The background is a blue-tinted image of a hand holding a pen, poised to draw on a map. The word "Climate" in the main title is highlighted in yellow, while the rest of the text is white. The overall theme is climate change and its impact on urban planning.

Will **Climate** Risks Change the Map of NYC?

How can **people** who are not scientists or planners begin to understand what **climate change risks** could mean for their communities, and for others around the world?

We compiled this presentation of maps and photographs from some available data in an initial effort to **communicate** the complexity of this issue.

Our goal is to **engage** New Yorkers throughout the five boroughs in climate change discussions and planning processes, and to raise awareness about the ways in which we can all **work together** to limit global climate change risks.

Gail Karlsson, Citizens Network for Sustainable Development
Nancy Owens Studio LLC
Laurel Marx Design

New York City TODAY

The five boroughs of New York City have close to 600 miles of coastline. Much of the city's historic development has been tied to the harbor, bays, tidal straits, and Hudson River.



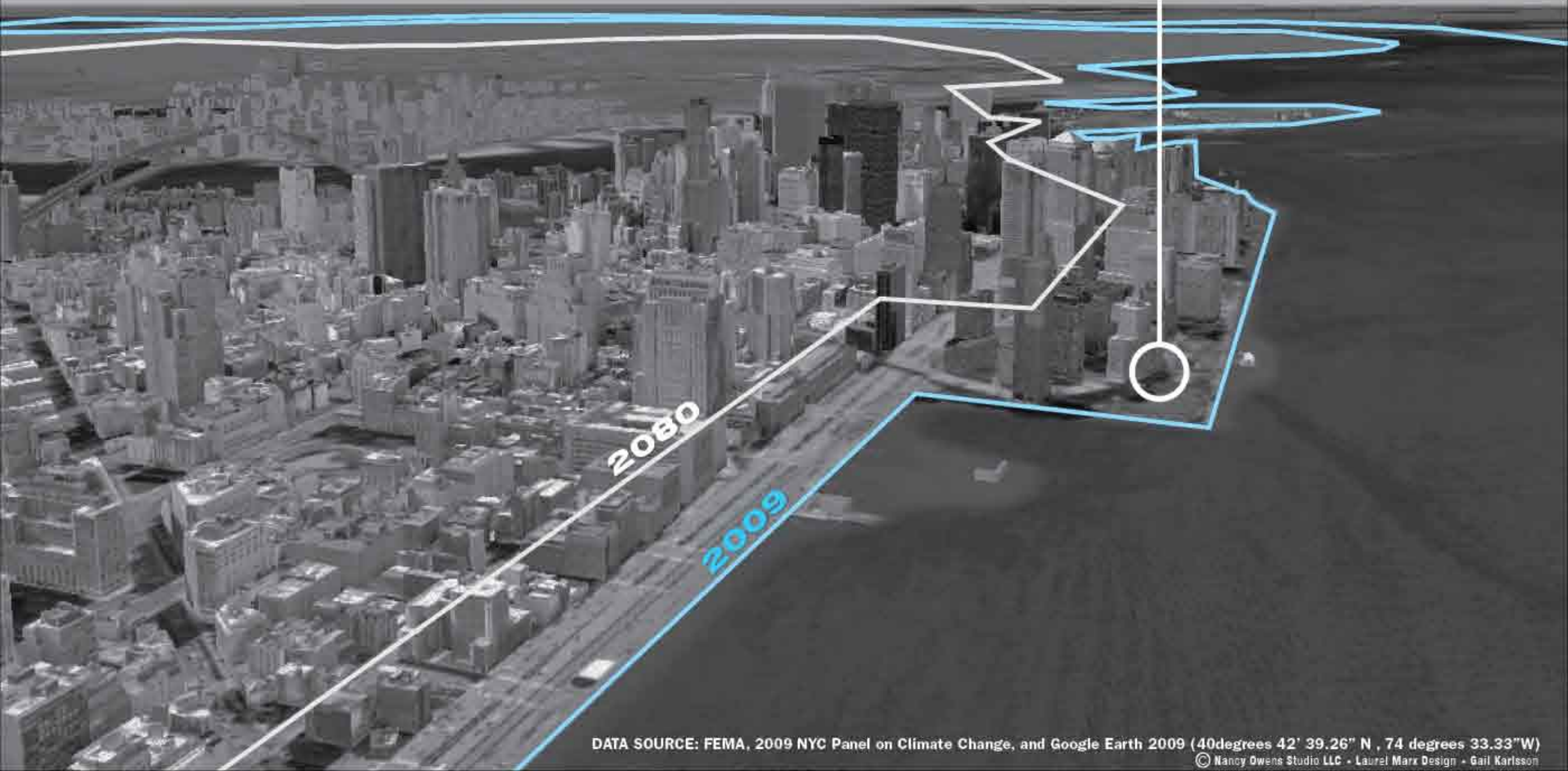
Projected Sea Level Rise

2 to 5" by **2020**

7 to 12" by **2050**

12 to 23" by **2080** if rapid melting of ice sheets, 41-55"

ACTION CENTER



New York City 100 Year Floodplain

The term **100-year flood** is misleading. It is not the flood that will occur once every 100 years. Rather, it is the flood elevation that has a 1% chance of being equaled or exceeded each year. Thus, the 100-year flood could occur more than once in a relatively short period of time.

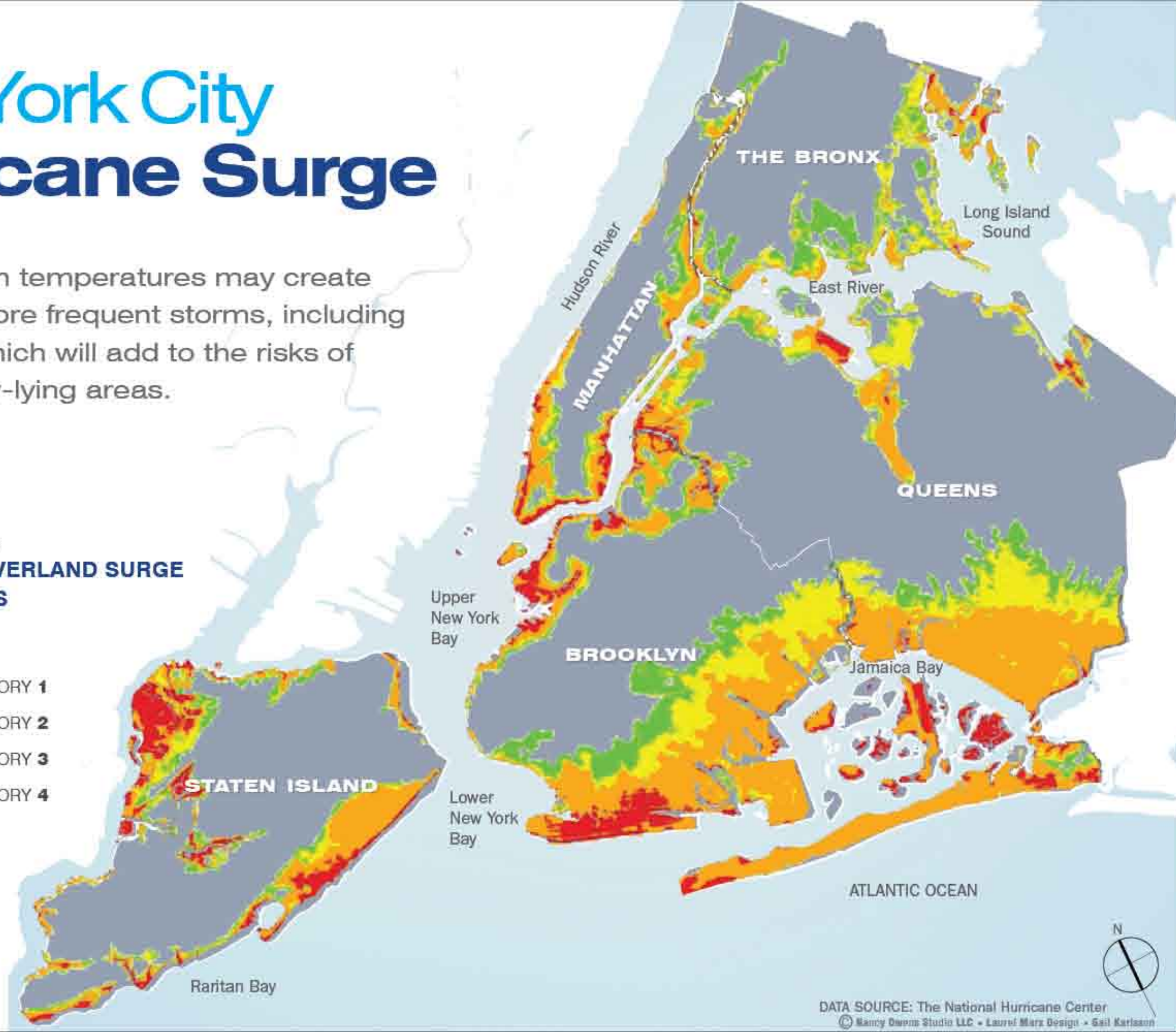
 CURRENT FLOODPLAIN



New York City Hurricane Surge

Warmer ocean temperatures may create stronger or more frequent storms, including hurricanes, which will add to the risks of flooding in low-lying areas.

SLOSH stands for
SEA, LAKE and OVERLAND SURGE
from **HURRICANES**



New York BIGHT

New York City is particularly vulnerable to storm surges because of a geographic characteristic called the NY Bight. The Bight is located at the point where New York and New Jersey meet, creating a right angle in the coastline.




A BIGHT is a curve or bend in the shoreline of an open coast that funnels and increases the speed and intensity of a storm surge.



Storm-surge barriers

Hurricanes are uncommon in this area today, but as ocean temperatures rise they could become more common. **Storm-surge barriers have been proposed to protect NYC from flooding caused by major hurricanes and rising sea levels.**



-  AREAS SUSCEPTIBLE TO STORM-SURGE FLOODING FROM MAJOR HURRICANES
-  STORM-SURGE BARRIER ALTERNATIVES
-  OUTER HARBOR STORM-SURGE BARRIER ALTERNATIVE

We are in a “green building” ...

in an area of low-elevation built on landfill, and in the event of a strong hurricane, it is at risk of flooding.



ACTION CENTER

-  SLOSH CATEGORY 1
-  SLOSH CATEGORY 2
-  SLOSH CATEGORY 3
-  SLOSH CATEGORY 4

Should buildings in flood-prone areas be built differently?

BROOKLYN

 100-YEAR FLOODPLAIN

CONEY ISLAND

DATA SOURCE: FEMA DFIRM Database and image from flickr.com

© Nancy Owens Studio LLC • Laurel Marx Design • Gail Karlsson

Should existing buildings be changed to respond to increased risks?



ROCKAWAYS

QUEENS

100 YEAR FLOODPLAIN

During a flood...where do we go?



STATEN ISLAND

100 YEAR FLOODPLAIN

After a flood...where do we live?

THE BRONX

100 YEAR FLOODPLAIN



DATA SOURCE: FEMA DFIRM Database and image from flickr.com

© Nancy Owens Studio LLC • Laurel Marx Design • Gail Karlsson

Before a flood...how should we plan?

MANHATTAN

100 YEAR FLOODPLAIN

DATA SOURCE: FEMA DFIRM Database and Google Earth 2009 (40 degrees 42'37.98"N, 74 degrees 22.60"W)

© Nancy Owens Studio LLC • Laurel Marx Design • Bill Karlo

Through Mayor Bloomberg's **PlaNYC**, New York City has already begun the complicated work of responding to climate change through:

mitigation

reducing greenhouse gas emissions from buildings and vehicles,

AND

adaptation

making plans to protect people and infrastructure from projected climate risks.



PlaNYC includes initiatives to **mitigate climate change** by reducing greenhouse gas emissions such as :

- **Decrease municipal government's carbon footprint**
- **Provide cleaner energy**
- **Plant trees**
- **Reduce vehicular congestion**
- **Promote cycling by installing bike lanes**
- **Convert to hybrid taxi cabs**

There is much that needs to be done locally, nationally and internationally to prevent worst-case climate risk scenarios.

It is our hope that as people come to understand more clearly the **shared risks** we face, we will be able to move together towards **shared solutions** for effective preventive and protective action.

Gail Karlsson, Citizens Network for Sustainable Development
www.citnet.org/place/New+York

Nancy Owens Studio LLC, Map Research, Design, Presentation
www.nancyowensstudio.com

Laurel Marx Design, Graphic Design
lmarx@mindspring.com