Questionnaire – Jamaica Bay New York

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- Your participation is absolutely voluntary and you may stop at any time.
- The survey will take approximately 25 minutes of your time to complete.
- You will not be individually identified and your responses will be used for statistical purposes only.
- If you have questions about your rights as a participant in this survey, or are dissatisfied at any time with any aspect of the survey, you may contact {*Contact person*}.

Public reporting burden for this collection of information is estimated to average 25 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other suggestions for reducing this burden to Peter Wiley, NOAA Office for Coastal Management 1315 East-West Highway, Silver Spring, MD 20910 (Peter.Wiley@noaa.gov, 301- 563-1141).

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[Introductory text]

In October of 2012, Hurricane Sandy inflicted significant damage and loss of life along the eastern seaboard of the U.S. One of the areas significantly affected was the **Jamaica Bay** area of New York City.

Since Hurricane Sandy, there has been an active debate on the best ways to protect areas such as Jamaica Bay from storms like Sandy. One possible approach involves building sea walls (or flood walls) and other "hard" structures that shield buildings and infrastructure from storm surge and strong waves caused by coastal storms. This is often referred to as "**shoreline armoring**." A second approach is to foster the growth of natural features, such as dunes and marshes, that will also protect coastal areas, while also providing habitat as well recreational opportunities for people. This approach is sometimes referred to as "**living shorelines**." The two options are not necessarily mutually exclusive, and the two can be combined as part of a region-wide strategy. Furthermore, some specific locations are better suited for one approach rather than the other for various reasons. In many cases and at some locations, however, decision-makers will need to choose between the two options.

The purpose of this survey is to help NOAA better understand how and why people value the different shoreline protection options. In what follows, we'll provide some information on the pros and cons of each approach and then ask you a series of questions, including a question that asks about your willingness to pay for both types of storm protection.

As you are probably aware, significant work is underway to restore Jamaica Bay from the impacts of Sandy. The New York Rising Community Reconstruction Program was established to provide rebuilding and revitalization assistance to New York communities severely damaged by Hurricanes Sandy and Irene and Tropical Storm Lee. Under this program, local communities in Jamaica Bay (e.g., Broad Channel, East Rockaway, West Rockaway, Far Rockaway, and Breezy Point) have identified a number of projects to increase their resiliency to coastal storms and sea level rise. Some of these projects involve building sea walls and others involve restoration or establishment of dunes and marshes. In addition to the work being funded by NY State and NYC, the Federal government (U.S. Army Corps of Engineers, National Parks Service, etc.) are also working to build storm protection and resiliency measures.

Although much work is either underway or planned, there is still much to be done to protect Jamaica Bay and other parts of NYC from future storms and climatic changes (?) and a good deal of thought has been given to what types of protective measures should be used. There are many options being considered, some of which involve **shoreline armoring** and some of which involve **living shorelines**.

The goal of this survey is to collect information from people like you to assist in better decision-making. We are interested in what you think of different storm protection options and the value you place on that protection.

The choice between **shoreline armoring** and **living shorelines** is not a simple one; each offers pros and cons relative to the other. The following table describes some of these pros and cons for sea walls (a form of armoring) and two types of living shoreline approaches, dunes and salt marshes.

	Armoring – Building sea and flood walls	Living shorelines – Creating and maintaining dunes	Living shorelines –Creating and maintaining salt marshes
Amount of protection from storms	A sea wall offers significant protection from a storm. A sea wall repels most coastal storm waves which protects structures from damage. They can be designed to withstand certain storm "levels" (e.g., a 5-foot storm surge or a 50-year storm).	Dunes slow waves down and, if large enough, repel the waves. Large waves can wash over dunes and strong waves can wash away large dunes (as happened along the New Jersey shoreline during Sandy).	Salt marshes contain strong grasses that absorb storm waves. Whereas height is important for sea walls and dunes, the important feature of marshes are width.. The wider the marsh, the more protection it offers.
Time it takes to get to full protection	Once it is installed, a sea wall offers immediate protection from coastal storms.	Dunes can be built in a few months and offer immediate protection from storms.	Salt marshes require two - four years before they reach the maximum amount of protection.
Longevity of protection	Over time, a sea wall will deteriorate and require maintenance and, eventually, replacement.	In the absence of storm such as Sandy, a dune will last for decades, offering protection over time. As we saw during Sandy, however, dunes can be wholly or partly washed away by large coastal storms.	Once established, a marsh will offer protection from storms. With sea level rise, however, marshes can deteriorate over time and become less effective.
Beach erosion	Sea walls located in front of beaches will cause the beach to erode as waves bounce off of the wall and take sand with them back into the ocean.	Dunes will protect beaches from erosion by absorbing wave energy and providing sand from the dune itself to beaches to replace sand that is washed out to sea.	Salt marshes can also help reduce beach erosion by absorbing wave energy that would otherwise erode nearby beaches.
Aesthetics (how nice the structure or feature looks)	Sea walls are just that, a wall, and are not necessarily pleasing to look at.	Some may consider dunes more pleasant to look at compared to sea walls, but large dunes (which offer more storm protection) can block views of the ocean.	Some may consider salt marshes more pleasant to look at.
Benefits besides storm protection	None	Dunes provide habitat for birds and other wildlife. Dunes also provide recreational opportunities such as wild-life watching and beach-going to people.	Marshes provides habitat for birds, shellfish, and other wildlife. They provide spawning grounds for commercially important fish. Also, marshes offer recreational opportunities such as wildlife watching.

[Survey questions]

1. **How familiar are you with Jamaica Bay?**
   __ Very familiar
   __ Somewhat familiar
   __ Not very familiar
   __ Have never heard of it

2. **Do you live in Jamaica Bay?**
   __ Yes – Go to 4
   __ No – Go to 3.

3. **How frequently do you visit Jamaica Bay?**
   __ Very often
   __ Often
   __ Sometimes
   __ Rarely
   __ Never

4. In the previous 12 months, how many trips did you take to the Jamaica Bay area for the purpose of recreation or relaxation?
   _____ trips

5. **Were you living in the New York/New Jersey area during Hurricane Sandy?**
   __ Yes
   __ No

6. **How would you describe the impact that Sandy on you?**
   __ Very significant
   __ Moderate impact
   __ Small impact
   __ No impact at all

7. **In order to help us assess where you live in relation to Jamaica Bay, please provide your ZIP code?**
   _ _ _ _ _

[Instructions prior to valuation question]

The results of this survey are *advisory*. In other words, they can be used to inform policymakers on the opinions and preferences of people such as yourself about different types of coastal protection measures. To provide information to policymakers, we will ask you to vote on different options that involve **shoreline armoring** and **living shoreline** coastal protection measures. We'll describe each option and the potential benefits of the option in terms of number of homes/buildings protected, habitat provided, and recreation opportunities. These options will ask you to compare and choose amongst shoreline armoring and living shoreline projects (or to choose "no additional action"). These projects are *not* currently proposed projects or ones that are being considered at this time. In fact, we have kept the details general to focus on the trade-off between **shoreline armoring** and **living shoreline** options. In other words, the options we present are illustrative examples rather than specific projects.

Importantly, we'll also be asking whether you'd be willing to incur additional tax dollars to fund these coastal protection measures. As a voting taxpayer, you have an opportunity provide feedback to policymakers regarding your support for – and willingness to pay for – coastal protection projects. Naturally, one alternative is to not invest in additional coastal protection, in which case no public money will be needed. If, however, the public values coastal protection, the results of this survey may be used to assess public preferences and how much people are willing to pay. This information may influence financing decisions, which can affect taxation policies.

Please think about your budget and keep in mind other things you might spend your money on instead of the project. Honestly assess the tradeoffs of supporting a proposed project and not supporting it.

There is no right or wrong answer. We have found some people would support these kinds of projects and others would not support them. Both kinds of voters have good reasons for why they would vote one way or the other.

8. **The table below provides two potential coastal protection options, the potential benefits from those options, and the associated cost to taxpayers. You can choose to vote for one of the two option or choose neither one (i.e., the "no further action" option).**
{Note to reviewer: Options for the blanks bullets appear at the table at the end of the survey. During implementation, values will be inserted into the table for the respondent to select from.}

Category	No further action	Option A	Option B
Shoreline armoring	• Do not install additional bulkheads	•	•
Living shorelines	• Do not install additional living shorelines	•	•
Habitat	• No additional improvements to habitats in the Bay besides the current ongoing efforts.	•	•
Recreation	• No additional improvements to recreation in the Bay besides the current ongoing efforts.	•	•
Cost	$0	$____	$_____
Vote	•	•	•

9. **When voting, what expectations, if any, did you have about how <u>others</u> might vote?**
   ___ I thought most people would vote for the no additional action option.
   ___ I thought most people would vote for Option A.
   ___ I thought most people would vote for Option B.
   ___ I didn't really think about it.

10. **How likely do you think it is that the results of <u>this survey</u> will shape the direction of future policy in Jamaica Bay?**
   ___ Very likely
   ___ Somewhat likely
   ___ Somewhat unlikely
   ___ Very unlikely
   ___ I don't know.

11. **[Ask only if answer to Q8 is a "no additional action" vote] You chose to vote neither Option A nor Option B on the referendum. What was your reasoning?**
   ___ I don't really have a specific reason why.
   ___ I'm interested, but I can't afford it.
   ___ I don't think the expected benefits are worth it.
   ___ Society has more important problems than restoring salt marshes.
   ___ I do not support any kind of tax increases.
   ___ I do not live in the area – only people who live in the area should pay for the project.
   ___ Other: _____

12. **To what extent do you agree with the following statements?**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
The climate is changing in ways that could be harmful to the coast					
It is the responsibility of the federal government to fund restoration efforts related to Sandy					
Sandy was a rare event and a similar storm is unlikely to occur again in my lifetime					
I expect to see bigger coastal storms in the future					
Where possible, natural options for shoreline protection should be used before any man-made options					

13. Which, if any, of the following outdoor activities do you engage in? Please check all that apply.

___ Freshwater fishing
___ Saltwater fishing
___ Boating/Canoeing
___ Hunting
___ Bird watching
___ Hiking/nature walking
___ Other_____
___ I don't engage in any outdoor activities

Table of value for question #7 (choice experiment question)

Category	Attribute values for options	Status quo text
Shoreline armoring	• Do not install seas, protecting no additional homes from storm surge. • Install sea walls to protect 2,000 homes from storm surge. • Install sea walls to protect 4,000 homes from storm surge. • Install sea walls to protect 6,000 homes from storm surge.	• Do not install seas, protecting no additional homes from storm surge.
Living shorelines	• Do not install living shorelines, protecting no additional homes from storm surge. • Install living shorelines to protect 2,000 homes from storm surge. • Install living shorelines to protect 4,000 homes from storm surge. • Install living shorelines to protect 6,000 homes from storm surge.	• Do not install living shorelines, protecting no additional homes from storm surge.
Habitat	• No improvement to habitat; habitats for wildlife continue to deteriorate with the marsh. [a] • Small/minimal improvements to habitat. • Significant improvements to habitat.	• Habitats for wildlife continue to deteriorate with the marsh.
Recreation	• No improvement to recreation; recreational opportunities decline as the marsh deteriorates. [a] • Small/minimal improvements to recreation. • Significant improvements to recreation.	• Recreational opportunities decline as the marsh deteriorates.
Cost	• $75 • $125 • $175 • $225	• $0

[a] Always selected if no homes are to be protected by living shorelines.