

Piermont Resiliency

What Waterfront Resiliency means for Piermont today

10/29/2021

Goals for this Meeting

- Inform the community about current threats from climate change caused extreme events and sea level rise
- Inform residents about what they can do to help build a Resilient and Sustainable Piermont, and prepare for and respond to weather events



What is Resiliency?

- The ability to bounce back
- Learning, adapting, and overcoming
- Protect, Prepare - Respond, Recover
- State of Mind

Preparing for the worst helps put actual emergencies in perspective



Our Mission: To help Piermont prepare for flooding and sea level rise through research, education, outreach, planning, and funding municipal improvements.



Who Serves on the Piermont Waterfront Resiliency Commission?

Commissioners:



Nathan Mitchell
Trustee & Chair



Klaus Jacob
Science & Strategy



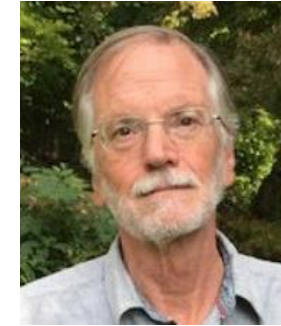
Sylvia Welch
Funding & Development



Mark Silberstein
Outreach & Engagement



Dan Goswick
Emergency Management



Rod Johnson
Land Use Planning



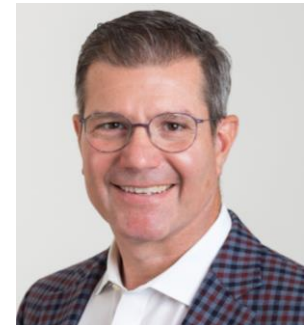
Usha Wright
Member at Large

Village code Chapter 50-3 Powers and duties...To develop and recommend to the Village Board of Trustees steps necessary for the Village of Piermont to develop and implement ongoing resiliency strategies for the Village, to advise the Village Board on steps necessary to implement the recommendations generated by the Piermont Waterfront Resilience Task Force in 2014, and to identify potential sources of funding to assist in the implementation of the recommendations.

Contributors:



Steve Silverberg



Ray Fusco

How do we become a resilient community?

- Identify challenges
- Be prepared for emergencies
- Adapt to climate change
- Reduce climate impacts
- Work together as a community

Coordinating our emergency services, DPW, building department, and property owners in adaptation, preparation, response and recovery plans improves the comprehensiveness of the plans as well as their effectiveness. Working together builds relationships that facilitate recovery operations.



Building Village Resiliency

Adaptations Piermont has made:

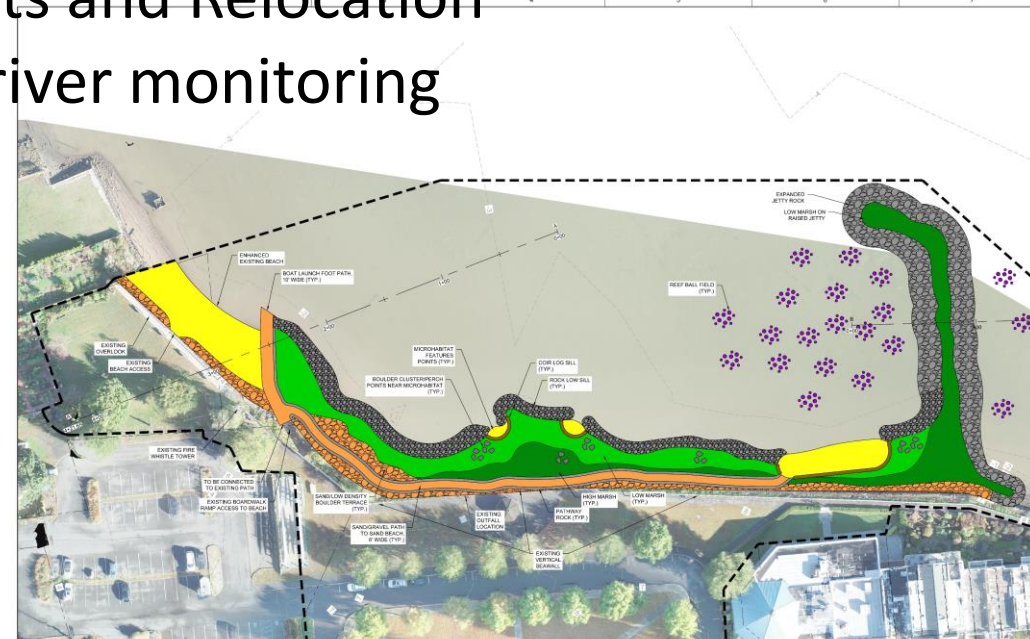
- ✓ Additional stormwater check valves
- ✓ Backup generator for Firehouse emergency shelter
- ✓ Emergency Operations Center at Firehouse
- ✓ N2N network notifications
- ✓ Flood Guide & Designated flood parking areas
- ✓ Overnight parking ban lifted in flood events
- ✓ Ferry Road elevation



Piermont Projects in Progress:



- Comprehensive Zoning plan
- CRS- NFIP discounts for residents
- Interagency stormwater improvements
- Ritie st culvert
- Erie path stormwater improvements
- TNC – preparing for Buyouts and Relocation
- Chronolog citizen science river monitoring
- Flood Resilience Network
- BRIC
- CEMP



Climate Change Threats

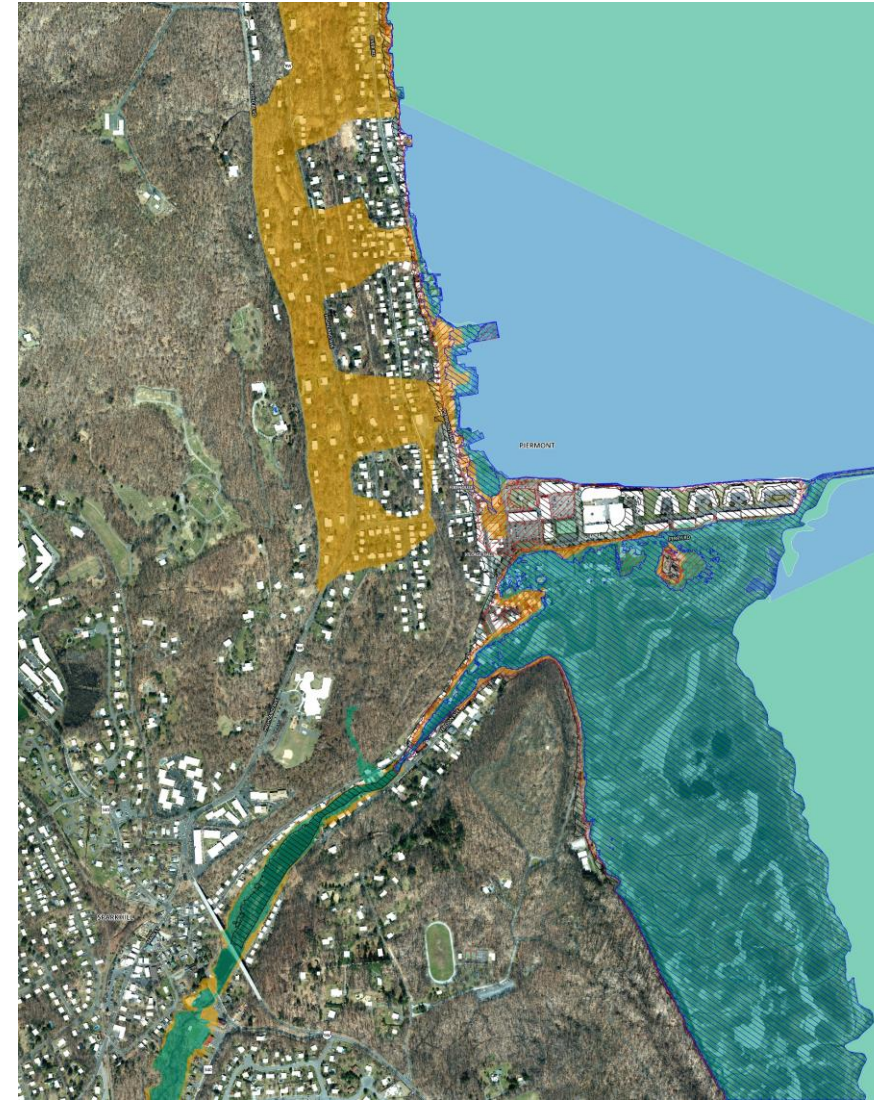
Climate change involves increased flooding tied to sea level rise and extreme rainfall events, but also drought and wildfires.

The Rockland County Hazard Mitigation Plan identifies 52.5% of Piermont to be at risk from a flood event, the highest in the county. Over the course of a 30 year mortgage, a home in the 1% zone has a 26% chance of being flooded at least once.

We are experiencing hillside and streambank flooding due to increasing intensity, duration, and frequency of extreme rainfall events, as well as waterfront flooding due to sea level rise and surge events.

Significant Storm History:

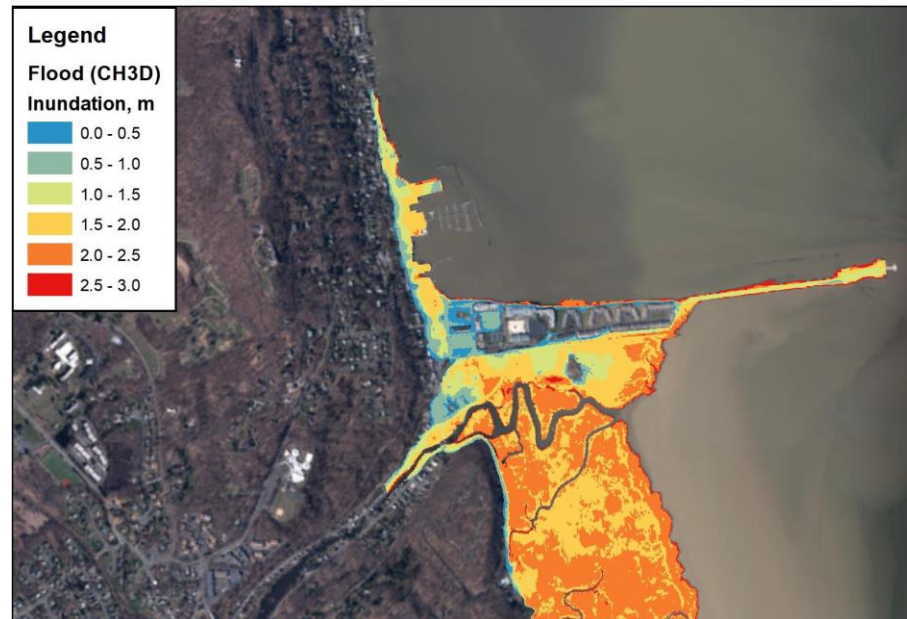
- Ida 2021
- Superstorm Sandy 2012
- Irene 2011
- Unnamed Nor'easter 2007
- Frances 2004
- Floyd 1999
- Bertha 1996



Storm Surge & Wave Action (Riverine)



Hurricanes, Sub tropical storms, and Nor'Easters all push storm surge water up into the Hudson and bring winds that can drive waves of 3 feet or more on top of the surge elevation, which have caused substantial damages along the coast.



The most recent SLR projections we have range from .75 to 2.5 feet by 2050 and 1.25 to 9.5 feet by 2100. SLR will increase the number of surge events that impact waterfront properties.

Hillside Extreme Rainfall Events (Fluvial)

- We are experiencing climate change driven increases in the intensity, duration, and frequency of extreme rainfall events
- During post subtropical storm Ida in 2021, Piermont experienced about 5" of rain in 2 hours, and about 7 inches of rain in 5 hours.



Stormwater and sanitary sewer systems are not engineered to handle 2+ inches of rain per hour and are over capacity minutes after those rates are reached. Watershed streams and brooks overflow their banks in the hours after extreme events, creating additional delayed flood hazards.



Sunny Day Floods (Nuisance)

Sea level rise is causing higher tides without storm related surge or rainfall

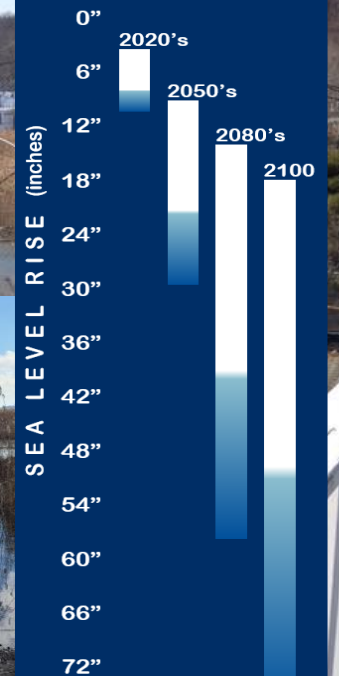
- Current estimates for annual nuisance flood days in Piermont:
 - By 2030-Median 52, High 98
 - By 2050- Median 171, High 293
- Threatens access to and egress from low elevation homes
- Limits emergency services access and ability to respond



SEA LEVEL RISE FOR EACH DECADE

LIKELY POSSIBLE

YEARS



FEMA NFIP

National Flood Insurance Program policies are available to many Piermont property owners, and provide coverage that typical home insurance policies do not. Significant changes are happening to these policies this year.

Risk Rating 2.0

- 10/1/21 for new policies
- 4/1/22 for existing policies
- 18% per year increase limit
- \$12,125.00/year cap for max 250K coverage
- Black Box; ensemble model includes catastrophic storms
- Likely increases for hillside and waterfront properties
- Discounts for mitigations
- CRS discounts continue



Let's Hear From You

This is all a lot to take in, and we're sure everyone has questions about what they can do, so before pushing forward to preparations, we would like to capture some of those questions, and hopefully we can address them in the next part of the presentation.

Considering the climate change challenges we face in Piermont, what questions do you have regarding resiliency?

Let's Keep Going



Placeholder slide

What Residents can do to Protect their Homes

Be aware of your NAVD88 elevation, and FEMA ABFE A, V, and X zone delineations in your vicinity

Flood proofing homes



- Dry-proof vs. Wet-proof
- Install Flood Vents
- Fill in basements

- Move electric main and distribution panels
- Move HVAC and water heaters



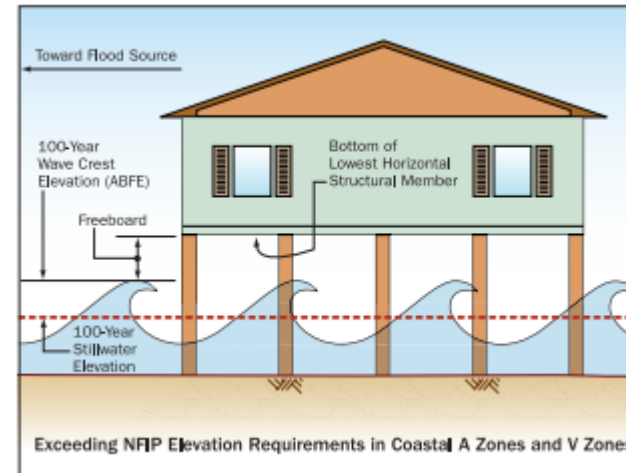
Backup Generators
Be aware of CO hazards. **Never operate indoors or in open garages!** Use a Genset and operate outside away from the home. Gas powered trash pumps are also a great tool standing in for electric sump pumps.

Elevating homes

- All new construction and substantial improvements are required to be above ABFE

Making drainage improvements

- New construction requires retention and limits runoff



What Does Elevation Cost?

Ranges from \$65,000 to \$200,000 depending on house construction, site conditions, and required elevation

\$ 2 Story Homes – Add another \$5,000 to \$10,000

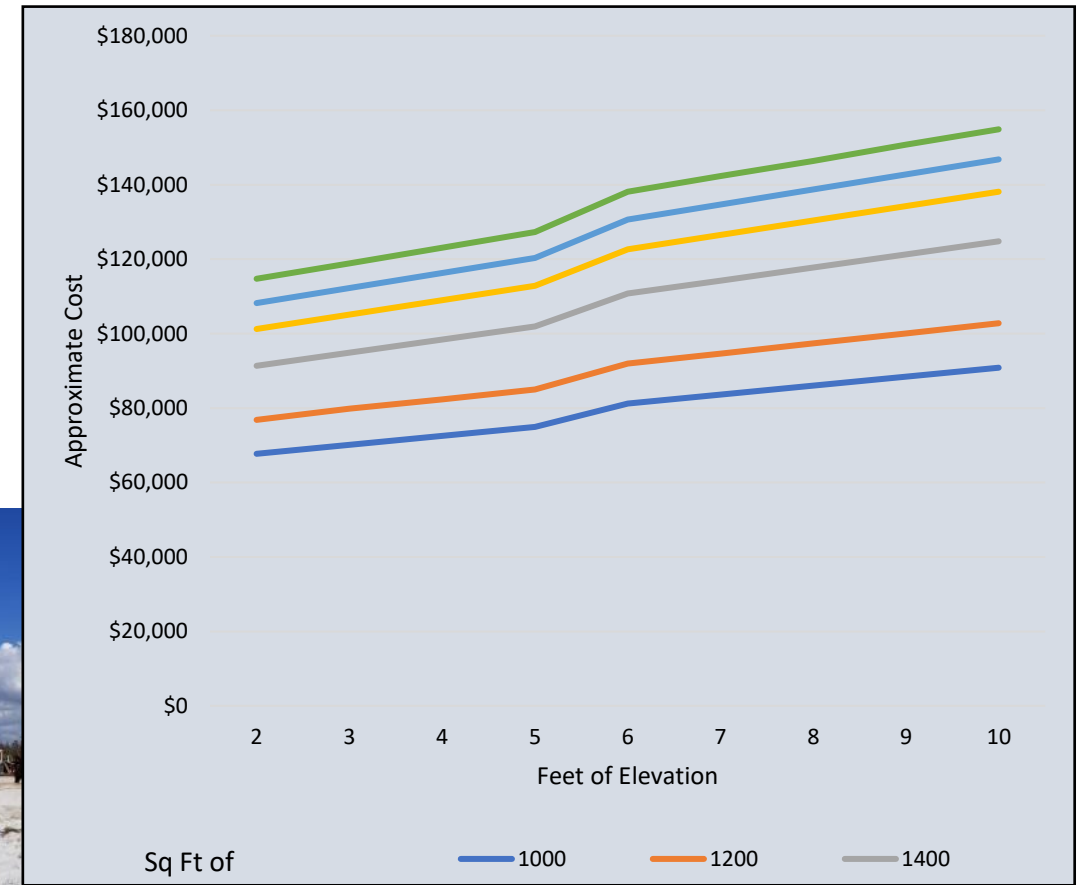
\$ Add up to \$10,000 for As-Built Design, Elevation Certificate and Lot Survey, Foundation Design, Geotechnical Analysis, Plot Plan, Local Permits

Flood Insurance Considerations

Flood insurance rates are increasing. Congress has mandated that rates reach actuarial levels. This is already affecting affordability and home value. Elevating to BFE + 2 or higher significantly lowers flood insurance rates.



Approximate Cost of Elevation
Wood Framed House



What Residents can Do to Prepare Themselves

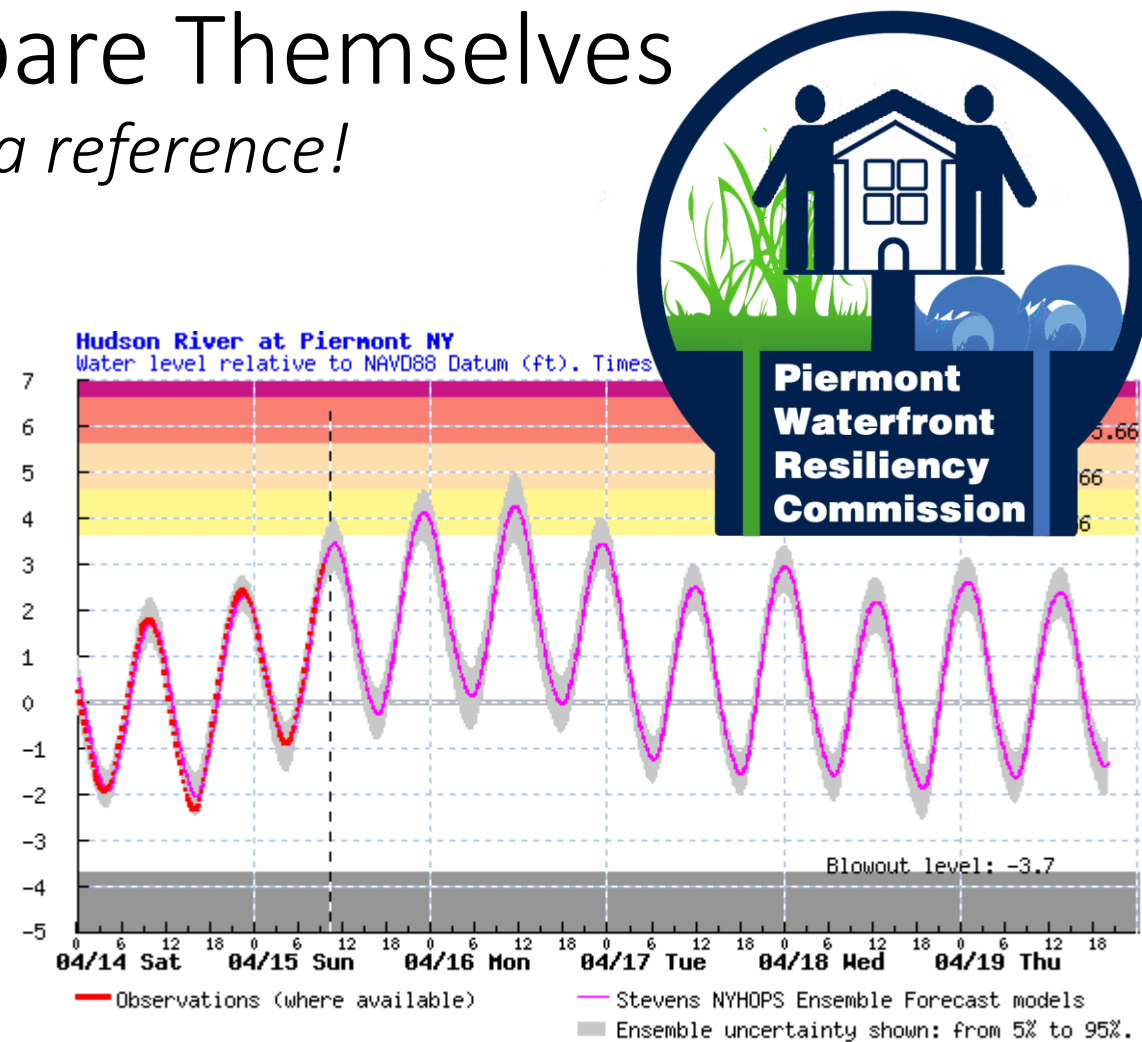
Keep your Flood Guide handy as a reference!

- Personal Preparations:

- Understand your flood and home insurance policies
- Document contents for insurance
- Monitor [Stevens Flood Advisory System](#)
- Make an emergency evacuation and communication plan for family and pets
- Know where you and your family will meet and stay if your home is flooded
- Assemble a flood emergency kit (*Go Bag*)

- N2N network

- Sign up for alerts and notifications
- Register any special needs such as medical devices and medications that you require
- Volunteer to check in on your neighbors when activated in an emergency and coordinate with emergency services



Flood Event Response Basics

1: Be Aware

- Know your FEMA ABFE zone V, A, X
- Know your home's elevation in NAVD88
- Check the Stevens Flood Advisory System
- Follow Tide Cycles and Moon phases
- Watch for Storm or Flood Warnings

2: Prepare

- Move cars to high ground
- Move or secure boats and trailers stored in the floodplain
- Sandbag doors and basement windows
- Move household chemicals out of low-lying areas
- Check your Go Bag for current medications and perishables
- Make arrangements for pets
- *Advanced ** turn off gas and electric service ***

3: Get Out of There!

If a flood is predicted to inundate your area with more than a foot of water, you may be unable to get out, and emergency services may be unable to get to you. Wind driven wave action may add several more feet of wave height and carry floating debris hazards. Assume all floodwaters are contaminated with chemical and biohazards. If an evacuation advisory is put in effect, seek shelter at an emergency shelter or alternative housing immediately.



Recovering after a flood event

- Preparing for utility power restoration
 - Submerged electric panel and meters need to be checked
 - Submerged gas appliances need to be serviced
- Dealing with the mess
 - Assume all floodwaters were biologically and chemically contaminated
 - Keep pets and children away from areas that flooded until cleaned
 - Test for mold / tear out submerged drywall
- Dealing with insurance
 - Document everything
 - Sewage
- Mental Health Consequences
 - Residents, business owners, and Village staff



Piermont N2N Network SIGN UP!

Email to register:

PiermontN2N@piermont-ny.gov

- Receive email and SMS Alerts when flood events or other hazardous conditions are imminent.
- 46% of individuals expect to rely a great deal on people in their neighborhood for assistance within the first 72 hours after a disaster.
- **N2N Team Leaders** can serve as a force multiplier for first- response capability in our Village by ensuring the safety of themselves, their families, and their neighborhood until first responders arrive. N2N Team Leaders will contact neighbors who have requested a **Check-in** during emergency events.



Over the course of the last year we have sent out 30 N2N alerts about hazardous conditions to over 50 residents.

While most notices were warnings about elevated river conditions, storms and hazardous discharges have also been the subject of alerts.

We currently have a volunteer leader for each district, and about a dozen people who have requested a check-in during an emergency situation.

The Future to Adapt to

Time Interval	Low Projection	Low-Medium Projection	Medium Projection	High-Medium Projection	High Projection
2020s	2 inches	4 inches	6 inches	8 inches	10 inches
2050s	8 inches	11 inches	16 inches	21 inches	30 inches
2080s	13 inches	18 inches	29 inches	39 inches	58 inches
2100	15 inches	22 inches	36 inches	50 inches	75 inches

www.hrnerr.org



Even 1 foot of SLR would mean Bogertown, Paradise ave, Ohio street, Bridge street, Lot D and the River lot, as well as properties along Piermont ave north of the firehouse would flood regularly in good weather. As a result, some areas may become unsuitable for residential use, while in other areas elevating and floodproofing homes may be sufficient. We are looking at possible scenarios where planned relocation to higher elevations may offset the loss of certain areas, and other areas may be reinvented with flood mitigation and resiliency solutions, but each neighborhood has a unique risk profile and best mitigation strategy.

Appendix A

Personal Protective Equipment

- Rain gear; i.e. hat with brim, raincoat
- Waterproof boots or waders
- Personal Flotation Device



Emergency Household Equipment

- Portable generator
- Generator tent
- Trash pump



Go Bag suggested contents

- change of clothing
 - dry socks!
- First Aid & Medications
 - a week's supply of prescription medications
 - non-prescription medications
 - first aid kit
 - hand sanitizer & hand wipes
- Food & Provisions
 - soap & toiletries
 - sleeping bag and bedding
 - Bottled water and dehydrated/canned food
 - extra pair of glasses and/or contact lenses
- Emergency Communications
 - battery-powered radio with fresh batteries
 - cell phone & charger; battery boost charger
 - whistle to signal for help
 - flashlight *with fresh batteries*
- Important Contacts & Documents
 - a list of family physicians and important medical information
 - photocopies of important documents, including homeowners insurance
 - identification cards, credit cards, cash & checks



Appendix A

- <http://hudson.dl.stevens-tech.edu/sfas/d/index.shtml?station=U246>
- <http://www.scenichudson.org/slr/mapper#>
- <https://www.hrnerr.org/14125.html>
- <https://pubs.usgs.gov/gip/106/pdf/100-year-flood-handout-042610.pdf>
- <https://geopower.jws.com/rockland/apps/ABFE/default.aspx>

