (if the HUD construction cost multiplier is applied to housing and small business).

Residents and businesses that have been subjected to repetitive flooding are most directly impacted by the threats discussed above, although the impacts of catastrophic flooding—including social and economic impacts—have adversely affected entire communities and, in fact, the entirety of New York State. As is discussed below, a significant number of low- and moderate-income (LMI) individuals have been affected by past disasters in New York State. LMI communities and otherwise vulnerable populations face increasingly severe physical, social, economic, and environmental impacts of coastal and riverine flooding.

Best Available Data

GOSR has utilized federal government data from the Federal Emergency Management Agency (FEMA), Small Business Administration (SBA), Federal Transit Administration (FTA), Federal Highway Administration (FHWA), U.S. Army Corps of Engineers (USACE), U.S. Department of Agriculture (USDA), and others. These data are the basis of funding allocations provided by HUD. However, as HUD asserts in the NOFA, some of these data sources are now

⁹ Federal Register Notice (FR-5696-N-11) indicates that HUD employs a high construction cost multiplier in its updated CDBG-DR allocation methodology. In the case of New York State, housing and small business unmet needs are multiplied by a factor of 1.44.

out of date. As a result, the State has supplemented these data with other data detailing both the impact of recent disasters on New York’s communities and the future impact of climate change on the State.

To utilize the best available data as required by the NOFA, the State has used the analysis detailed above, as well as relied on the following data-driven efforts in developing its systems-based approach to resiliency:

- Following Superstorm Sandy, New York State launched a series of blue-ribbon panels to study the State’s vulnerabilities, including the New York State (NYS) 2100 Commission¹⁰, the NYS Ready Commission¹¹, and the NYS Respond Commission¹². These panels, staffed by top-experts, studied challenges and made proposals to increase the resiliency of the State.
- The New York State Hazard Mitigation Plan, which includes a risk-assessment characterizing and analyzing risks and hazard facing the State to help guide investments in mitigation measures, was updated in 2014 to focus on the most prominent 15 natural hazards, including climate change, coastal erosion, extreme temperatures, flood, hurricane, and land subsidence/expansive soils.
- The New York State Resiliency Institute for Storms and Emergencies (RISE), a consortium of New York’s higher education institutions, which act as a hub for

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<http://www.governor.ny.gov/sites/governor.ny.gov/files/archive/assets/documents/NYS2100.pdf>

¹¹ <http://programs.governor.ny.gov/NYSReadyCommission>

¹² <http://programs.governor.ny.gov/NYSRespondCommission>

cutting-edge research on climate science, storm preparedness, and mitigation, developed a science-based comprehensive risk analysis with support from GOSR to guide the State in determining which infrastructure projects to implement. RISE scientists analyzed forecasts of coastal and inland flooding from storm surge and sea level rise and severe weather events, and used advanced climate models to predict sea level rise and future storm intensity.

Comprehensive Risk Approach to Analyzing Need

New York State has faced, and continues to face, the threat of severe coastal and riverine flooding as a result of sea-level rise and increasingly frequent extreme weather events, both linked to climate change. GOSR has utilized scientific projections of climate change, alongside analysis of demographic and economic trends, to identify and focus on the threats facing the State's most vulnerable communities. Some of those efforts, although not an exhaustive list, are detailed in this Exhibit. These studies indicate that New York State is at a very high risk of continued exposure to coastal and riverine flooding.

While the science-based predictive models employed by the State have demonstrated that sea-level rise and increasingly frequent extreme weather will continue to pose major threats, the extent to which each of these conditions will increase over time is not known with certainty. While some of the impacts of these conditions on communities—specifically, flooding and flooding-related impacts—are well known, the full scope of the impacts of these threats over time is unknown. A critical element of the State's systems-based approach will be continuing to utilize rigorously and methodologically sound approaches, like those developed by RISE, to resolve these unanswered questions.

Insurance

It is difficult to capture with certainty the number of buildings and improvements in the State that are un-insured or under-insured against flooding and other risks associated with sea level rise and increased incidence of extreme weather events. According to FEMA's *Region II Hurricane Season Fact Sheet—Summer 2012*, as of summer 2012, there were 84,758 flood-insurance policies in high-risk areas in the State. The number of structures and other improvements in the State likely exceeds this number by some margin. The universe of uninsured buildings and improvements includes those that are not required to carry flood insurance: residential and commercial buildings without mortgages, public buildings that have never benefited from federal disaster assistance, and structures that are not eligible for flood insurance coverage. It also includes structures which must, under federal law, be insured and which are uninsured and out of compliance, either because the owner is unaware of the requirement or unable to afford coverage.

It is also difficult to estimate with any certainty the number of structures that require flood insurance because they have received federal disaster assistance, but are uninsured. That said, of the 1,534 applicants that received CDBG-DR assistance for either Hurricane Irene or Tropical Storm Lee, 935 sought assistance for damage connected to Superstorm Sandy—and 186, or roughly 20 percent, were deemed non-complaint with their flood-insurance requirement. This number may or not be reflective of the larger universe of (FEMA-IA) recipients, from Irene, Lee, or other Declared Disaster events statewide, who are required to carry flood insurance but may not.

Insurance can play an important role in a systems-based approach to resiliency by protecting against those residual risks that cannot be eliminated through adaptive grey and green flood protection, environmental remediation, elevations, buyouts, etc. The shortfall in flood

insurance in high-risk areas has limited and will limit the resiliency of the State’s communities because it inhibits the ability to rebuild quickly after an event.

The primary factor limiting the purchase and maintenance of flood insurance, both by those who are required to carry it and those who otherwise should, is cost. Elevation, flood proofing, and community participation in the Community Rating System may reduce those costs and encourage higher levels of participation. These activities, and others that reduce the risk to communities, are part of New York’s systems-based resiliency approach.

Benefits of Addressing Threats and Hazards Related to Vulnerabilities

As detailed above, New York’s recent analysis, conducted as part of APA8, revealed significant unmet recovery needs in the areas of housing, economic revitalization, and infrastructure in the State’s coastal and riverine communities. The State’s systems-based approach is focused on resiliency efforts that will be closely integrated into recovery investments in these sectors to ensure a long-term resilient recovery.

The State has made, and will continue to make, significant investments in the recovery of communities affected by coastal and riverine flooding. Where possible, these recovery investments are supplemented by efforts to build back better, with allowances for resiliency measures, including flood-proofing and elevation. Additional investments in resiliency supported by the NDRC could help to further protect these existing investments, and also to support and sustain the ongoing social and economic recovery of impacted communities.

Current Risks to Vulnerable Populations

The most severe impacts of coastal and riverine flooding are often felt by already-vulnerable communities and individuals: with low- and moderate-income, limited English proficiency, functional needs, the elderly, or the isolated—often individuals and communities

that have fewer resources to cope with stresses and shocks. Analysis conducted as part of the APA8 unmet needs analysis found that low- and moderate-income households were significantly impacted by the Qualified Disasters. This was particularly true of renters; the State estimated that over 74.5% of all rental units impacted by the storms were occupied by low- and moderate-income households. For rental units with major to severe damage the low- and moderate-income household proportion was 74%. Understanding the significant impact that disasters have on this population, the State will continue to utilize recovery resources to strengthen this population's resilience.

Functional Needs

The State firmly believes that any systems-based resiliency strategy should focus on delivering solutions that benefit those with functional needs. For instance, many homeowners impacted by the storms and living in the 100-year floodplain are pursuing resiliency measures such as home elevation, the use of flood resistant materials, bulkhead repairs, and other construction techniques that mitigate the impacts of future flooding. The State has worked together with FEMA as well as with public housing authorities throughout the recovery process, and will continue to engage these stakeholders as a commitment to meeting functional needs.

Opportunities and Existing Conditions in Current and Future Rebuilding and Recovery Work

New York State has already taken the opportunity to address the vulnerabilities profiled above through programming current and future investments in a way that will increase resiliency and foster economic revitalization in vulnerable communities. Examples include the NYRCR Program, which incorporated grassroots, community-driven planning; the Community Risk and Resiliency Act (CRRA), which requires state agencies to take climate change into account in their permitting and programming decisions and which calls upon state agencies to develop sea-

level rise projections and model laws to help local governments incorporate resiliency into their local decision-making; and the Regional Economic Development Councils' Consolidated Funding Application, through which the State has allocated grant funding, including economic development funding, to resiliency projects in storm-affected communities.

Building upon this work, the NDRC represents an opportunity for the State to further operationalize resiliency and to continue to develop its systematic approach to resiliency by proposing solutions that will simultaneously protect communities from the physical impacts of flooding, while generating social, environmental, and economic co-benefits.

Many of New York's communities are clustered on the coast or on the banks of rivers and streams. The impacts of coastal and riverine flooding threaten not only the health and well-being of State's communities, but also the State's overall economy. The New York State Energy Research and Development Authority's *ClimAID* report, published in 2011, estimated that the economic impact of climate change to the State, without adaptation, will rise to \$3.8-7.5 billion annually by the middle of this century.¹³

As discussed in Exhibit C (pages 40-41), environmental degradation—specifically, nitrogen loading—adversely affects coastal and riverine ecosystems and exacerbates vulnerability to flooding. The State has already made significant efforts to address nitrogen loading, including improvements to wastewater treatment facilities on Long Island in the wake of

¹³ Leichenko, Robin, David C. Major, Katie Johnson, Lesley Patrick, and Megan O'Grady. "An Economic Analysis of Climate Change Impacts and Adaptions in New York State." *ClimAID Annex III* from *Responding to Climate Change in New York State*. NYSERDA. <
<http://www.nyserda.ny.gov/climaid>>.

Superstorm Sandy, but further efforts are necessary. Mitigating levels of nitrogen in New York’s coastal and riverine ecosystems will be a critical element of the State’s systems-based approach to resiliency.

New York State’s significant ongoing efforts to recover from the impacts of coastal and riverine flooding are detailed throughout this application, in particular in Exhibit G (pages 74-77). They include significant investments of state and federal funds, and statutory and regulatory mechanisms intended to guide state and local decision-making to reduce vulnerability. The extraordinary scale of New York’s vulnerability to coastal and riverine flooding means that the State must continue to develop systems-based strategies that leverage all available resources and generate the maximum benefits relative to investment. Should the State advance to Phase 2 of the NDRC, GOSR and its partners will advance projects that will help bridge this gap.

Exhibit E Soundness of Approach
New York State
ExhibitESoundApp_NYS.pdf

Consultation

Since its inception, the Governor’s Office of Storm Recovery (GOSR) has been committed to ensuring that all impacted populations are aware of, and given the opportunity to participate in, the State’s recovery and resilience programs. GOSR continues to leverage an expansive website platform; an integrated social media presence; traditional media in local, regional, and national markets; briefings with elected officials, municipal partners, and community advocacy groups; large scale public hearings; and frequent technical assistance sessions with program applicants and project implementation partners. As such, GOSR has established robust formal and informal stakeholder networks across sectors, needs, and geographies, which the State will leverage and build upon in Phase 2 of the NDRC. These stakeholder networks have been engaged throughout the recovery process, and the State has proactively consulted with a targeted subset of these networks for the development of the Phase 1 NDRC application. As discussed in Exhibit C, the NY Rising Community Reconstruction (NYRCR) Program has developed an extensive community stakeholder network, both through its Planning Committees and public engagement events (pages 33-40). This Program presents a scalable, replicable model for the deep systematic engagement of all community stakeholders as well as vulnerable populations. In addition, the NY Rising Infrastructure Program has held over 100 technical assistance meetings in ten months for FEMA-Public Assistance funds. The NY Rising Housing Recovery Program has established a strong partnership with the Long Island Housing Partners, which conducts case-referrals, outreach, and case-specific coordination with Social Services Block Grant (SSBG) funded Disaster Case Management firms, and also encompasses subrecipient agreements with pro-bono legal firms who provide support to vulnerable homeowners in need of special assistance in the rebuilding process. Also outlined in

Exhibit C (pages 36-40), these outreach efforts align with the State’s Citizen Participation Plan (CPP), which endeavors to provide citizens with an opportunity to participate in the planning, implementation, and assessment of the State’s CDBG-DR recovery programs.

The Phase 1 Framing Phase of this application, which constitutes a rigorous unmet recovery needs analysis, necessitates the targeted engagement of key stakeholders poised to contribute appropriate data and to identify funding sources, partnerships, and strategies that can be leveraged and developed in Phase 2.

For the express purpose of preparing this Phase 1 NDRC application, GOSR rolled out a targeted strategy to engage the following stakeholder groups: 1) the City of New York and State of New Jersey, 2) select state agencies, 3) NDRC Most Impacted and Distressed counties, 4) NDRC Declared counties, 5) Tribal Areas within NDRC Most Impacted and Distressed and Declared counties, 6) potential non-governmental organization partners, and 7) the general public.

As discussed in Exhibit C (page 41), the State has consulted with both the City of New York and the State of New Jersey to develop this Phase 1 application. All three parties participated in several calls to discuss and refine respective application approaches to ensure they are regional in scope and synergistic in nature. The City and State of New York maintain a critically productive working relationship in the administration of recovery programs. In particular, the City is a subrecipient to the State and will work with local NYRCR Planning Committees to implement several projects developed through the NYRCR Program. The State and City also coordinate closely to ensure the alignment of the State’s Acquisition for Redevelopment program. The City’s Phase 1 application approach to serve vulnerable coastal

communities throughout the five boroughs aligns with the State’s larger approach to ensure the development of resilient built and natural systems throughout the State.

The State will continue to coordinate with the City of New York and State of New Jersey to advance synergistic Phase 2 approaches that may include the advancement of specific projects, partnerships, or funding schemes. The City and State are in active consultation with the PANYNJ and the MTA to explore unique opportunities for cooperation on strategic resilience initiatives. In addition, the State of New York, City of New York, and State of New Jersey will continue to work together to ensure the successful administration of ongoing recovery programs.

In early January 2015 , GOSR convened senior staff from the key agencies outlined in Attachment D (pages 96-101) to participate in a NDRC Interagency Working Group to develop the State’s overall strategy for this Phase 1 NDRC application. GOSR then charged agencies with completing a detailed survey to identify data to document unmet recovery needs, existing funding sources, potential partnerships, and potential strategies (i.e. project concepts and programs) to further refine in the Phase 2 NDRC application.

GOSR convened two separate webinars in early 2015 —one for Most Impacted and Distressed counties and one for Declared counties—to brief senior county staff on the two-phased NDRC application. Tribal Areas located in these counties were also invited to participate in the appropriate webinar. GOSR then asked participating counties and Tribal Areas to complete a detailed survey to identify data to document unmet recovery needs, existing funding sources, potential partnerships, and potential strategies (i.e. project concepts and programs) to further refine in the Phase 2 NDRC application. Declared counties were also asked to provide sub-county specific data to document Most Impacted and/or Distressed characteristics.

GOSR continues to leverage and build upon the dynamic stakeholder networks established in the development and implementation of the State’s various recovery programs. For this NDRC Phase 1 application, GOSR engaged in ad hoc consultations with various non-governmental organizations (NGOs). The State may choose to engage a cross-section of NGOs as formal partners in Phase 2 application development. The NGOs engaged would depend upon the programmatic focus of the State’s Phase 2 application.

To inform the public about the NDRC, the GOSR homepage provides a comprehensive list of NDRC Frequently Asked Questions and a link to the HUD Exchange NDRC page, along with an email address to which interested parties can submit questions.

The State will continue to coordinate with the City of New York and State of New Jersey to advance synergistic Phase 2 approaches that may include the advancement of specific projects, partnerships, or funding schemes. The City and State are in active consultation with the Port Authority of New York and New Jersey (PANYNJ) and the Metropolitan Transportation Authority (MTA) to explore unique opportunities for cooperation on strategic resiliency initiatives. In addition, the State of New York, City of New York, and State of New Jersey will continue to work together to ensure the successful administration of ongoing recovery programs.

Secondly, GOSR will formally reengage state agencies, eligible counties, and Tribal Areas, as appropriate, in the identification and enhancement of strategies to be developed in Phase 2. Select agencies and counties have already provided substantial input regarding potential strategies, partnerships, and funding sources. GOSR will continue to work with eligible target areas throughout the Phase 2 application process to demonstrate additional unmet recovery needs by examining new data and revisiting existing data, as appropriate.

Thirdly, GOSR will utilize existing relationships with NGOs—from advocacy groups to academic institutions to philanthropic foundations—to champion or create resilience strategies, additional partnerships, and funding and/or financing mechanisms in Phase 2. Whether these relationships were established through the State’s ongoing recovery programs, or specifically for the NDRC, NGOs will play an invaluable role in ensuring the development and implementation of truly transformative projects that will dramatically enhance the resilience of a region. Moreover, NGOs will assist in the essential engagement of vulnerable populations.

GOSR’s Phase 1 strategy builds upon GOSR’s Action Plan Amendment Eight (APA8), detailed in Exhibit B (page 6-7). Vulnerable populations, identified through APA8 and other outreach strategies, will be more directly engaged in Phase 2, as the application moves from a systematic unmet recovery needs “framing” analysis to a project refinement and “implementation” process with which beneficiaries and the greater public can engage more directly. GOSR’s direct engagement of eligible Tribal Areas, as well as partnerships with advocacy groups, represent the consideration of the needs of vulnerable populations in the development of this proposal. Consultations with these key stakeholders have deeply informed the systems-based approach to resilience outlined in this Phase 1 application. In particular, expert input from the New York State (NYS) Department of State (DOS), NYS Department of Environmental Conservation (DEC), and others has highlighted the cumulative impacts of coastal and riverine flooding—caused and exacerbated by climate change—on vulnerable populations and ecosystems. As discussed in Exhibit C (pages 40-41), the State is committed to advancing nature-based interventions, while simultaneously advancing critical upgrades to wastewater treatment facilities and sewer infrastructure that will reduce nitrogen loading and therefore safeguard investments in green infrastructure. Potential strategies, partnerships, and

funding sources identified by partners in Phase 1 will bear fruit in Phase 2, and the State is well-positioned to develop, implement, evaluate, and scale impactful resilience solutions.

Idea(s) or Concept(s)

State's Approach

New York State is looking to create regional, systems-based solutions for recovery and long-term resilience in riverine and coastal communities. The State's concept addresses environmental degradation risks in these communities. The NDRC presents an opportunity for the State to build upon and learn from its ongoing investments in long-term resilient recovery, acknowledging new and newly-understood risks and opportunities. Seizing this opportunity, the State endeavors to value, integrate, and operationalize a holistic approach to resilience in program and project development, implementation, and evaluation. This approach aims to realize a vision of physically, socially, economically, and environmentally resilient communities with access to fortified, integrated infrastructure; cutting-edge educational and business development opportunities; stronger and more resilient housing; and healthy, publically-accessible ecosystems. The State endeavors to engage partners across sectors to create scalable, systems-focused solutions to catalyze recovery and resiliency in vulnerable riverine and coastal communities. This approach aims to advance planning processes, programs, and capital projects that deliver multiple co-benefits, fostering systems that can most quickly respond to, and most effectively rebound from, severe weather events and other emergencies.

For the purposes of this Phase 1 application, GOSR has synthesized lessons learned from its recovery efforts to identify two dominant community typologies—coastal and riverine—which face extreme risk from severe flooding and climate change in the form of more frequent extreme weather events, increased precipitation, storm surge, sea level rise, and other factors.

While the communities in each of these two categories share many characteristics, they also face an array of unique challenges depending on geography and socioeconomics. Moreover, some communities, like those along the Hudson River, are vulnerable to both coastal and riverine flooding.

Should the State advance to Phase 2, GOSR will undertake a multi-systems analysis to better define the characteristics common to coastal and riverine community risk profiles. The State will then select pilot communities and work with partners to co-create innovative resilience solutions that are responsive to context and build upon GOSR’s experience. The ultimate goal is to develop, implement, evaluate, and scale projects that provide multiple co-benefits and improve everyday quality of life through cross-sector collaboration. Evidenced by the incorporation of resilience factors in the State’s funding and permitting processes discussed in Exhibit F (page 72), the State is beginning to operationalize resilience in tangible ways and NDRC funding will empower the State to leverage existing resilience efforts—and to catalyze new ones.

The State’s two Rebuild by Design projects demonstrate the approach the State is proposing: true resilience in riverine and coastal communities necessitates a multi-jurisdictional, systems-based, regionally-directed, holistic outlook squarely focused on both protecting vulnerable populations and acknowledging the need to live with water and embrace nature-based features. These projects address multiple unmet recovery needs and provide an array of co-benefits to catalyze longer term recovery, mitigate risk, protect existing recovery investments, and improve everyday quality of life. Other precedential projects that correspond to the State’s vision of resilience include:

- The Red Hook Integrated Flood Protection System in Brooklyn, which is an example of a City-State partnership to advance innovative large-scale infrastructure to protect and transform a vulnerable coastal community;
- The NY Rising Buyout Program’s effort at Oakwood Beach, Staten Island, where an entire coastal neighborhood is being bought out and replaced with publicly accessible natural buffers to reduce the impact of future storms on surrounding areas and create new social, economic, and ecological opportunities; and
- The buyout and affordable housing project proposed by the Sidney Planning Committee’s NY Rising Community Reconstruction (NYRCR) Plan, which is being implemented through the NYRCR Program and with FEMA HMGP funds, and involves buying out a vulnerable riverine neighborhood, converting that portion of the floodplain to green infrastructure, and building a new mixed-use neighborhood, including affordable housing, outside of the floodplain.

While these are excellent examples of systems-based, integrated resilience projects, New York State’s analysis, detailed throughout this Phase 1 application, indicates the importance of pairing these solutions with environmental remediation efforts to reduce nitrogen loading in bodies of water, which can undermine investments in green infrastructure and compound vulnerability.

The State’s approach builds upon lessons learned in New York’s ongoing recovery, strives to protect the State’s existing assets, including its storm recovery investments. GOSR is working with partner agencies and counties to incorporate the unmet need of coastal and riverine communities and is open to adapting the approaches should the State advance to Phase 2. New York State is seeking to augment its existing actions, ensuring the long-term benefits of the

State’s existing recovery investments. This holistic, systems-based approach addresses physical, economic, and social resilience risks that would otherwise not be met.

New York State has made recovery investments setting the region on the path toward building back smarter and more resilient. GOSR’s recovery programs in housing, infrastructure, small business development, and community reconstruction go beyond recovery activities that would return damaged communities to pre-disaster conditions—and instead implement activities that address disaster-related impacts and leave communities sustainably positioned to meet the needs of their post-disaster populations and to further prospects of growth.

New York State already has in place tools to ensure that its projects will be feasible and effective at supporting resilience. For example, the State utilizes cost-benefit analyses, risk analyses, and meetings with stakeholders. Should the State advance into Phase 2, it is expected that it will use these tools, and others.

Co-Benefits

This systems-based approach to recovery inherently creates co-benefits. Protecting riverine and coastal communities at risk of flooding creates or retains a strong social sphere, which ensures healthy community members and considers the needs of future generations; protects the environmental sphere, which creates a diverse ecological system that performs life-sustaining functions and provides essential resources for humans and other species; and ensures a healthy and diverse economy which adapts to change, provides long-term security to residents, and recognizes social and ecological limits. These spheres can appear separate from one another but they are intimately related.

As the State moves into implementation of its large-scale infrastructure projects, the State has developed and will continue to exemplify the general administrative and technical capacities

discussed in Phase 2 of the Capacity Factor, including procurement, contract management, rapid program design and launch, management of project design, and green (nature-based) infrastructure planning and implementation.

Vulnerable Populations

The impacts of climate change affect all New Yorkers, but those with low- and moderate-income, limited English proficiency, functional needs, the elderly, and the isolated, are often disproportionately burdened. In addition, small businesses often have less of an ability to recover. The holistic approach the State is pursuing not only knits together multiple spheres of recovery and rebuilding, it also seeks to address the specific challenges faced by these individuals and small businesses.

Working Regionally

The State's approach looks beyond traditional administrative boundaries and the minimum required geography, benefiting adjacent communities and the region at large. The State's work is extensively detailed earlier in this Exhibit, and includes consultation with both the City of New York and the State of New Jersey to develop this Phase 1 application. In addition, GOSR has consulted with counties across New York State on this application specifically, and has worked with counties in the agency's other recovery and rebuilding projects. State agencies are also central to this application as well as to GOSR's broader work. Finally, interstate agencies such as the PANYNJ and the MTA have been key to this application's development.

Adjacent areas will be positively impacted by the State's proposed regional approach as negative externalities that may go ignored in a more traditional, non-regional approach will be addressed. However, one drawback of regional approaches is that they may be more complicated

to pursue. Despite this, the State has successfully pursued a regional approach throughout its previous recovery and rebuilding work and continues to have the capacity to pursue this type of approach, as is clearly shown in Exhibit C (pages 30-42).

In addition, the State realizes that to fully address resilience, its approach must capitalize on the tremendous interdependencies among sectors. For example, connecting communities to public transportation is tied to economic opportunities for the community.

New York State's Overall Approach to Resilience

New York State's approach to resilience through GOSR's comprehensive recovery and rebuilding programs, as well as through other State agency's initiatives is to conserve and develop systems that can most quickly respond to, and most effectively rebound from, severe weather events and other emergencies. As discussed in Exhibit D (page 48), the State's Hazard Mitigation Plan informs the State's approach to analyzing need by identifying natural, technological, and human-caused hazards that have impacted, or have the potential to impact, the State. It then focuses on 15 natural hazards considered most likely to affect New York residents. The State also boasts the second greatest total number of U.S. Green Building Council Leadership in Energy and Environmental Design certified projects, second only to California.

In addition, many of the State's target areas and storm-impacted communities have demonstrated a commitment to community resilience, including ten communities within in the New York City metro area that participate in the National Flood Insurance Program Community Rating System (CRS). Seven of these communities are included in the Most Impacted and Distressed counties referenced in this application and this competition may provide an opportunity for New York State to encourage more communities to participate in the CRS.

Exhibit F Leverage
New York State
ExhibitFLeverage_NYS.pdf

Outcomes

The Governor’s Office of Storm Recovery (GOSR) has focused its attention in Phase 1 of the NDRC application on assessing needs and developing an approach to resilience and will develop specific project concepts in Phase 2. Nonetheless, on the basis of GOSR’s experience in developing and implementing recovery and resiliency projects, it is possible to forecast general outcomes of a systemic approach to resilience with solutions with multiple co-benefits, including but not limited to environmental restoration and economic revitalization. Prior to the State’s advancement to Phase 2, it is not possible to determine what the State’s final NDRC programs or projects will be, nor is it possible to determine if the proposed NDRC programs or projects will require a large-scale up-front effort or an ongoing program or initiative. Regardless, GOSR has the capacity and experience to stand up a large project and also to support a long-term program either directly or through partners.

GOSR’s entire approach is focused on the development of solutions that will physically protect communities while providing social, economic, and environmental co-benefits—maximizing outcomes for the State’s vulnerable communities. GOSR has extensive experience in delivering these types of integrated resiliency projects yielding multiple co-benefits. Precedent examples include the two Rebuild by Design projects GOSR is implementing in Staten Island and Nassau County, which have the potential to integrate protective engineered and green infrastructure to mitigate flood risk, improve water quality, restore ecosystems, reconnect communities to a revitalized waterfront, and advance social resilience through education and training opportunities.

Environmental and Social Sustainability Outcomes

The systems-based approach to resilience outlined in this Phase 1 application is intended to reduce the environmental and social vulnerability of communities that are also at risk from sea level rise and other impacts of climate change. This reflects the recognition that true resilience must incorporate a holistic understanding of both risk and vulnerability.

As described in Exhibit E (pages 61-64), one of the core concepts in the State’s approach is the idea that environmental remediation and restoration—most prominently the reduction of nitrogen loading and other pollutants in both coastal and riverine communities—can produce outcomes that will not only increase the environmental well-being of communities, but also reduce physical risk from flooding connected to climate change. Positive environmental outcomes—which reinforce related economic and social outcomes—are therefore at the heart of GOSR’s approach. Social resilience is also a critical part of GOSR’s strategy. Through extensive grassroots participation in the NY Rising Community Reconstruction (NYRCCR) Program, GOSR has documented how communities relied on both formal and informal institutions and assets at the most local levels to coordinate their recoveries after the Presidentially Declared disasters. Traditionally disinvested areas that are also at risk of flooding and other impacts of climate change therefore face magnified challenges. GOSR will work to develop projects that will produce social resilience outcomes by building community capacity and institutions in socially vulnerable places. Economic development outcomes in socially vulnerable communities may also reduce blight and increase employment among Section 3 persons and business concerns.

Measures of Success

A successful project developed using GOSR’s integrated, systems-based approach will produce environmental benefits, increase the social resilience of vulnerable communities and populations, and contribute to economic development, while also protecting lives and property

from the physical impacts of disasters. A successful project will also leverage existing and potential commitments of outside resources, and will magnify the regional impact of existing or proposed projects. Project-level metrics of success will be developed in Phase 2 of the NDRC application process.

Leverage

Local and Regional Partners and Resources

Since its inception, GOSR has been working collaboratively with many different partners at the local and regional scales including governments, state agencies, non-governmental organization, foundations, and private-sector organizations. Through the NY Rising Community Reconstruction (NYRCR) Program, GOSR has entered into subrecipient agreements with local governments and state agencies to implement projects on behalf of GOSR. As of February 10, 2015, GOSR has executed a total of 53 subrecipient agreements to facilitate the implementation of projects developed by NYRCR Planning Committees. To reflect the grassroots, community-driven nature of the NYRCR Planning Process, the State seeks to empower the most local level of governments to implement projects and programs and to build grant management capacity with extensive technical assistance provided by GOSR. A list of potential funding and financing resources can be found in Attachment B (pages 83-89).

Risk Considerations and Insurance

GOSR has engaged with non-profits and private-sector organizations in the fields of insurance, sustainable finance, social impact investing, and innovative finance about opportunities to collaborate to leverage the impact of GOSR's investment and maximize the resilience of New York State. Areas of conversation have included: leveraging the reduction in insurance premiums that may result from resilience investments; catastrophe bonds and other

disaster-risk financing mechanisms; leveraging Community Reinvestment Act capital¹⁴ in vulnerable communities to increase resilience; and opportunities for cooperation with Community Development Financial Institutions to provide capital resources and technical assistance to vulnerable communities.

Co-Benefits, Cost Savings, and Impacts on Public Funding

GOSR’s system-based approach to resilience will provide tangible co-benefits—in some cases manifesting as cost-savings to third parties, including but not limited to insurance and financial institutions. In instances where investments generate third-party savings, there may be opportunities to provide co-funding opportunities for firms to invest in their community’s resilience. In some cases, private investment may displace public funding, which could then be reallocated. Strategic investments in well-designed green and grey infrastructure may reduce costs related to disaster-related disruptions to the flow of goods and services, environmental

¹⁴ The Community Reinvestment Act is intended to encourage depository institutions to help meet the credit needs of the communities in which they operate, including low- and moderate-income neighborhoods, consistent with safe and sound operations. It was enacted by the Congress in 1977 (12 U.S.C. 2901) and is implemented by Regulation BB (12 CFR 228). The regulation was substantially revised in May 1995 and updated again in August 2005. The CRA requires that each depository institution's record in helping meet the credit needs of its entire community be evaluated by the appropriate federal financial supervisory agency periodically. Members of the public may submit comments on a bank’s performance. Comments will be taken into consideration during the next CRA examination. A bank's CRA performance record is taken into account in considering an institution's application for deposit facilities.

remediation, healthcare, and project operation and maintenance. Such investments can also create workforce development opportunities, increase property values and tax bases, and ultimately reduce the amount of federal disaster recover aid needed in the future.

Commitments Extending Approach beyond Most Impacted and Distressed Areas

As part of Governor Cuomo’s transformative plan to improve the State’s economic development model, the Regional Economic Development Council Consolidated Funding Application (CFA) was created to serve as the single entry point for access to economic development funding. This streamlined model now features scoring components to reward the inclusion of resilience measures in a grant application. This scoring methodology, along with the implementation of the Community Risk and Resiliency Act (discussed in Exhibit D, pages 52-53), serve to powerfully align the State’s funding streams with a focus on creating a stronger, more resilient New York State. The State’s programming of Hazard Mitigation Grant Program funding, which may be used statewide, is also intended to realize a systems-based approach to resilience as described in this application. As these steps demonstrate, the State has already begun to operationalize resilience.

Committed Leverage Resources

No financial commitments have been obtained at this time. However, as highlighted in Exhibit C (pages 33-36), the State has engaged in extensive partner outreach and highlighted the requirement that any partnership will include the need to leverage resources other than those secured through the NDRC.

Exhibit G Long-Term Commitment
New York State
ExhibitGLTCommit_NYS.pdf

New York State has taken significant steps to bolster its resilience to a host of threats, hazards, and vulnerabilities. The State’s broad array of measures includes, but is not limited to, the creation of the Governor’s Office of Storm Recovery (GOSR) to coordinate the State’s resilient recovery, the passage of the Community Risk and Resiliency Act (CRRA, discussed in Exhibit D, pages 52-53), and the modification of the State’s Regional Economic Development Council Consolidated Funding Application process to prioritize resilience (discussed in Exhibit F, page 72). Furthermore, the previously-discussed NYS Ready Commission, NYS Respond Commission, and NYS 2100 Commission recommended various approaches to operationalizing resilience in the State’s policy-making and project implementation. (See Exhibit D for additional detail, page 48.)

Several other major resilience efforts have been undertaken by state agencies, all of which are represented on the State’s NDRC Interagency Working Group. These efforts include, but are not limited to, the following:

- The Metropolitan Transportation Authority (MTA) and Port Authority of New York and New Jersey (PANYNJ): Superstorm Sandy caused almost over \$7 billion in damage to the MTA and PANYNJ’s transportation networks and revealed serious vulnerabilities to region’s economy. Hardening and ensuring the reliability of the transportation system is critical for coastal and riverine communities throughout the region. For instance:
 - The lack of network resiliency or transportation options can reduce regional mobility and hinder economic growth; if one transportation link is broken due to extreme weather, it is critical that other options are available. Both agencies are promoting state-of-the-art Intelligent

Transportation Systems to allow for effective and coordinated coastal storm response plans for each transportation provider by allowing systems to work together.

- The effects of salt from sea water continue to be seen in the form of electrical fires, failure of components, and equipment, and degradation of critical structures. While emergency repairs continue on an as-needed basis, the long-term effects and solutions to remediate and mitigate salt inundation continues to be unmet. A “Salt Working Group”—consisting of PANYNJ, MTA, City of New York, Con Edison of New York, Public Service Electric & Gas, New Jersey Transit, Amtrak, United Laboratories (UL), the National Electrical Manufacturers Association, Department of Homeland Security – Science & Technology, and the State of New York Division of Homeland Security & Emergency Services—is analyzing the on-going effects of sea salt on regional transportation and utility infrastructure, and the potential solutions to remediate and mitigate.
- The New York State Energy Research Development Authority (NYSERDA) has several programs to promote resilience. These include the Cleaner, Greener Communities program, which provides funding for regional sustainability planning and projects, and NY Prize, a first-in-the-nation \$40 million competition to help communities create microgrids, where are standalone energy systems that can operate independently in the event of a power outage.
- The New York State Department of Transportation (DOT) is leveraging FEMA HMGP funds to increase the resilience of New York’s bridges. Additionally,

guided by the NYS 2100 Commission, DOT has focused its capital investments to ensure that future risks are mitigated to the greatest extent possible.

- The New York State Department of State (DOS) Office of Planning and Development provides technical support to GOSR’s NY Rising Community Reconstruction Program. The Local Waterfront Revitalization Program assists local communities in revising local coastal policies to advance planning for storm and climate resilience. DOS will also play a central role in the implementation of CRRA, collaborating with the New York State Department of Environmental Conservation (DEC) to prepare model local laws to help communities incorporate measures related to physical climate risk, and to provide guidance on the implementation of CRRA, including the use of resiliency measures that utilize natural resources and natural processes to reduce risk.
- The Office of Parks Recreation and Historic Preservation (OPRHP) has incorporated the goal of resilience into its planning and activities, and employs strategies that focus on building living shorelines, using green infrastructure, and implementing sustainable practices. OPRHP is in the process of identifying facilities and infrastructure in state parks and historic sites that are highly vulnerable to flooding and damage from coastal storms. This assessment will incorporate impacts on the built and natural environment and will enable the creation of park-specific adaptation plans that minimize or mitigate the negative impacts of climate change.
- The Environmental Facilities Corporation (EFC) is leveraging its programs to encourage resiliency projects that protect future water infrastructure investments,

including drinking water and waste water treatment, pump stations, sewers, storm sewers, green infrastructure, water mains, outfalls, and intake and collection systems. For instance, EFC creates the State Revolving Fund for clean water and drinking water projects including the Storm Mitigation Loan Program and the Hurricane Emergency Loan Program and has also been working with Suffolk County to develop a program to address inadequate individual onsite treatment systems (septic systems).

- DEC’s Office of Climate Change leads the development of programs and policies that mitigate greenhouse gas emissions and adapt to climate change where it cannot be avoided. The Climate Smart Communities program supports local governments in meeting these goals. As described above, DEC will work with DOS to implement CRRA.
- The New York State Division of Homeland Security and Emergency Services (DHSES) delivers resilient recovery projects through the Hazard Mitigation Grant Program (HMGP). To date, DHSES has approved \$366 million in FEMA HMGP fund for Sandy projects.

Goal Outcomes and Metrics

GOSR’s recovery and rebuilding goals are twofold: (1) address urgent housing, business assistance and infrastructure needs in affected communities and (2) integrate long-term storm resiliency into recovery, rebuilding and planning efforts across all programs. As detailed in GOSR’s two year report, *New York Rising: 2012-2014*, the Agency has made significant progress towards these goals. For example, as of October 2014, 1,798 applicants have opted for one or more of GOSR’s housing resilience options (elevation, mitigation or bulkhead). In

addition, the Agency has granted \$20.8 million to 638 small businesses, enabling 6,490 positions to be retained at businesses receiving assistance.¹⁵

Due to the number and diversity of the climate change mitigation and adaptation efforts described above, and the number of different agencies involved, it is not possible to specify baseline and goal outcomes for each individual program. If New York State advances to Phase 2 of the NDRC, the State will develop a general set of performance metrics (value of property protected, impact on employment, environmental remediation, etc.), as well as baseline targets and goals for projects and programs that are proposed through the NDRC.

¹⁵ *New York Rising: 2012-2014 Housing, Small Business, Community Reconstruction Plans, Infrastructure*. New York State Governor’s Office of Storm Recovery. <
http://stormrecovery.ny.gov/sites/default/files/uploads/gosr_report_letter_full_high.pdf>.