Staying Above Water

9 May 2023

Sarah Hansen & Ian Stevenson

Greater Portland Landmarks

Historic character enriches our lives

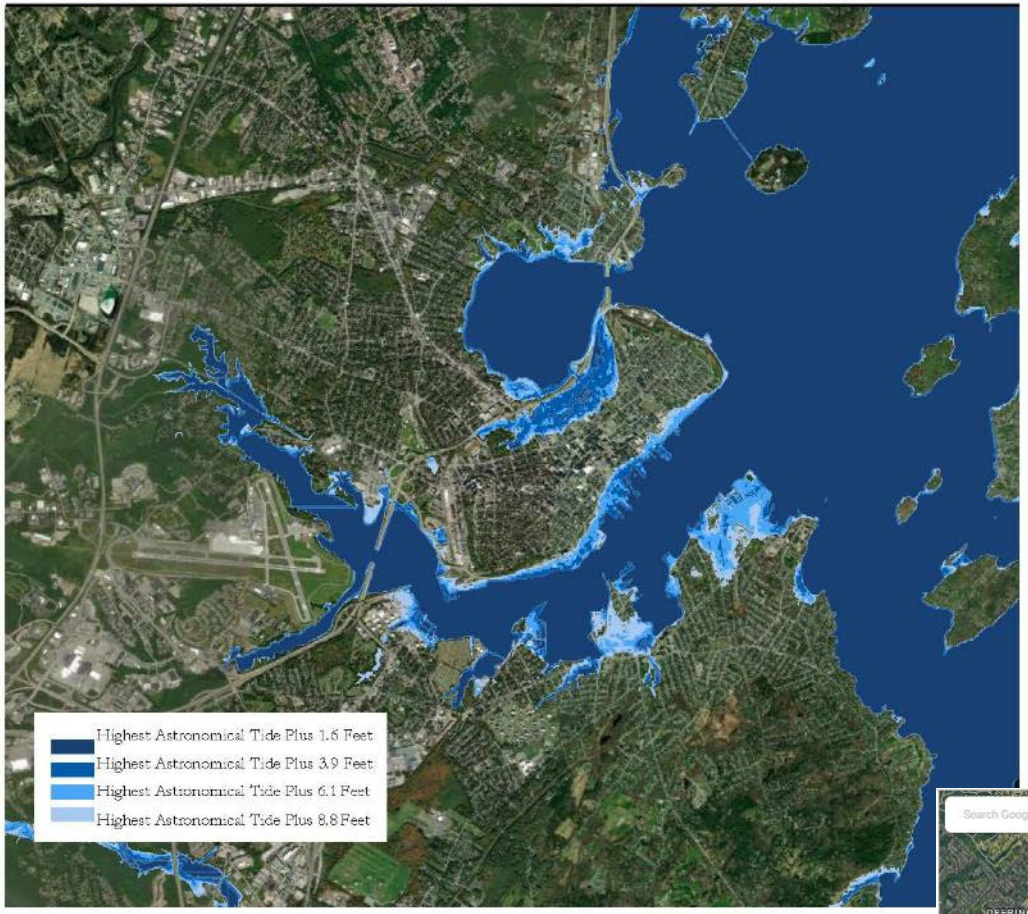
GREATER PORTLAND LANDMARKS

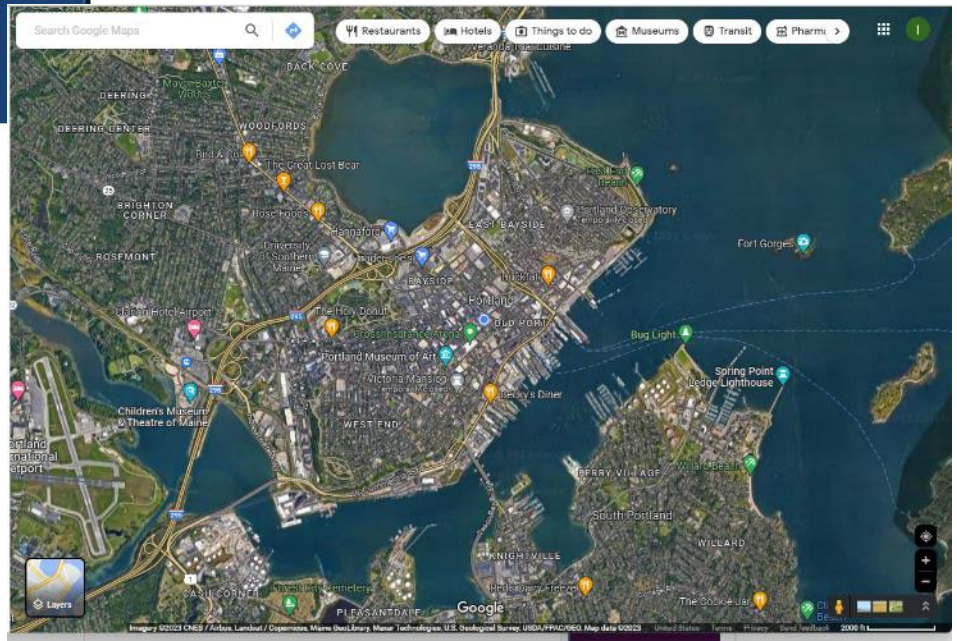
The Energy Efficient Old House:

A Workbook for Homeowners

www.portlandlandmarks.org

Historic Resources & Rising Waters: High Water, High Stakes


Highest Astronomical Tide Plus 1.6 Feet
Highest Astronomical Tide Plus 3.9 Feet
Highest Astronomical Tide Plus 6.1 Feet
Highest Astronomical Tide Plus 8.8 Feet


Search Google Maps
Restaurants
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Things to do
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Transit
BACK COVE
DEERING
DEERING CENTER
WOODFORDS
BRIGHTON CORNER
ROSEMONT
EAST BAYSIDE
BAYSIDE
Portland
OLD PORT
Portland Museum of Art
Victoria Mansion
Children's Museum & Theatre of Maine
WEST END
Bug Light
Spring Point Ledge Lighthouse
FERRY VILLAGE
South Portland
WILLARD
KNIGHTVILLE
PLEASANTDALE
Fort Gorges
Layers
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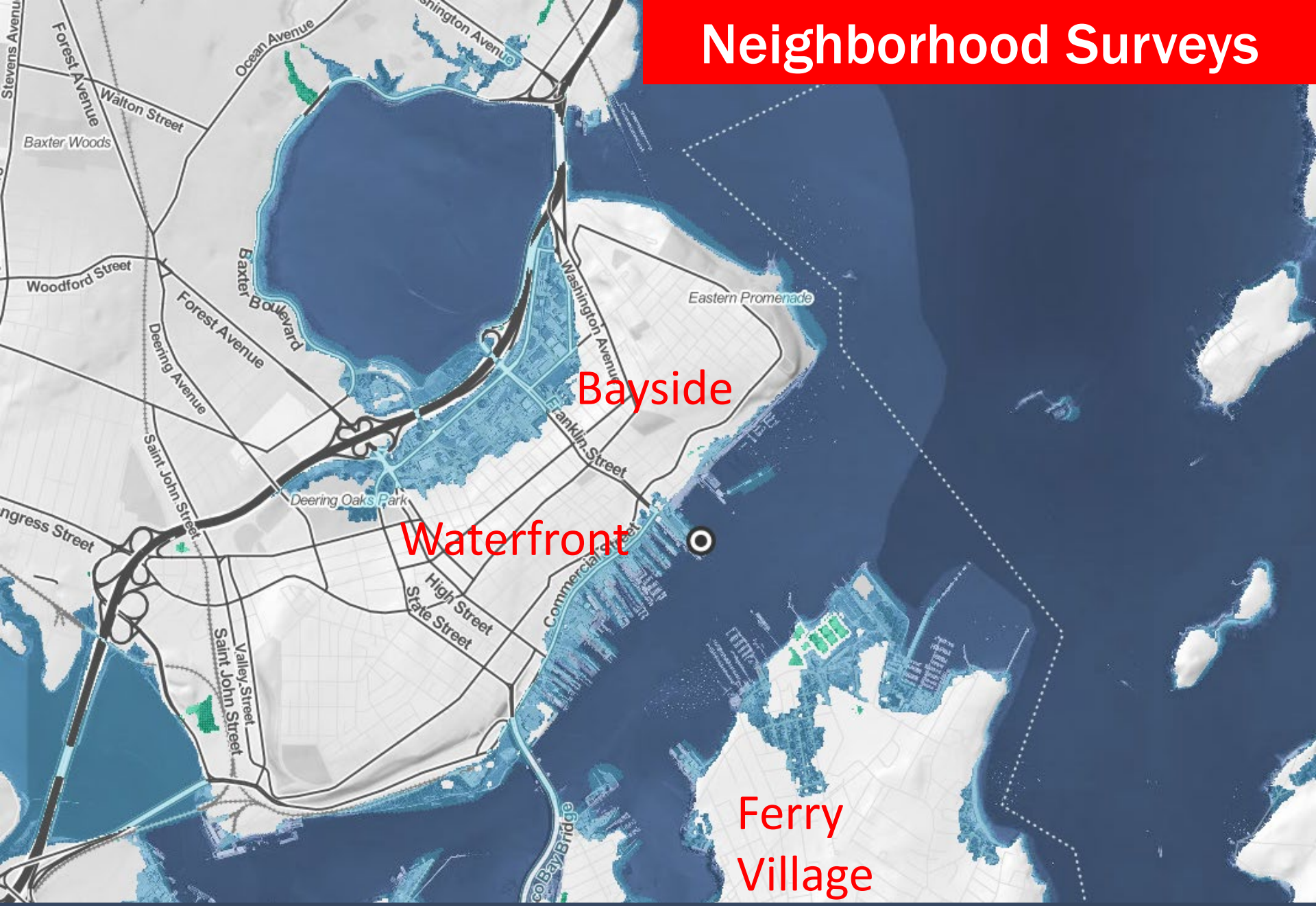
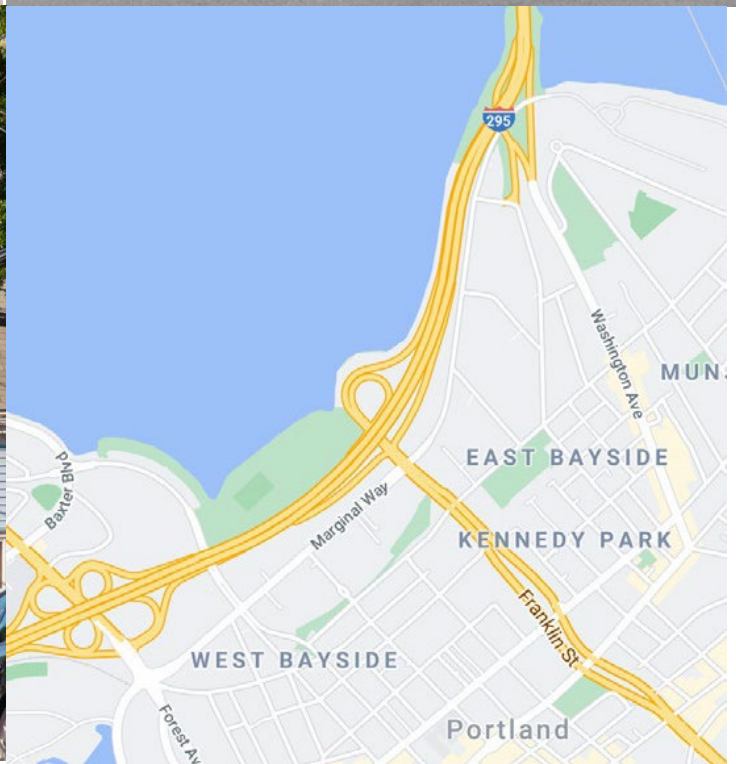
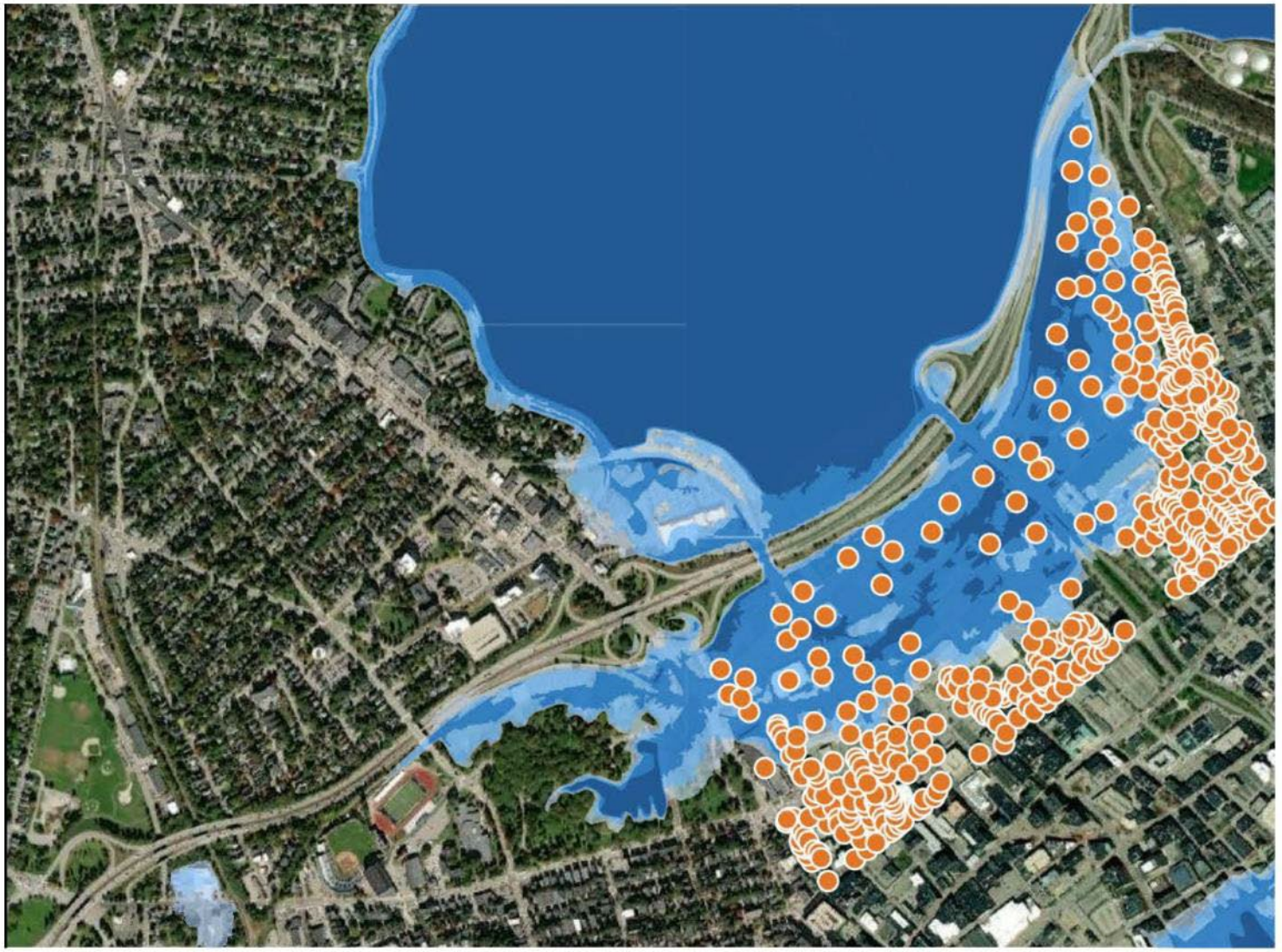


DOCUMENTION: Identify Historic Resources At Risk


BACK COVE
Contains 787 Acres
DEERING'S OAKS
PORTLAND
MARGINAL ST.
Church
Unit. Ch.
Cong. Ch.
Cath. Ch.
Winthrop

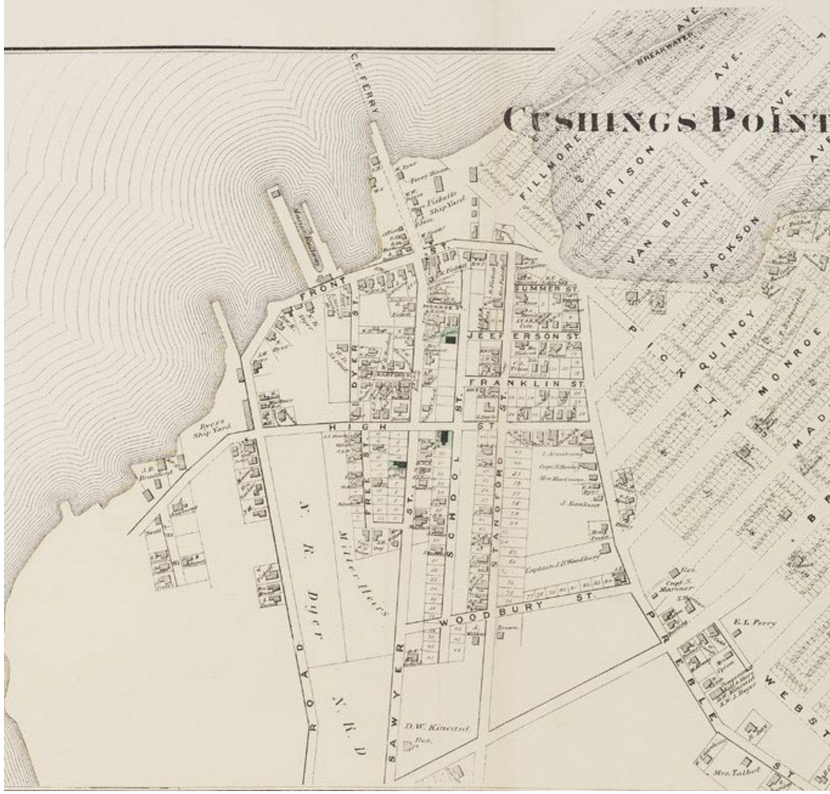

SLOW
Winthrop


295
Washington Ave
EAST BAYSIDE
Baxter Blvd
Marginal Way
KENNEDY PARK
Franklin St
WEST BAYSIDE
Portland

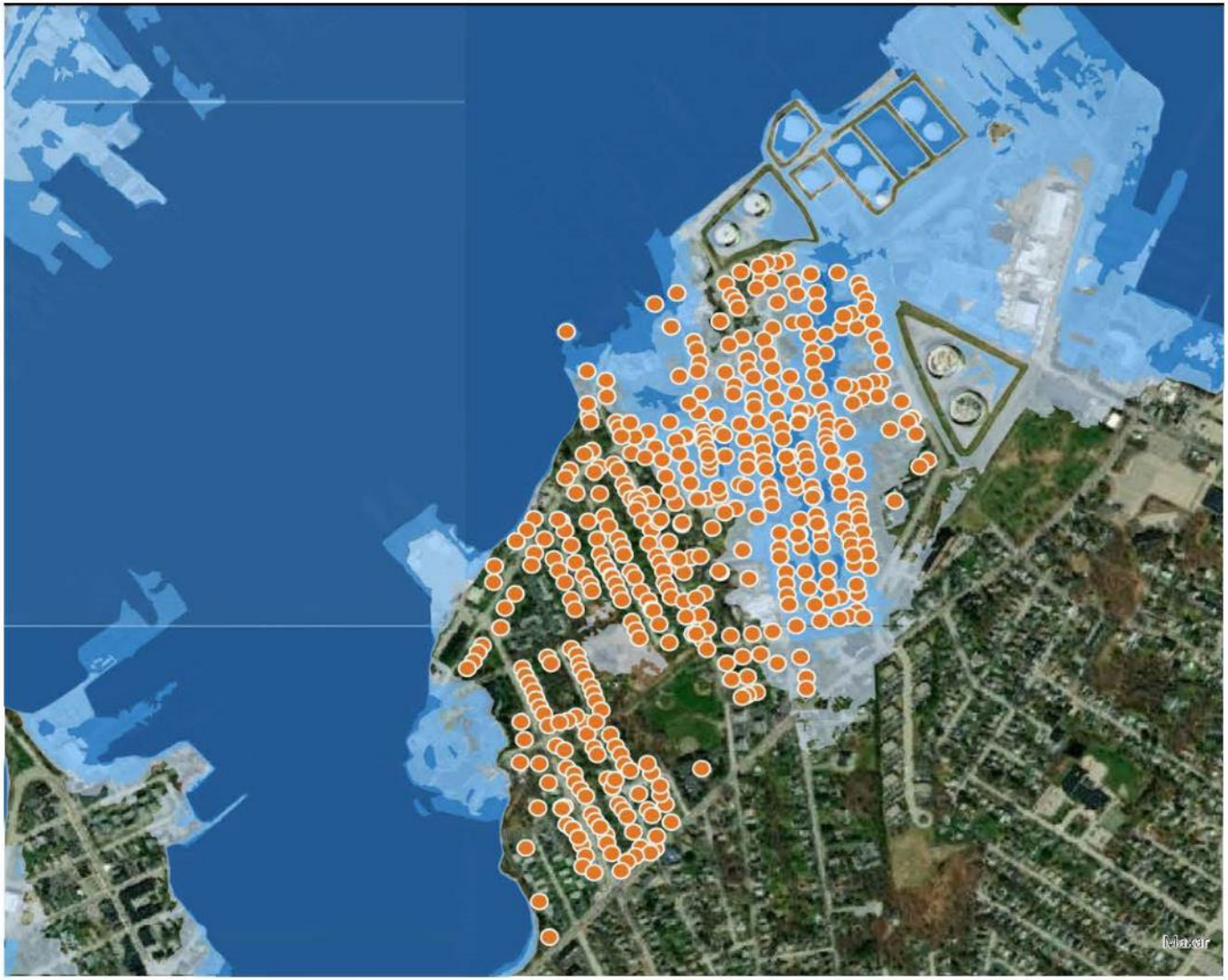


Highest Astronomical Tide Plus 1.6 Feet
Highest Astronomical Tide Plus 3.9 Feet
Highest Astronomical Tide Plus 6.1 Feet
Highest Astronomical Tide Plus 8.8 Feet

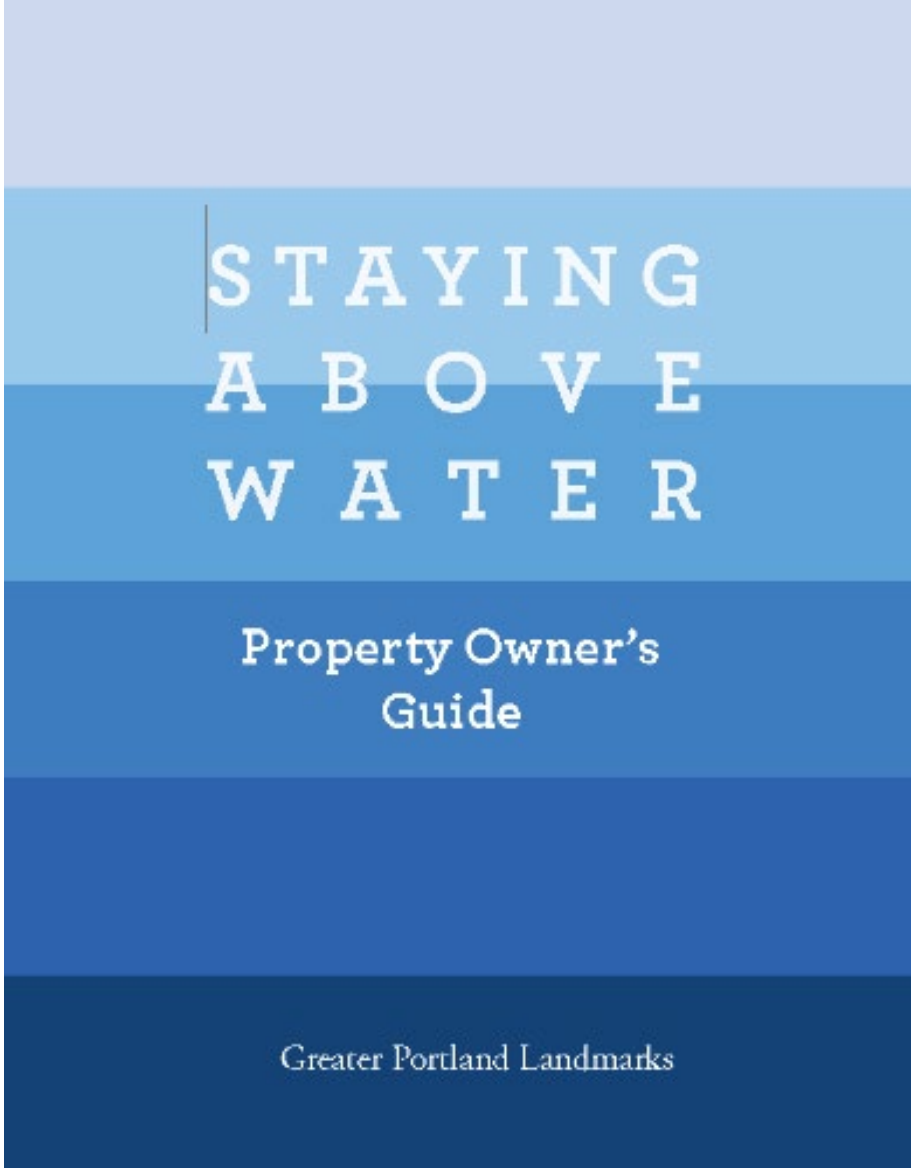
Each orange dot represents a surveyed historic resource in Bayside at risk due to increased flooding and sea level rise caused by climate change.


CUSHINGS POINT
BREAKWATER
AVE.
FILLMORE
HARRISON
VAN BUREN
JACKSON
QUINCY
MONROE
FRONT
HIGH
JEFFERSON ST.
FRANKLIN ST.
SUMMER
SAWYER
SCHOOL
WOODBURY ST.
ROAD
PREBLE
Miller Heirs
D.W. Kincaid
E.L. Perry
Mrs. Talbot

150

Each orange dot represents a surveyed historic resource in Ferry Village at risk due to increased flooding and sea level rise caused by climate change.



www.portlandlandmarks.org/sustainability

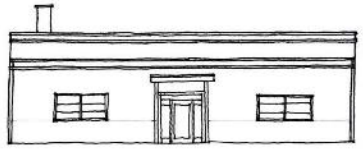
RESOURCES

3 Hall Court
c.1820, vernacular

Existing Conditions
This historic single-family residence (c.1820) is built very close to grade and located at the edge of a low-lying area of Bayside identified as at risk to flooding from rain and storm surges. The area around the house features many paved surface parking lots where runoff during storm events negatively impacts adjacent properties and the city's storm water system. With the building sill located close to grade, even minimum levels of flooding or storm water runoff would submerge or wet the building's wood framing, siding, and trim. The front entrance is also very close to grade and susceptible to flood waters.

Strategies
- Resize gutters to handle increasing precipitation loads
- Install rain barrels or integrate rainwater run off strategies into landscaping
- Add trees where possible to help lower temperature by providing shade.
- Install solar panels on site or on the secondary elevation.
- Elevate critical mechanical systems on the interior

66 Cove Street
c.1953, vernacular



Existing Conditions
This industrial brick building (c.1953) is typical of many of its small-scale neighbors, built in an section of Bayside that was once part of Back Cove until it was filled in the first half of the 20th century. The area currently experiences nuisance flooding during extreme storm and high tide events. The at-grade entrance is vulnerable to street flooding. Likewise, mechanicals systems on the exterior, and possibly the interior, are at risk from street flooding. Impermeable paving in the parking area surrounding the building does not allow storm water to penetrate into the ground and raises the temperature more than a vegetated surface would do.

Strategies
- Install a cool roof on flat or low-slope roofs to reduce interior temperature and reduce heat island effects
- Install solar panels on the roof in consultation with a structural engineer, or at the rear of the site
- Reduce impermeable paving in the parking area
- Add trees where possible to help lower temperature by providing shade
- Install temporary, deployable barrier at at-grade entrances during storm events
- Elevate critical mechanical systems on the exterior

27 Edmund S. Muskie Street

Benjamin W. Pickett House
c.1865, Italianate

Existing Conditions

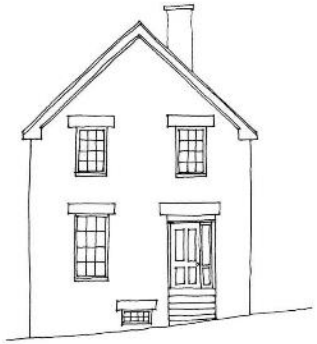
This historic single family residence (c.1865) is built very close to grade and located in a low-lying area of Ferry Village identified as at risk to flooding from rain and storm surges. With the building sill located close to grade, even minimum levels of flooding would submerge the building's wood framing, siding, and trim. The front entrance is also very close to grade and susceptible to damage from flood waters. Elevated levels of ground water could impact the basement, damaging critical mechanical systems.

Strategies

- Elevate critical mechanical systems on the interior
- Size gutters to handle increasing precipitation loads
- Install rain barrels or integrate rainwater run off strategies into landscaping
- Slope grade and landscaping away the foundation to help drainage
- Install solar panels on the ell roof, garage, or at the rear of the site
- While a last resort, elevating the entire structure to raise the wood sills and entry above projected flood levels is an option. It would be prudent to raise the surrounding site where possible to mask the visual impact of the structure's elevation.

17 Brattle Street

c.1849, Greek Revival



Existing Conditions

This single-family residence rests on a high foundation in an elevated area in Bayside. Although not identified as at risk to flooding from rain and storm surges, storm water runoff from nearby paved streets and parking lots uphill and across the street from the dwelling could impact the masonry foundation and at-grade openings. A large deciduous tree shades the south-facing side yard. The lot could be improved to encourage site drainage away from the building's foundation.

Strategies

- Install solar panels on the ell roof or main roof, set back from the edge of the gable end
- Elevate critical mechanical systems on the interior
- Integrate rainwater run off strategies into landscaping
- Maintain masonry, particularly chimneys to reduce damage from loose falling bricks and water infiltration
- Install hardware around openings at street level to accommodate retractable flood shields during storm events
- Slope grade and landscaping away from the foundation on the uphill side of the house to improve site drainage

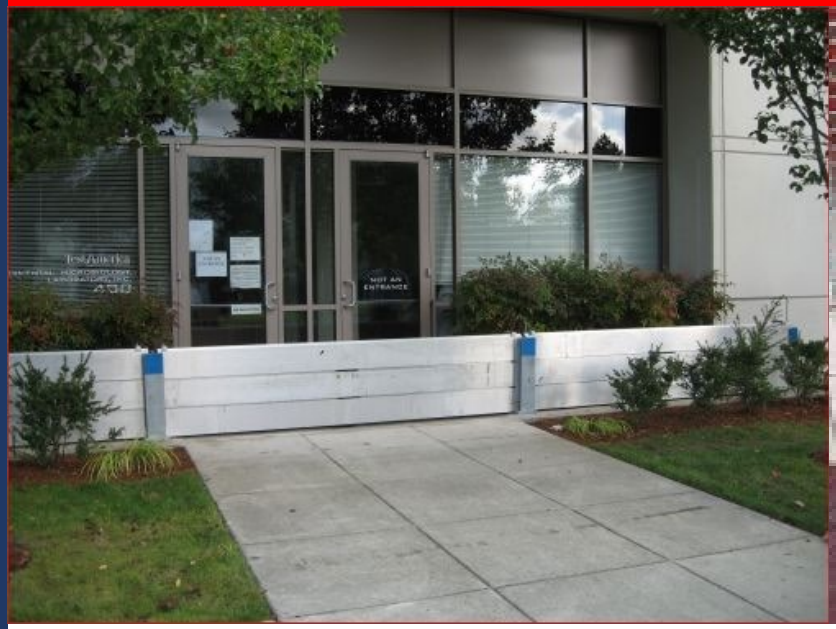
Basement Windows & Openings

Put weather protection sealant around basement windows

Regrade around sills to direct water away from basement windows

Install flood barriers for basement windows and vents.

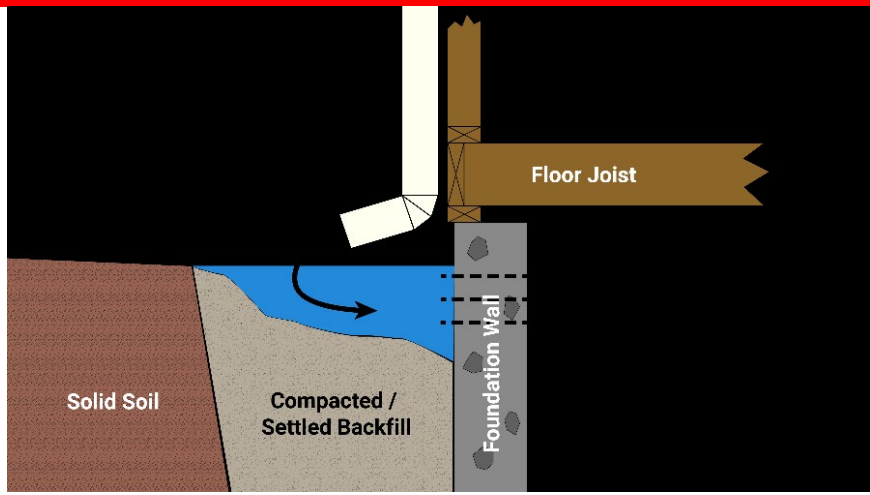
At Grade Entrances

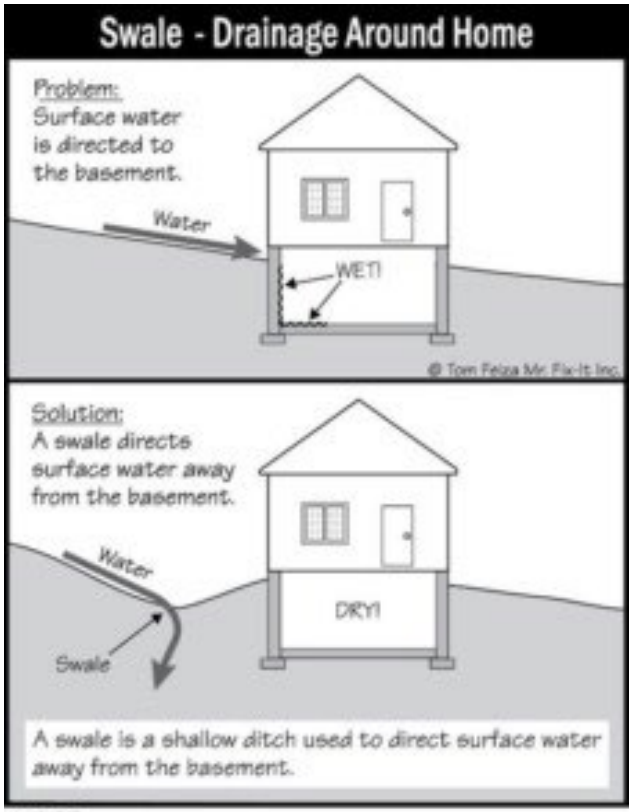


Install flood shields or barriers for entrances at grade.

Reduce Negative Site Drainage

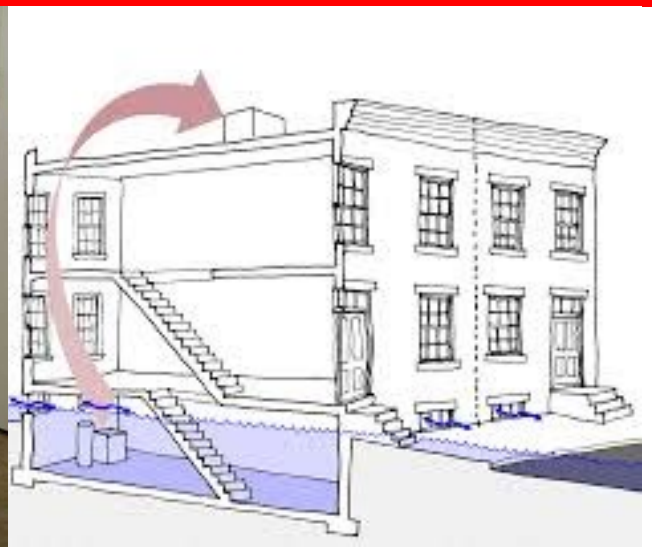
Making Improvements





MOO5

Flood-prone Basements



Anchor fuel/oil tanks, water heaters and furnaces. In a flood, a fuel tank can tip over or float, causing fuel to leak and potentially catch fire.

Elevate mechanical equipment and appliances

Relocate mechanical equipment to roof, attic, or living area above flood levels.

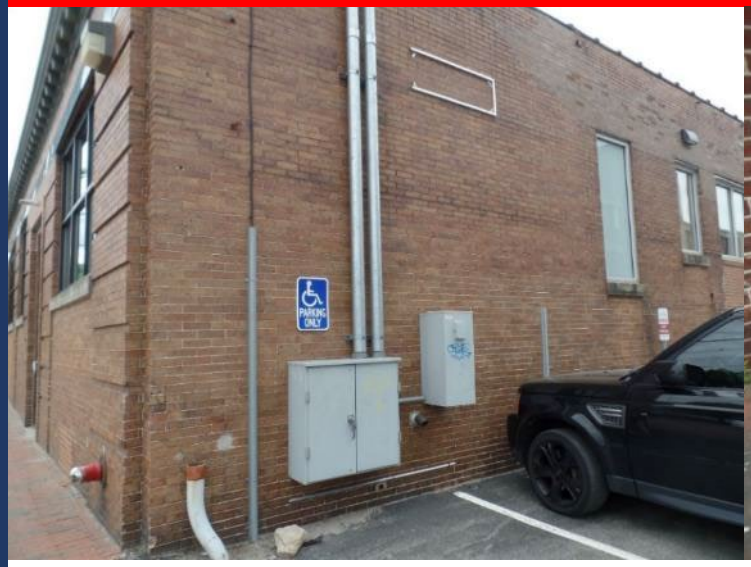
Control Stormwater Runoff

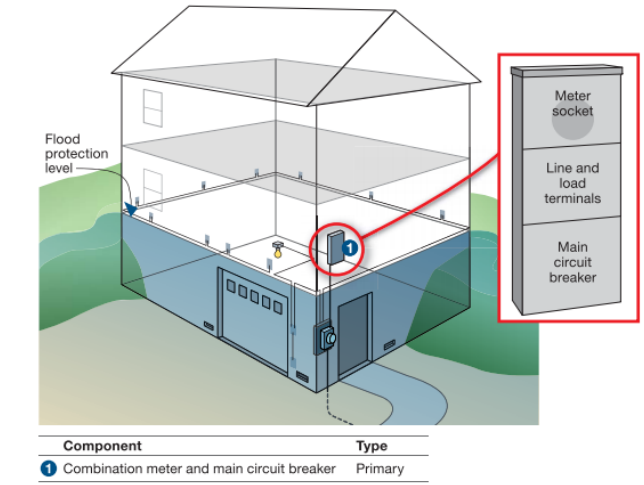
Use a rain barrel to catch water runoff.

Make sure downspouts extend at least ***2 m (6')*** from your basement wall. Water should drain away from your property and neighboring properties.

Raising Utility Entrances

Making Improvements





Component	Type
1 Combination meter and main circuit breaker	Primary

Figure 4-12. Combination meter socket and circuit breaker service disconnect used to allow a main panel to be elevated and protected from flooding when the electrical meter cannot be moved.

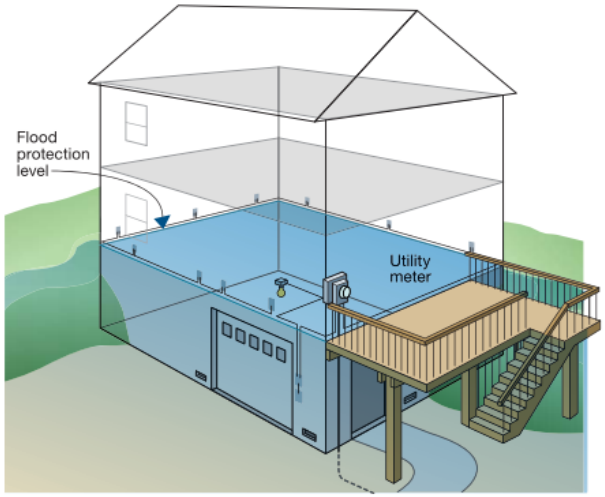
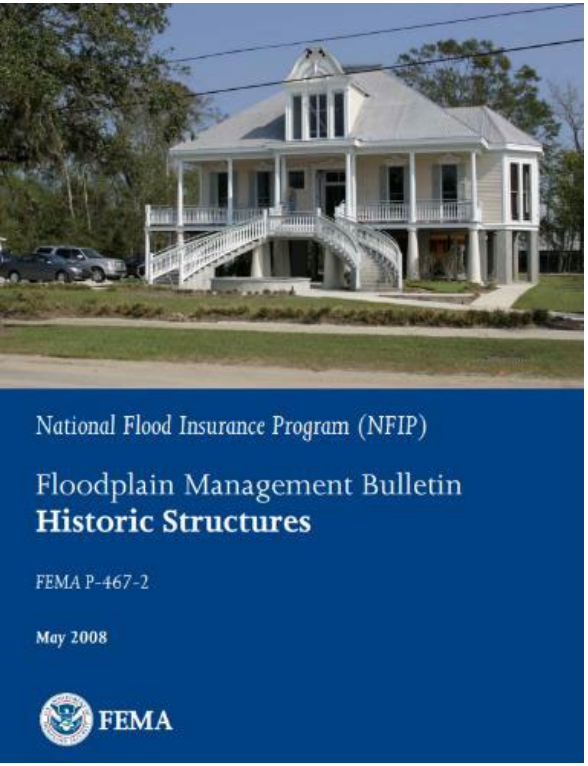
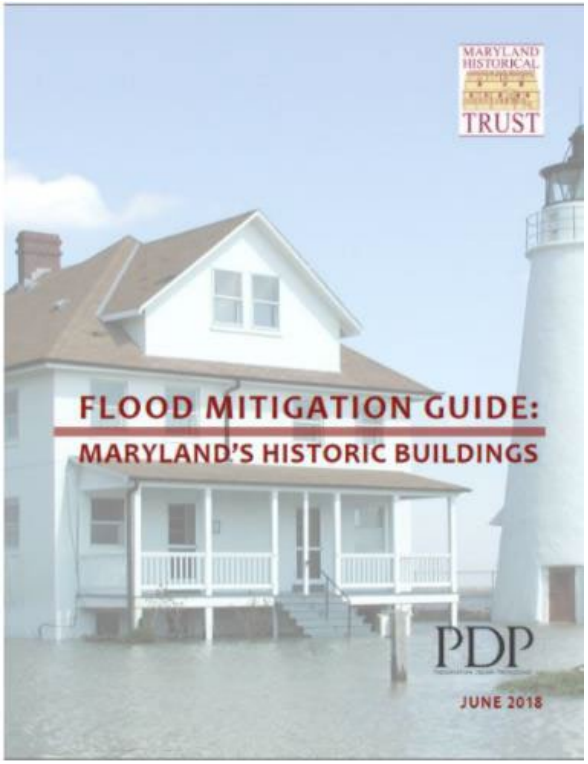
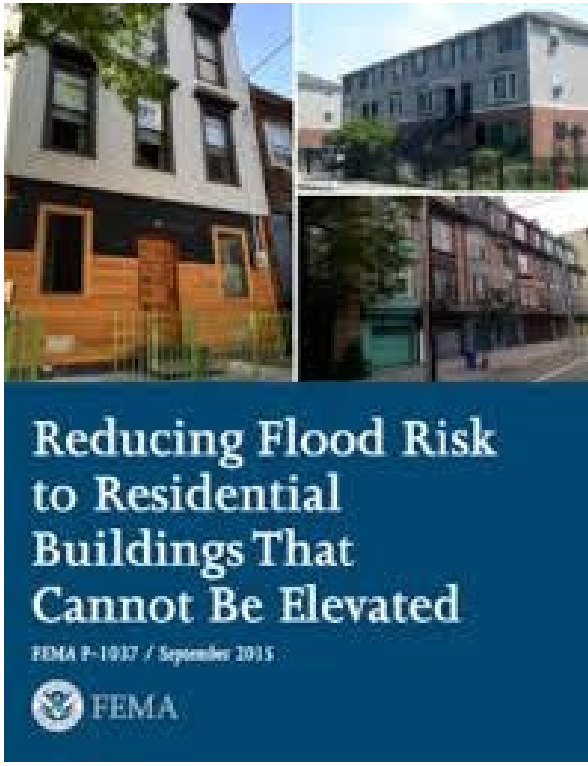


Figure 4-16. Elevating electrical components and routing wiring above the flood protection level protects several primary and secondary electrical components from flood damage.







ADDITIONAL RESOURCES

Thank you!

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