

Sea Level Rise Inundated Area

10 Year Flood 50 Year Flood 100 Year Flood 500 Year Flood





1. Sea Level Rise Increased levels of the sea also causes the Hudson to rise. By 2020 the changes in the coastline will be minimal, but the curve will rise sharply

2016-2020

### 2. Air Temperature Rise Incresed temperatures, at this time will be negligable since most of it will be negated by winds from the river. However, unseasonably warm days will be halmarks of days to come. **3. Increase in Prescipitation** Precipitation will increase marinally in frequancy at this time, and there will be one or two larger more severe rain events. This might cause minor flooding.

### Key Moves

• Shore Line Softening Beginning rennovations on the waterfront, softening the shoreline and preparing it for innundation

• **Bioretention Parks** Preparing the Bioretention Parks for Storm water runnoff, connecting overflow pipes, preparing the grade.

• 2nd Street Opening Reopening 2nd Street as a oneway road. • Dear Valley Road Opening Connecting to 2nd Street.

• **Trolley Line Opening** Buy a trolley and establish route.

• Front Street Rennovation Regrade Front street to drain appropriately

and add sidewalks

• **Flood Proofing** Wet flood proofing for the Train Station, Dunn Building. Basilica and New Develop-ment

# 2020-2050

### **Climate Change** Challenges

1. Sea Level Rise By 2050, areas of the shoreline will be completely innundated, and the flood zones will just keep expanding.

2. Air Temperature Rise Incresed temperatures, will have continued to rise. As these temperatures incrase plant

varieties will change and with them the animal communites. 3. Increase in Prescipitation

Precipitation will have increased noticibly. rains will come more sporatically, but when they do come, they will be heavy. The the watersheds may become overwhelmed and flooding events will occur.

### Key Moves

 Riverfront Park Rennovation The park will be ronovated to accomodate sea level rise. A boardwalk will be added to the waters edge to provide access. Bioretention Parks By 2050 the Bioretention Parks will be fully

opperational. Event Park

Completed at this time. • Second at Grade Rail **Crossing** Opening of the rail crossing to other parks and Port.

• South Bay Boardwalk

Establish boardwalk with appropriate educational signage and viewing areas. Water Street Development

Finish construction on Water Street Development for commercial use. Road Elevation

Route 9 and the Causeway will be Elevated to avoid flooding • Flood Proofing

Wet flood proofing for the L&B building, floating building for the Power Boat Association, and wet flood proofing for all new developments.

# 2050-2080

### **Climate Change** Challenges

1. Sea Level Rise The waters will continue to rise, flowing significantly more inland in lower areas. Flood zones will continue to grow.

**2. Air Temperature Rise** Temperatures will have risen to the point where we are probably in another hardiness zone. Plant communities will be drastically different. Urban heat island will continue to be an issue if not mitigated. Increasing risk to health. 3. Increase in Prescipitation

Periods between precipitation will continue to grow, while heavy downpours when it does rain will also increase. Watersheds will become overwhelmed and flooding will occur frequently.

### **Key Moves**

• Hudons Hub Hudson Hub Development will be completed by 2080.

 Rail Line Elevation The Railline and the trolly line will be elevated to avoid flooding

 Canal The Canal will be flooded and useable.

• Flood Proofing Dry flood proofing on the Robert Taylor House.







50 Year Flood 100 Year Flood

**Sea Level Rise** 

9-19

.5-6.2

on Increase

4-12%







5 South Bay Boardwalk 6 Stormwater Park

F Powerboat Association G Dunn Warehouse (Aquarium/museum) H Sloop Club

200'

x1 Ferry Street Bridge x2 Broad Street at Grade Crossing x3 Port Street at Grade Crossing x4 Pedestrian Bridge



### Hudson Waterfront Tidal Parks

The Waterfront is an important part of the identity of Hudson despite how limited it is. However, the rising water levels will soon change the shoreline. Tidal waters will flow over the historic sloops and other places along the shore. Because these places will still be accessible when the tides are out, these spaces can be developed to illustrate the tidal nature of the hudson and the changing shoreline due to sea level rise. In order to maintain access when the tide is in, we want to provide a boardwalk that runs along the shore The boardwalk would also act as a embarkment area for tour boats. This would help to keep people connected to the waterfront and potentially the rest of the river. The industrial nature of the edge of the river and the neighboring gravel site would be incorporated in some way to illustrate and celebrate the industrial values of the river.

### **Event Park**

The Event Park will be replacing abandoned lots and parking lots adjacent to the wetland and the Basilica. The park will serve as a companion to both of these. It will provide a large outdoor extension for the Basilica and it's events, as well as hosting community sponsored events such as farmers markets, graduations, community theaters etc. The park will include a staging area, as well as peripheral paths, seating and shade. This will also provide a green buffer to the wetland, allowing another layer of filtration for stormwater before seeping into the wetland, and it will also extend its ecological edge.

# South Bay Boardwalk

Incorporating a boardwalk into the South Bay wetlands brings people into the space, which would otherwise be mostly inaccessible. Bringing people into the site engages people and gives the space value in their eyes. The Boardwalk would be located on the higher ground within the wetlands which would mitigate cost and impact.It would be situated on piles which would allow water to flow and animals to pass or even shelter uner it. The boardwalk would also include educational information as well as viewing platforms. This Boardwalk would also provide a connection between the Event park and the Tidal park, increasing the walking area of the site.

### **Elevated Railway**

Because industry as moved away from Hudson in the last few decades, Hudson has become dependant on it's tourist and weekender economy. One of the reasons it is such a draw is because it is located right on the railway. The train station is located within the HUB and is an important feature. In order to maintain the train in the face of sea level rise we believe that it is important to raise the line. This would be done on piles in order to allow flood waters to recede easily back into the Hudson and to add a sense of permeability since • the rail is a major obstruction to the rail line.



value and habitat to the land around it.



KEY





The Caz building is soon to be demolished and an RFP for development in the site is already underway. We would propose a development of mixed use buildings that carried on the traditions of industry, the arts, small business, and community that are indicative of hudson. This development would help to add density to the site, while also creating a center that that would draw people into the site and then from there outwards to explore the areas surrounding it. The buildings would be tall in order to provide views to the waterfront.

# Stormwater Parks

There are multiple areas on the site that are prone to collecting storm water as it is. These sites could be formalized and developed with plantings, drains and permeable subgrade. These sites would also have pedestrian walkways through them, inviting pedestrians to cross the site as well as view the systems at work. These sites would be adding to the green infrastructure and ecological corridors, while also connecting adjacent sites to the HUB.



The trolley line will run through the existing low frequency freight line from the HUB to the 7th Street Park where events usually start from and then loop back through Warren Street and Front Street. This complete loop can help connect the city center with the HUB and bring down more people to the waterfront.

## **Elevated Roads**

In order to maintain major connections to and through the site, both the causeway and 9G is going to have to be elevated. Since only a segment of the 9G will be flooded, it is reasonable to keep the existing footprint of the 9G and elevated on piles to avoid future flooding and also create better water connection by letting water flow underneath 9G.





view d-Stormwater Park





# **Concept Diagram**

- Hydrological Ecological Cultural
- Transportation

view e-Trolley Line

