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Staten Island's North Shore Community Resiliency Assessment Memorandum

This memorandum will speak about the concerns residents and businesses have in reference to sea level rising, storm surges and flooding on the North Shore of Staten Island, New York. Being that we are experiencing extreme weather conditions now this is no longer a situation that we feel that we can afford to take a wait and see approach on as the events are already happening.

Since Hurricane Sandy almost three years ago, the North Shore Waterfront Conservancy has discussed the need for increasing resiliency with the residents, businesses, and public officials in the Environmental Justice Communities on Staten Island's North Shore. The general consensus is thus far the City's response to climate change events has been inconsistent, especially when it comes to acknowledging that water rises and floods on all sides of Staten Island, making many businesses and/or residential communities vulnerable to the effects of sea level rising, storm surges and flooding.

The City's recent decision to undertake a design and planning study of an integrated flood protection system on Staten Island's North Shore is an important opportunity to address these concerns and the public's perception. We cannot emphasize enough that this is a time sensitive matter and that the businesses and residential communities are only as safe as the next nor'easter and or hurricanes as outside of Arlington Marsh's 80 acre tidal wetland, there are no resiliency buffers that are sufficient enough to protect Staten Island's North Shore waterfront communities. This is a situation that even though residents may not be talking about in general conversation, they are nonetheless keenly aware of it on some level.

NSWC has taken the lead in identifying issues in this report, that we feel will enable the city and their consultants to move faster toward identifying possible solutions. We look forward to discussing these with the City as it launches its study.

Coastal Flooding/ Sea Level Rising:

Since many of us were in our homes and only a few of the North Shore residents have actual view points of the Narrows, Kill Van Kull, lower Newark Bay and the Arthur Kill. Keep in mind that before the night that Hurricane Sandy hit none of the North Shore residents had ever heard of zone A. In addition most of the maps showing inundation areas are too small to be able see any identifiable land marks or street names.

The entire North Shore of Staten Island is vulnerable to coastal flooding. In particular, North Shore communities of Rosebank, Stapleton, West Brighton, Port Richmond, Elm Park, and Arlington have low lying areas that are extremely vulnerable to coastal flooding. While Fort Wadsworth, sections of Clifton, Tompkinsville and St. George, New Brighton, and Mariners Harbor are generally at a higher elevation and not as vulnerable. However, these communities mentioned for having higher points of elevation also have low lying areas. Therefore any treatment to eliminate coastal flooding must be done in a unified manner that makes the coastal protections congruent.

The City study should take the following actions:

- It would be useful for the City to have film or even a model of what flood prone areas look like during storm surges when they hit land, preferably densely populated areas.
- The City should provide detailed maps (on line and in hard copy) to acquaint residents with what the new zones are and to zoom in on inundation points so that residents can see land marks and or street names in order that they can identify how close they are to those areas and which way they will need to go to evacuate.
- The City should work with television and other media outlets in ensuring that the public sees film and/or visual models showing inundation points and nearby landmarks and or street names.

Storm water Management:

If the next hurricanes are as predicted the North Shore will be in serious trouble especially if there are heavy rains and high winds involved. Staten Island's North Shore's drainage system is at least 100 years old. Catch basins often become full and or blocked are useless in dealing with storm water runoff. There are also areas that have no sewers or catch basins and dependent on streets and curbs to move the storm water. This causes the streets to become flooded and the water to jump the curb and flood sidewalks and nearby properties. In densely populated areas where development has brought a lot of impervious surfaces leaving no place for rain to go, it has ended up in basements as it goes downhill during major rain events such Hurricane Irene.

Staten Island has more fresh water and tidal wetlands than any other borough in New York City and in dealing with storm water management, we need to begin recognizing and enhancing the value of the fresh water wetlands in protecting existing communities.

NSWC has asked many times over that NYS DEC review its mapping of wetlands and to decrease the size of the wetlands' protection mandate in order to capture more of them in their mapping so that the fresh water wetlands can continue to be used as rain/snow runoff points. Currently in order for a fresh water wetland to be mapped and protected it has to be no less than 12.4 acres. With the antiquated storm water system that we are currently operating under we need every last one of the existing wetlands even though they are privately owned to help with protecting existing communities.

In addition because we are on a Combine Sewer Overflow system the Port Richmond DEP Sewer Treatment Plant easily becomes overwhelmed during rain storms and closes the water gates to the plant allowing the runoff and household waste to go directly into the Kill Van Kull. This plant located on Richmond Terrace is in a low line area and was flooded during Hurricane Sandy although it never went off line.

- The City should assess the contribution made by all existing freshwater wetlands and other public and private green spaces and retain storm water and reducing flooding. It should identify ways and means to ensure that flooding in communities is not made worse by allowing permitting for development of wetlands less than 12.4 acres.

- The City should assess the benefits of acquiring easements and/or to purchasing private properties with wetlands for storm water management similar to Mid Island Blue Belt system.
- The City should identify means of capturing and redirecting surface runoff through green infrastructure practices so that storm water can be filtered, treated and released before causing overflows in the combined sewer system or separate storm sewers.

Coastal Erosion:

The entire North Shore of Staten Island is suffering from severe coastal erosion and it is our understanding that unless the area had a bulkhead at one time NYS DEC will not allow for any new development to take place in the water. The North Shore waterfront has a gap tooth smile where there are properties with bulkheads sitting next to properties that don't have any resiliency buffers. As we have documented in the NSWCSUCRA Power Point Presentation on resiliency. Therefore when storm surges happen the properties without any protections become the access points to flooding the properties with a bulkhead from the sides and rear of the property. Most of the businesses on the waterfront are willing to allow their properties to go under water and allow for the insurance companies to take care of any damages.

Quite a few of the properties that are not resilient to climate change are City owned and have not been maintained by the agencies that they are under DCAS, SBS, EDC as these agencies state that they do not have the resources to maintain these waterfront properties. In addition many of these properties have never been tested for contaminants. Something that we feel should be a matter of ownership, if you own the property then at the very least a Phase 1 and 2 report should be done on the properties before coming up with a plan of action to what to do next with them especially if these properties are within a few feet of a water source and residential communities.

- The City should assess the importance of consistent action across individual waterfront properties on flood protection for the whole community. The City should develop a long term strategy across property lines in particular looking at its own management practices of its own shore lines. The City should consider the possibilities of taking immediate action even if it is for a short term solution to shore up City waterfront properties. And have businesses waterfront properties enter into an agreement to shore up their properties, all of this should be done in a unified way even it is through a mandate from the City and State. The waterfront properties on Staten Island's North Shore are quickly eroding and in order to prevent further erosion and loss of land and adjacent property damages. A short or even medium term shore up solution must be implemented. The City and State need to coordinate that these needed shore line improvements can be permitted by the state.
- In addition the DEP & DEC should come up with permitting strategies to allow consistency in the building of bulkheads, berms, or soft shore natural areas in order that they provide protections for adjacent properties and the residential communities that are behind the waterfront properties.

- The City should have Phase 1 and Phase 2 reports done on all City Owned waterfront properties in order that they are aware of any contamination issues as well as the community.
- These properties should be assessed to see if they can be used to help with storm water management and/or Resiliency efforts.

Parks and Public Access:

North Shore waterfront communities have far less park space than any place else in this borough. We also have a denser population that are in need of active recreational space and waterfront access. In dealing with climate change issues we should combine the need for more active recreational space with that of waterfront access and resiliency and develop waterfront recreational areas that do both along the North Shore.

Making our waterfront parks also parks that combat sea level rising, storm surges, flooding with their design is an innovative idea whose time has come. We need to expand our parks and enhance our tidal wetlands. For example by expanding Faber Park west to the Bayonne Bridge for the purposes of active recreational space and resiliency protection for the 10,000 residents that live near this area of the waterfront. <http://www.nycgovparks.org/parks/faber-pool-and-park/history>

The North Shore tidal wetlands require break berms and break waters to slow down the wakes and tides as they come in, in order to protect them. These berms and break waters can be designed to be natural habitats for oysters and other shellfish. They can be developed as protected access points along the waterfront for direct people contact such as fishing, kayaking and swimming near the shore line.

At the time of a nor'easter or hurricane, these locations can become sea walls to help with the protecting of the communities behind them, perhaps by using water resistant features or removable Flood Controls: <http://floodcontrolam.com/>

- The City should work with Trust for Public Lands to purchase the private properties from Faber Park and Pool to the Bayonne Bridge for open active recreational uses as well as for Climate Change Resiliency buffers to protect the flood prone waterfront communities from the Kill Van Kull.
- The City should assess the opportunity to create berms and breakwaters to reduce erosion of vulnerable wetlands at Arlington Marsh and elsewhere, create additional habitat, and enable public access.

Brownfield Remediation:

Due to Staten Island's North Shore being an industrial waterfront most of the properties have legacy contaminants and therefore they must be tested and remediated. It is essential that full remediation take place and not partial remediation where contaminants are left behind. The reason being is that during storm surges partial remediation are encapsulated in vapor barriers, black top, and or cement and those capping(s) can be damaged or cracked releasing the contaminants into the water/environment and exposing residents to harm.

<http://www.nyc.gov/html/oer/html/brownfield-incentive-grants/big.shtml>

Residents are aware of the contaminants on the waterfront and that many of the contaminants at the waterfront can cause cancer or neurological disorders, therefore they want full remediation of these properties where exposure to these toxins are no longer an issue.

http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Staten%20Island/12CBCP032R/2013-06-24.12CBCP032R.Devon_Self_Storage.RAR.pdf

Some properties that may have been capped are now an issue because they are adjoined to City owned waterfront properties that have not been maintained and are badly eroding. Such as the case with the West Brighton, North Shore rail line and the Con Edison parking lot that was formerly a power plant location. Due to severe erosion of the City property it has now compromised the Con Edison property allowing for the water from the Kill Van Kull to go underneath the capping causing breaks and sink holes.

- When dealing with waterfront properties seeking grant assistance the Office of Environmental Remediation must require full remediation of the waterfront properties in order to guarantee residents the most basic level of safety from possible exposure to hazardous materials/contaminants.
- The City's Resiliency plan should account for flooding that will carry contaminants from waterfront properties to nearby residential communities. Proposed flood controls should be coordinated with the policies and actions recommended by BOA, NYS DEC and U.S. EPA to address mitigation of contaminants.

Industrial Practices:

Environmental Justice Communities on the North Shore need to see tangible improvements to the quality of life for their communities and the people that are living in them. There are some industrial businesses that are willing to make the necessary changes to their operations that would be helpful to the environmental justice communities that are behind them, given the risk of flooding and other climate change impacts. And there are some industrial businesses that are unwilling because they fear it will be more expensive for them to upgrade and or make operational changes. Due to the lack of significant space and opportunities to create buffers, some businesses have few choices if they are going to remain on the North Shore waterfront in proximity to residential properties.

- The City should assess opportunities for working with businesses to improve operations so that nearby residents are protected from activities, especially given the risk of flooding and climate change impacts.
- Given limited space and options for many of these businesses, the City should mandate the relocation of some industrial businesses to Staten Island's West Shore that are M3 and M2 and require space and buffers between their operations and nearby residential communities. The City should then replace these M3 and M2 businesses with businesses that are more self-contained in their operation and conducive to being in proximity to the waterfront and residential waterfront communities.

Coordination between City Agencies:

The environment is ever changing and in order for humans to continue to live on this planet we must change as well and become more aware of what our limitations are. Including how our activities have a direct impact on humans, communities and the environment that sustains us. It is essential that all conversations involving these communities are done in an open and honest manner. As these are the

communities who will receive the greatest impact and therefore the greatest risk when it comes to safety.

It is not to say that the government is not working on solutions, however, the efforts are not connected and so as one project is taking place it is literally undermine the actions of another project. There is no oversight to make sure that everyone understands what the end goal is and to make sure that all of the agencies and people are all working together to make sure that they meet the end goal. Residents are seeing lots of unorganized activities with most of it having little to do with providing them with safety from Climate Change issues. In short there is no leadership involving this issue.

At the same time, the City does not take ownership for any of the events that they encourage by allowing permits and activities to take place in areas that have no resiliency measures in effect. This is making living on or near the waterfront a buyer beware situation in terms of exposure to contaminants via climate change issues. Or living near a fresh water wetland that is only looked at by developers as an opportunity to build a big box store or more housing because it may or may not fall under the NYS DEC mapping policy. For example: Nicholas Estates, built on 3 fresh water wetlands, 9.5 acres and directly across the street from 3 contaminated flood prone properties including the Archer Daniels Midland Manhattan Project (radioactive) Storage Site. <http://nicholasavenueestates.com/>

- The City needs to do a better job of coordinating their resiliency efforts and that of other agencies at various levels so that the resiliency work that is being done is functional and therefore is sustainable.
- The City should develop a mechanism by which it can reference likely climate change impacts. For example, understanding how a fresh water wetland is actually protecting an existing community by keeping it from being flooded and therefore should not be developed.

Social Resiliency Awareness:

Because residents in Environmental Justice Communities will be directly impacted by Climate Change and they have the least amount of resources to deal with the negative outcomes. It is essential that the people of these communities participate in a meaningful way in the resiliency development of their communities from the beginning, through the middle and to the end of the process.

- The City has to do a better job of engaging and listening to the residents of the Environmental Justice Communities and acting on their recommendations. Because they are speaking from experiences of living in the community and observing the environmental outcomes.

Conclusion:

When you live on an island you need to have that kind of leeway in your policies to help to protect existing communities.

People are waiting for the City to live up to the leadership role that it claims it has in dealing with climate change. But that residents have seen little of in terms of action. Everything that is happening is happening because of the lack of action to mitigate poor practices and policies.

Residents are beyond venting their frustration at meetings. They want to see tangibles in terms of actions. Tell us what you have and we'll tell you whether or not we think it will work. With this being said residents are anxious to see what the City will bring before them and out of those plans what will be implemented.

References:

NSWC's "Staten Island's Gold Coast: 5.2 miles from St. George to Arlington"

NSWC's "Shore Up: Community Resiliency and Adaptation Project Power Point Presentation"

U.S. Department of Energy's Legacy Department:

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Is Bayonne Bridge Project Unearthing Harmful Radiation? By Scott Marlow

<http://bayonnelocal.com/uranium-still-contaminates-kill-van-kull-gateway-to-port-elizabeth/>

Dr. Nicholas K. Coch; <http://grist.org/cities/nyc-hurricane-expert-sandy-wasnt-the-big-one/>

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