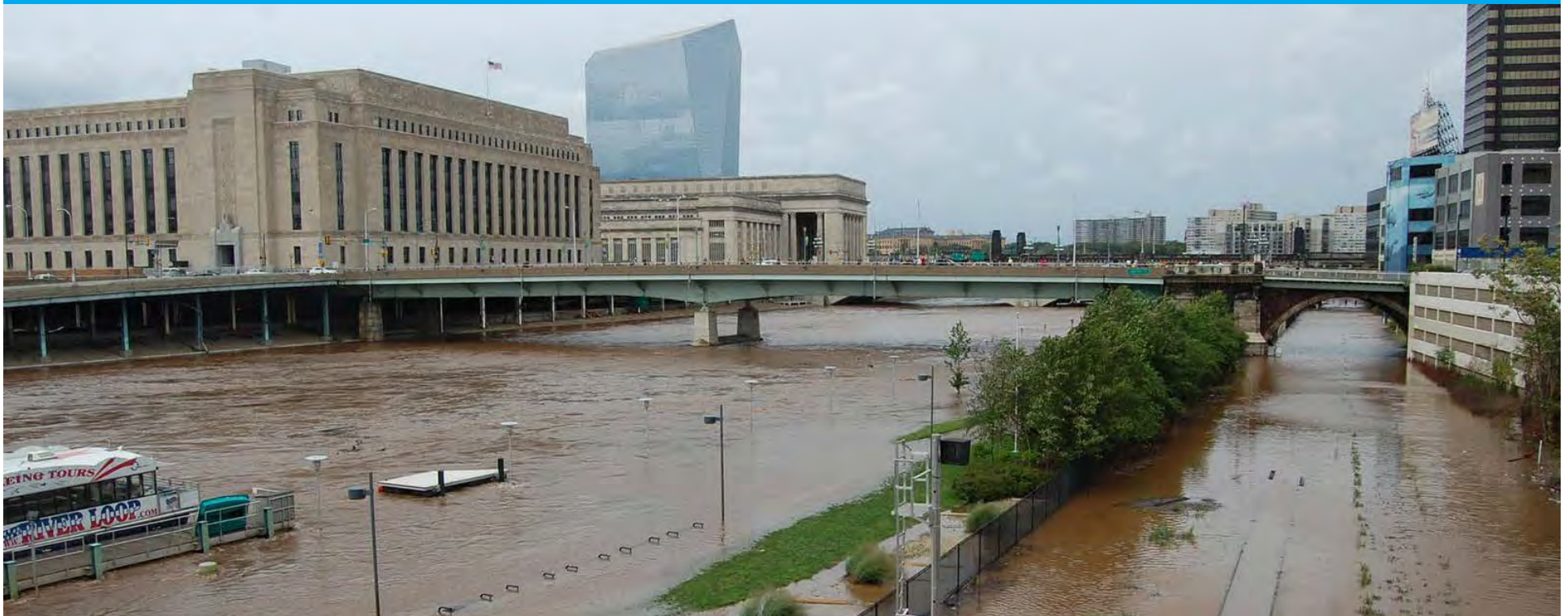


PHILADELPHIA - REGULATIONS & PROCESSES FOR DEVELOPMENT IN THE SPECIAL FLOOD HAZARD AREA



DISCLAIMER

About this Training

- **Advisory** [always review local codes/regulations]
- **Guidance** [best practices and resources – not necessarily adopted codes/regulations]
- **Codes/regulations** are generally based upon adopted City of Philadelphia floodplain regulations [Building Codes (IRC, IBC, IBC Appendix G, & ASCE 24, ASCE 7)] and [Philadelphia Zoning Code]
 - City of Philadelphia has adopted higher standards

NATIONAL FLOOD INSURANCE PROGRAM [NFIP]

FLOOD HAZARD INFORMATION

CODES + REGULATIONS

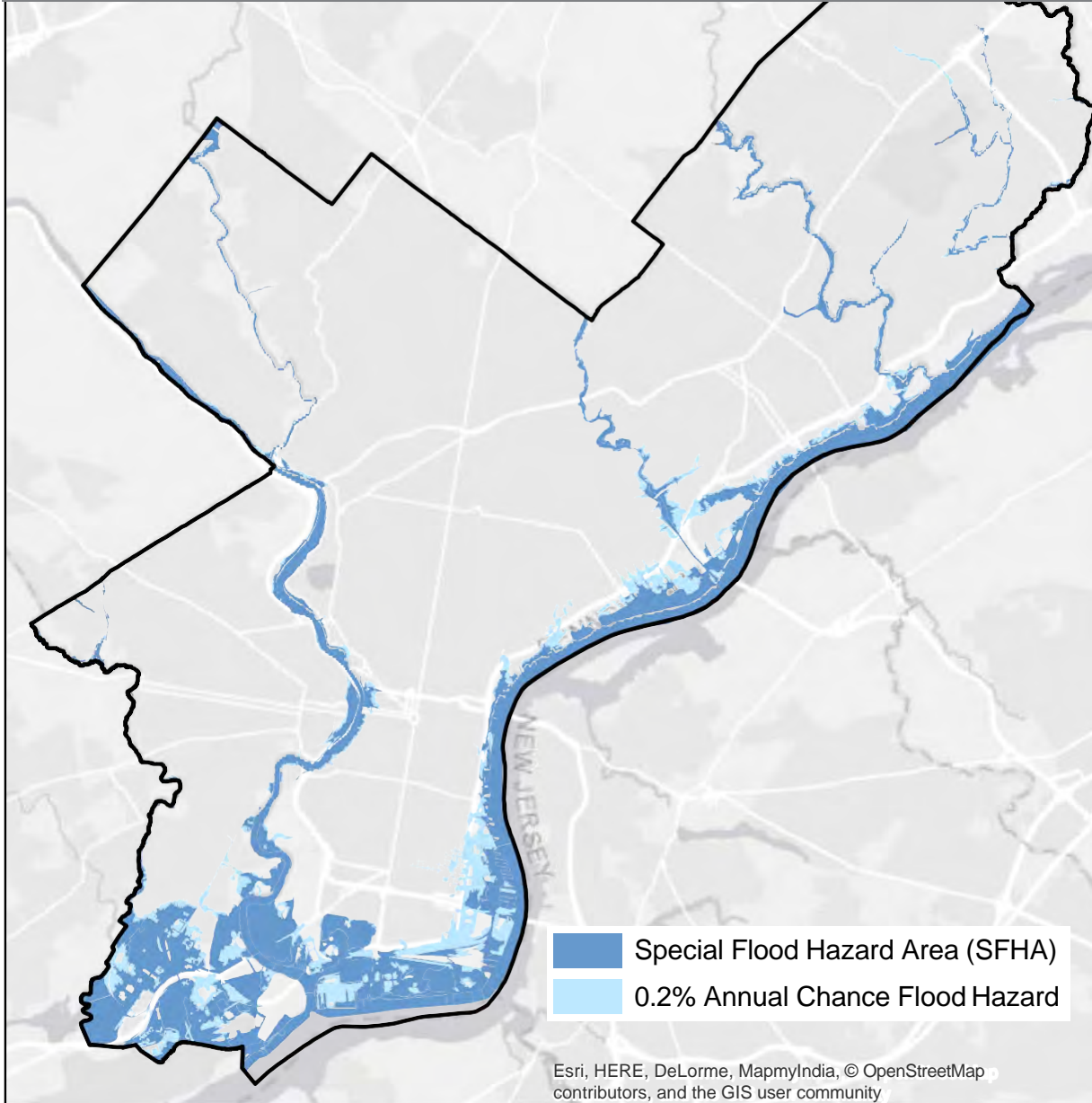
ELEVATION CERTIFICATE

LETTER OF MAP REVISION [LOMC]

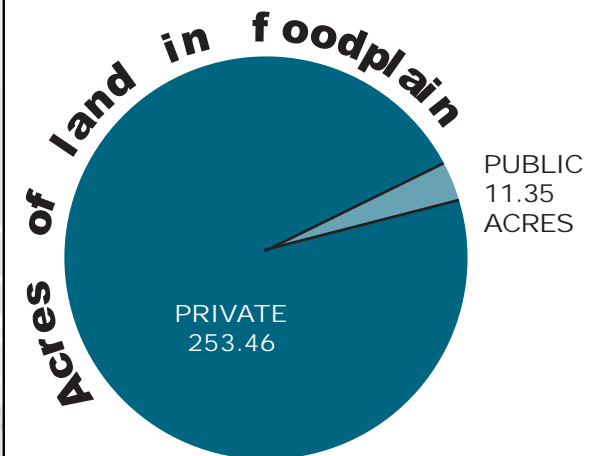
RESOURCES

CITY OF PHILADELPHIA

FEMA FLOODPLAINS



Land Use	Sq. Mi.	%
Residential Low Density	0.1	0
Residential Medium Density	0.2	1%
Residential High Density	0.4	1%
Commercial	0.6	2%
Industrial	4.9	16%
Civic/Institution	0.3	1%
Transportation	5.5	18%
Culture	1.3	4%
Park/Open Space	3.8	12%
Water	11.5	37%
Vacant Land/Other	2.1	7%

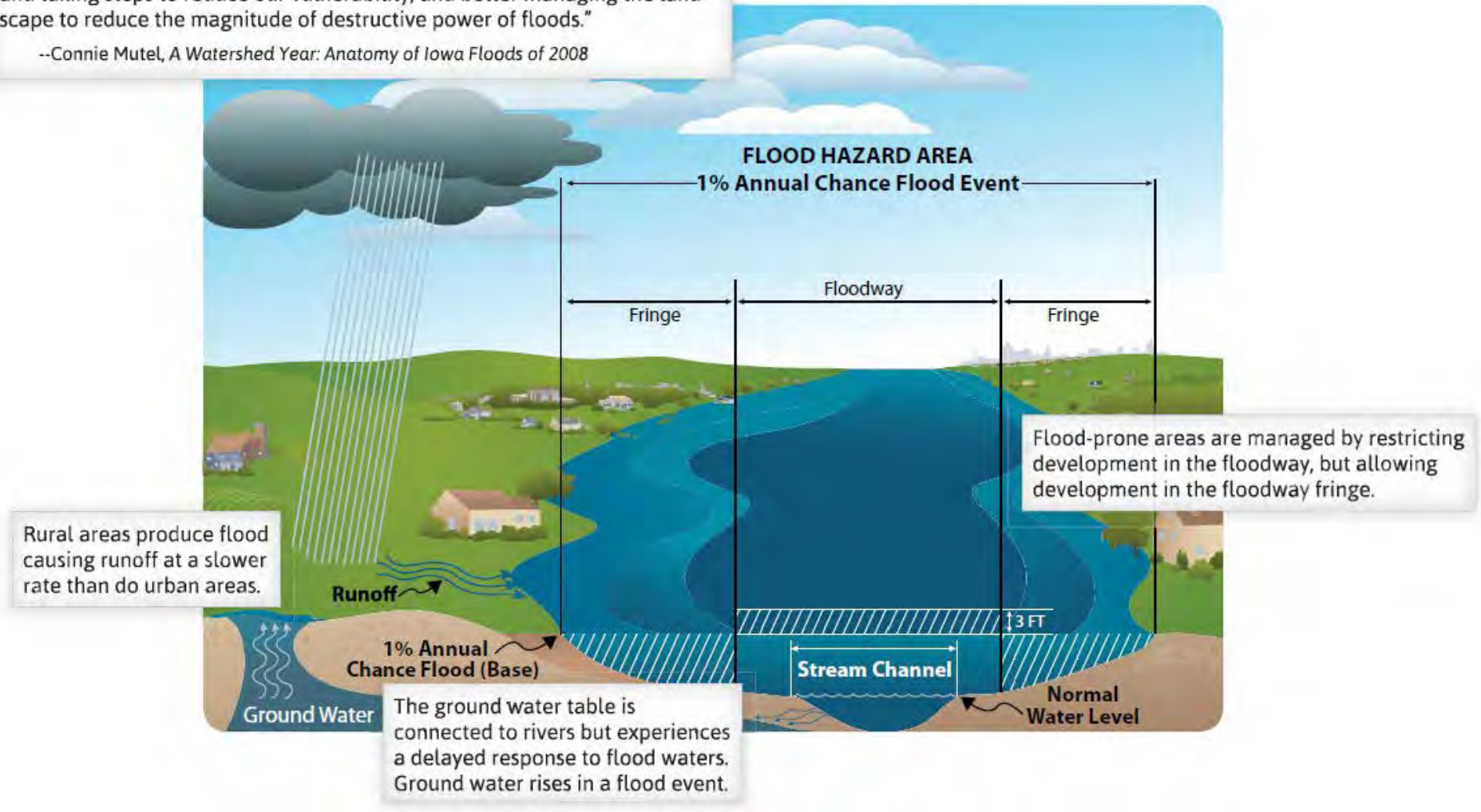


5,756 EXISTING STRUCTURES

WHAT IS A FLOODPLAIN?

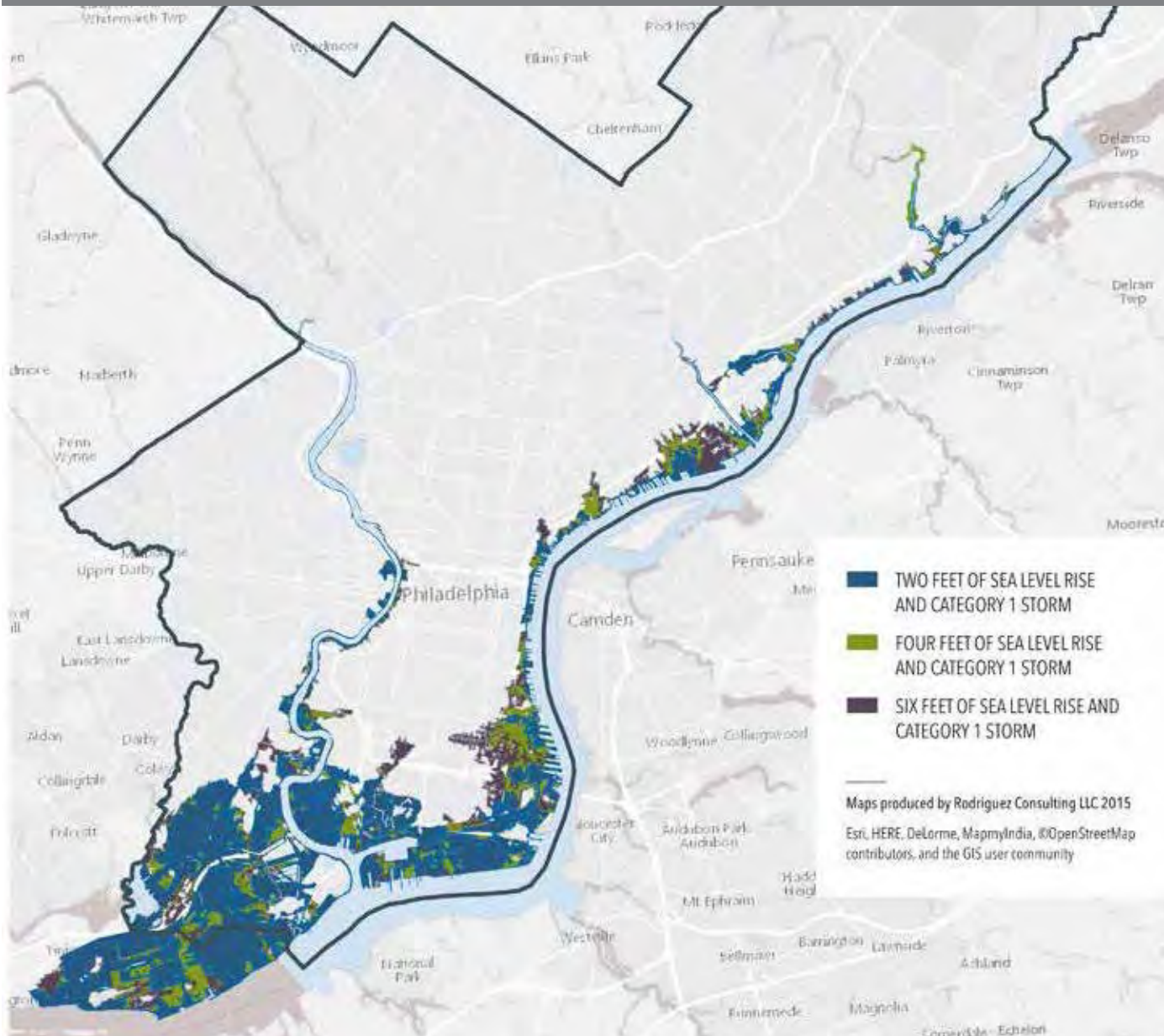
"Living with floods involves two broad activities: better managing the risks and taking steps to reduce our vulnerability, and better managing the landscape to reduce the magnitude of destructive power of floods."

--Connie Mutel, *A Watershed Year: Anatomy of Iowa Floods of 2008*



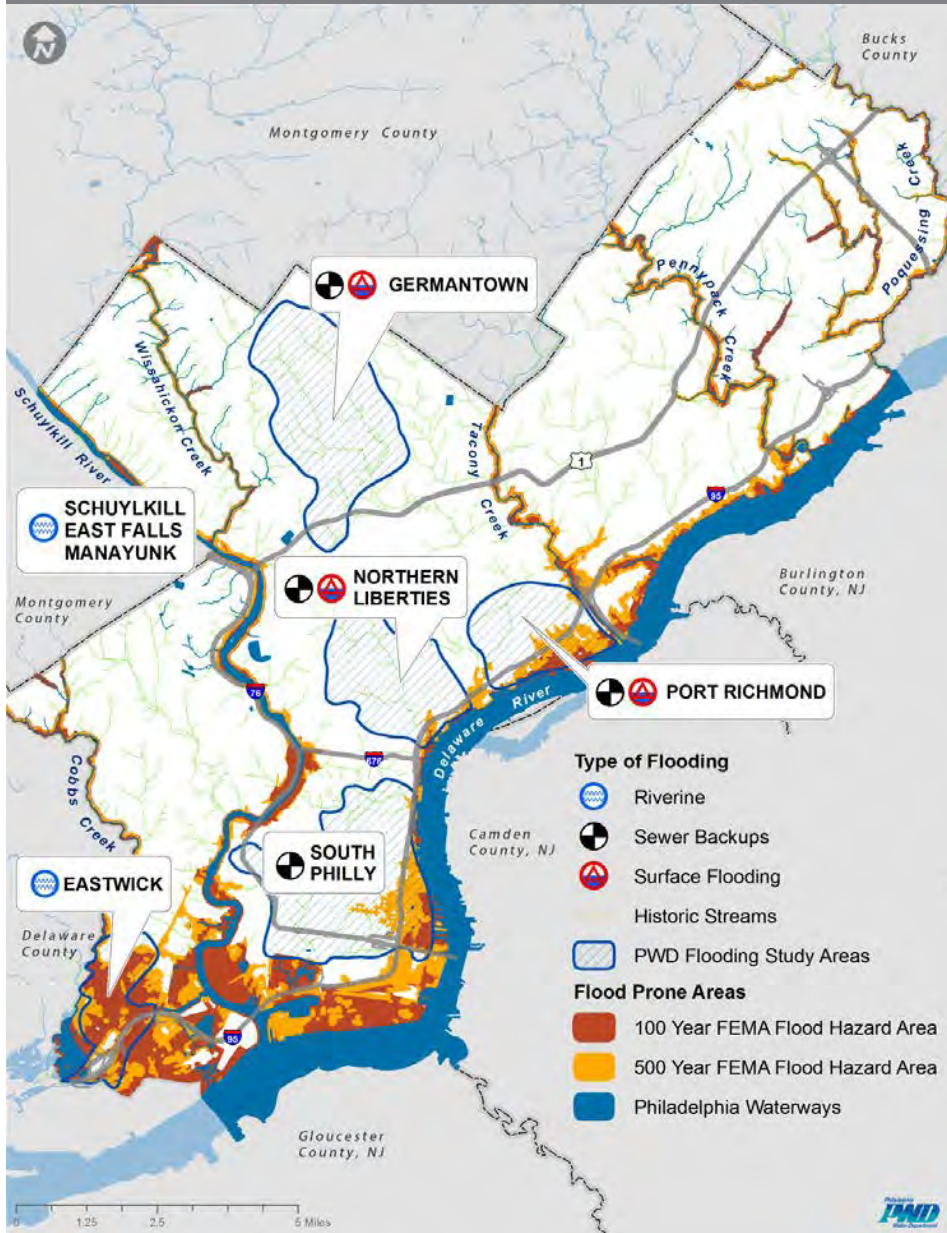
CITY OF PHILADELPHIA

CLIMATE CHANGE FLOODING



- Sea level rise
- Severe storm

CITY OF PHILADELPHIA INFRASTRUCTURE FLOODING



- Stormwater
- Sewers



BACKGROUND - NATIONAL FLOOD INSURANCE PROGRAM [NFIP]

Created by the National Flood Insurance Act of 1968

- Participation is **voluntary, but mandatory in PA**
 - Adopt and enforce regulations
 - Eligible for flood insurance
- Benefits of participation:
 - Flood insurance
 - Grants and loans
 - Disaster assistance
 - Federally-backed mortgages



COST OF FLOOD INSURANCE

WHY YOU NEED

FLOOD INSURANCE



1 INCH of water = **\$21,000** in property damage
(2,000 sq.ft. home, on average)

\$50 BILLION in economic losses are incurred each year due to flooding



FLOODS:
#1 natural disaster in the US

\$42,000 average flood insurance claim

ONLY 14% of homeowners have flood insurance

26 major flood disasters in 2015



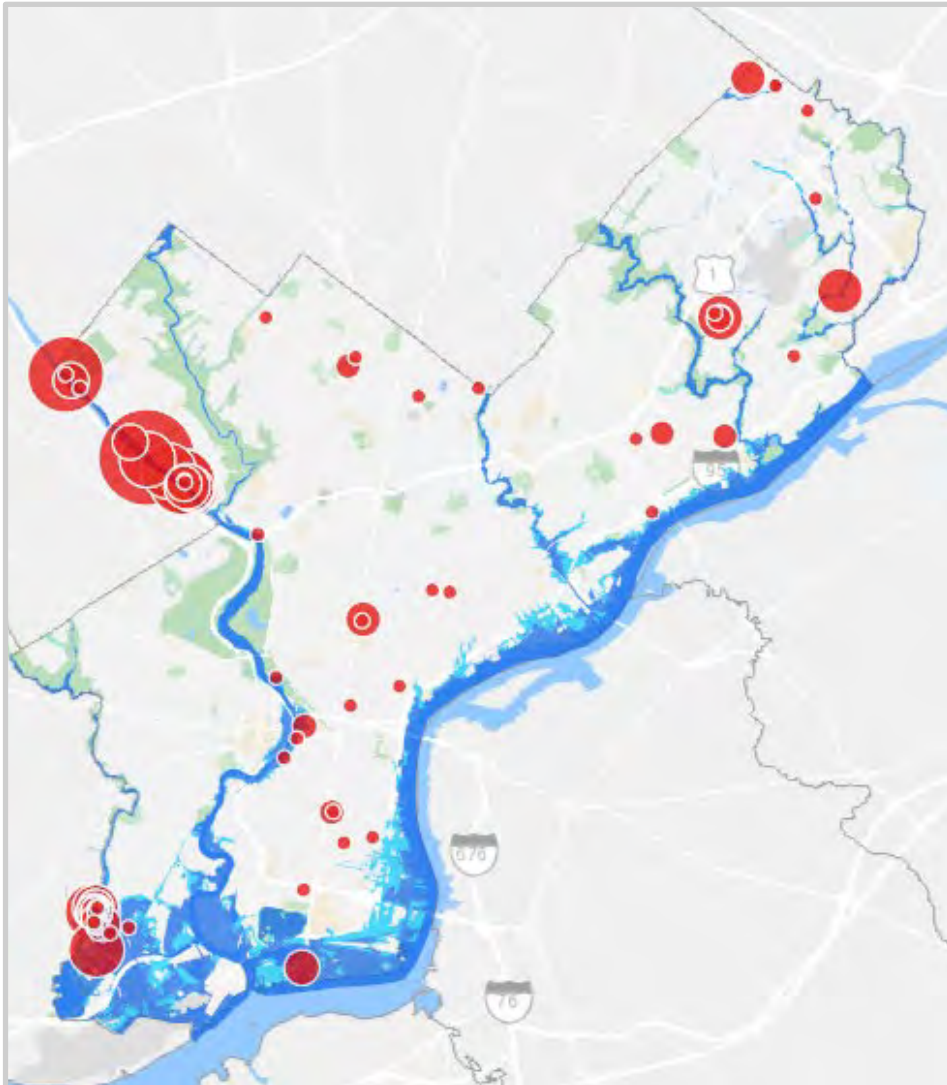
COST OF FLOOD INSURANCE - PHILADELPHIA EXAMPLE



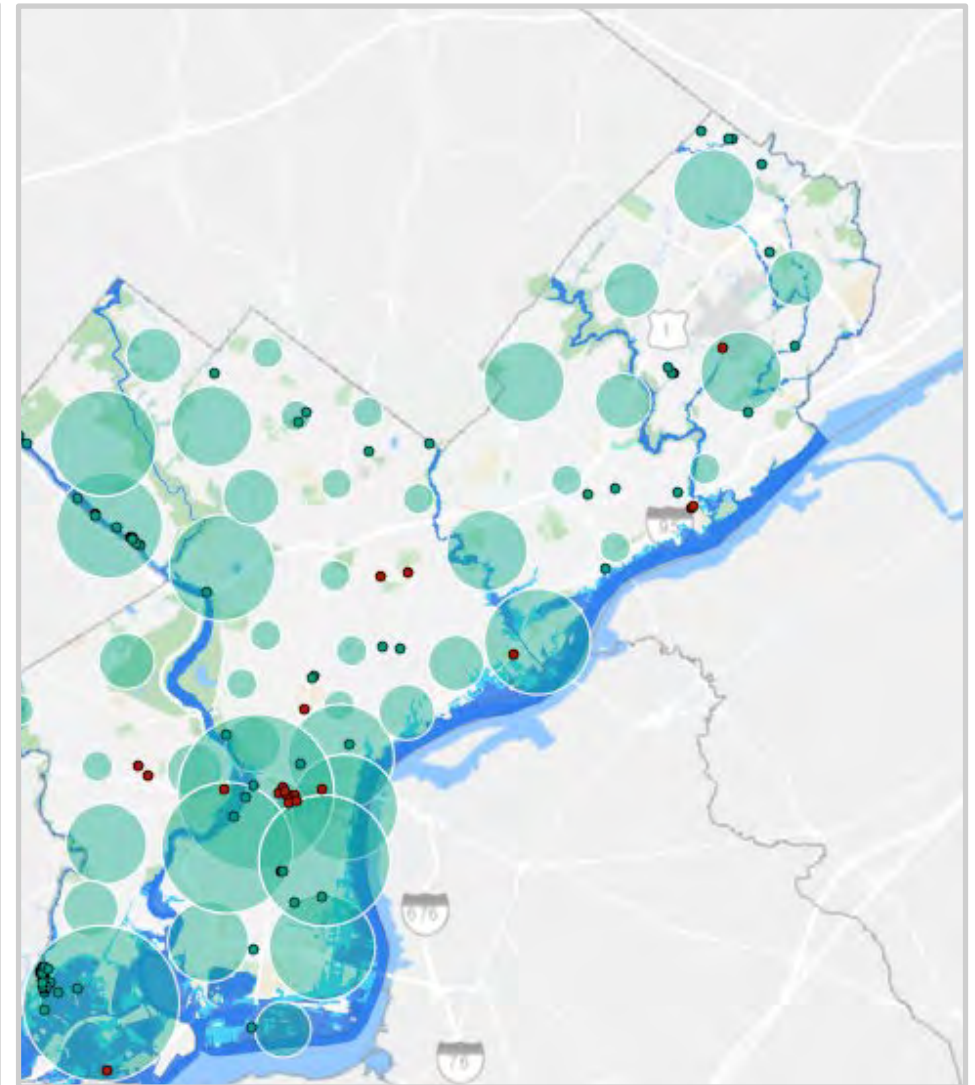
- Above diagram is based on a 2,500 SF townhouse in Philadelphia located in the Special Flood Hazard Area
- Buildings principally over water **cannot** get insurance through NFIP (IE. pier construction)

COST OF FLOOD INSURANCE - Losses and Insurance

Repetitive Loss Properties



NFIP Policies (+/- 4,200)



NFIP ROLE: Federal and State

FEDERAL

- National program oversight
- Risk Identification (mapping)
- Establish development/building standards
- Provide insurance coverage



FEMA

STATE

- State program oversight
- Establish development/building standards
- Provide technical assistance to local communities/agencies
- Evaluate and document floodplain



pennsylvania
DEPARTMENT OF COMMUNITY
& ECONOMIC DEVELOPMENT

NFIP ROLE:

City of Philadelphia [Local]

Local Officials and Floodplain Administrators [Licenses & Inspections, Planning Commission, Floodplain Manager]



City of
Philadelphia

- Adopt and enforce floodplain management ordinance compliant with Federal/State laws
- Issue or deny development
- Inspect development and maintain records
- Make substantial damage determinations
- Regulations apply to Special Flood Hazard Area (SFHA) on the Flood Insurance Rate Map (FIRM)
- Development oversight is a local responsibility our local regulations are located in the Zoning and Building Codes

FEMA COMMUNITY ASSISTANCE VISIT [CAV]

- Audit of the last 5 years of building permits issued in the special flood hazard area (SFHA)
- Tour of all SFHA's throughout the City for non-permitted development
- Review of the City “floodplain program”

RESULT:

- Over **150 possible violations were discovered and additional documentation is required for full compliance with the regulations**
- Violations may lead to the City being placed on **Probation**
 - \$50 surcharge to policy holders (approx. 4,200 policy holders)

UPDATE:

- +/- 40 still in review/mitigation
- Mostly documentation requests (Elevation Certificates, cost estimates, etc)

ORDINANCE NON-COMPLIANCE

Failure to adopt a compliant ordinance by map effective date or having non-compliant ordinance = **easiest way to get suspended**

- Serious ramifications:
 - Suspension of NFIP eligibility
 - No mortgages or home equity loans in floodplain areas
 - No renewals of existing flood insurance policies
 - Loss of most forms of Disaster Assistance
 - No federal grants or loans
 - Loss of subsidized insurance for Pre-FIRM structures

FLOOD HAZARD INFORMATION

FEMA FLOOD MAP SERVICE CENTER

msc.fema.gov

FEMA Flood Map Service Center: Search By Address

Enter an address, place, or coordinates: ?


philadelphia pa


Whether you are in a high risk zone or not, you may need [flood insurance](#) because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than \$400 per year. Call your insurance agent today and protect what you've built.

Learn more about [steps you can take](#) to reduce the risk flood damage.

Search Results—Products for PHILADELPHIA, CITY OF

The flood map for the selected area is number **4207570183G** effective on **01/17/2007**

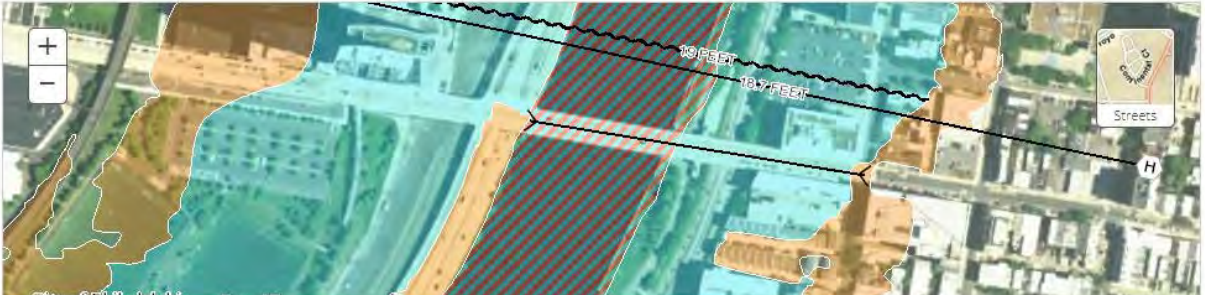
DYNAMIC MAP

PRINT MAP / FIRMette

MAP IMAGE

DOWNLOAD FIRM PANEL

Changes to this FIRM ?

- Revisions (0)
- Amendments (15)
- Revalidations (0)

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette.



→ ADDRESS

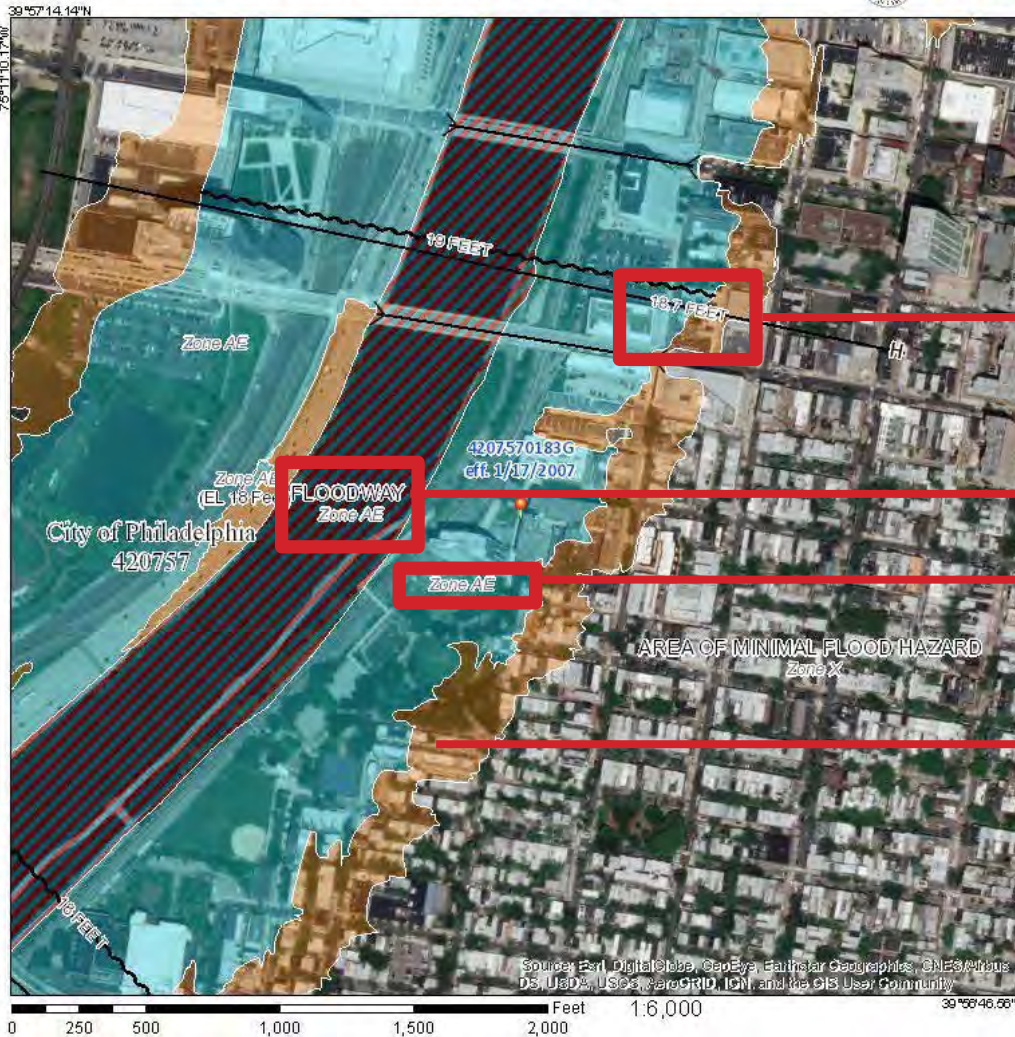
→ CREATE FIRMette-
8.5x11" Print of
property on FIRM Map

→ FIRM DATE

→ FIRM PANEL #

FIRMette with mapped floodway

National Flood Hazard Layer FIRMette



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) Zone A, V, AO, A99
- With BFE or Depth
- Regulatory Floodway Zone AE, AO, AH, VE, AR

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS

- Area of Minimal Flood Hazard Zone X
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Base line
- Profile Baseline

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

SPECIAL FLOOD HAZARD AREA - regulated by City of Philadelphia

CROSS SECTION - w/BFE

ZONE AE - FLOODWAY
ZONE AE

0.2% (not regulated)

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below.

accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/9/2018 at 9:08:42 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

FIRMette

w/o mapped floodway [Coastal Flood Hazard]

- areas mapped with a LiMWA, must comply with Coastal A Zone codes/regulations

National Flood Hazard Layer FIRMette



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) Zone X, Y, ADP
- With BFE or Depth Zone AE, AG, AM, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes, Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS

- Area of Minimal Flood Hazard Zone X
- Effective LOMs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES

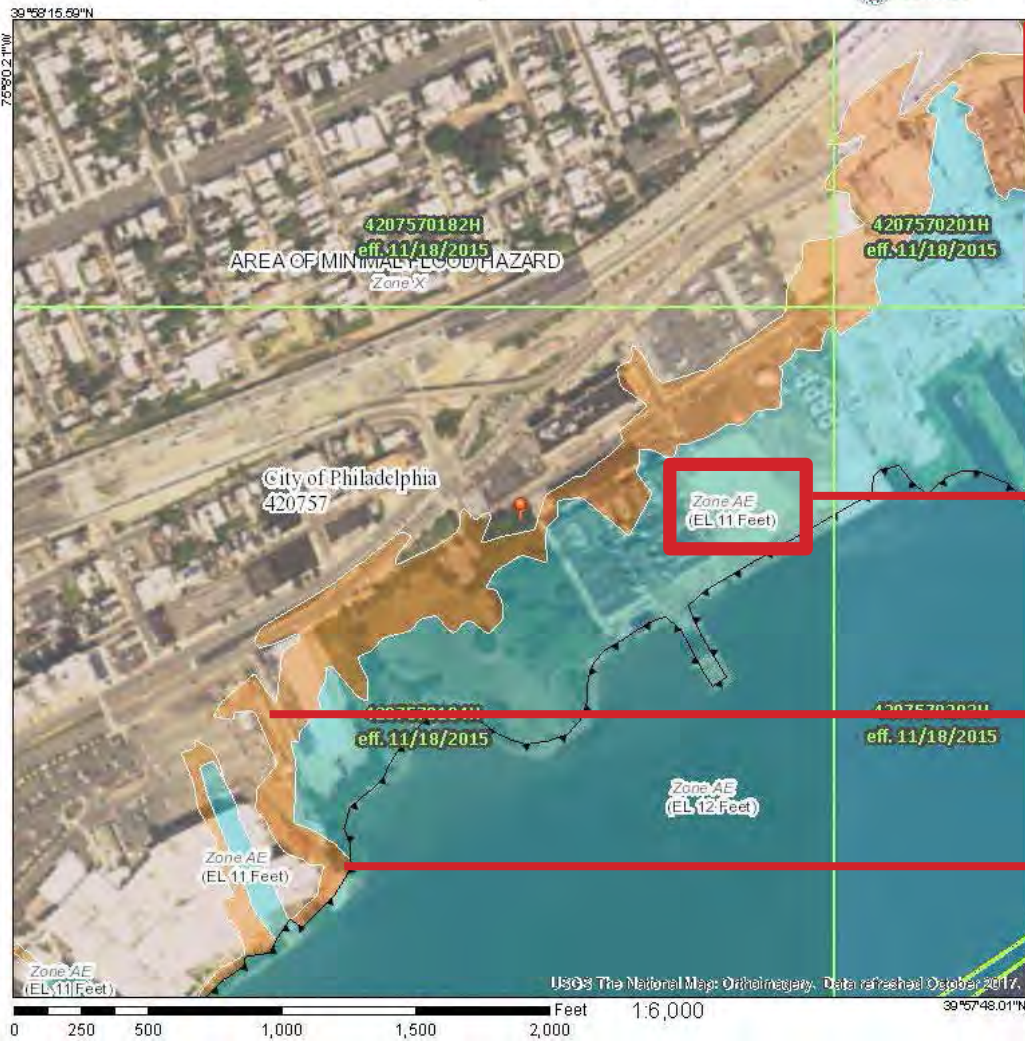
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transsect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transsect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped



→ **SPECIAL FLOOD HAZARD AREA - regulated by City of Philadelphia**

→ **COASTAL FLOOD HAZARD ZONE AE**

→ **0.2% (not regulated)**

→ **LiMWA - limit of moderate wave action**

The point displayed on this map is an approximate point selected by the user and does not represent an authoritative property location.

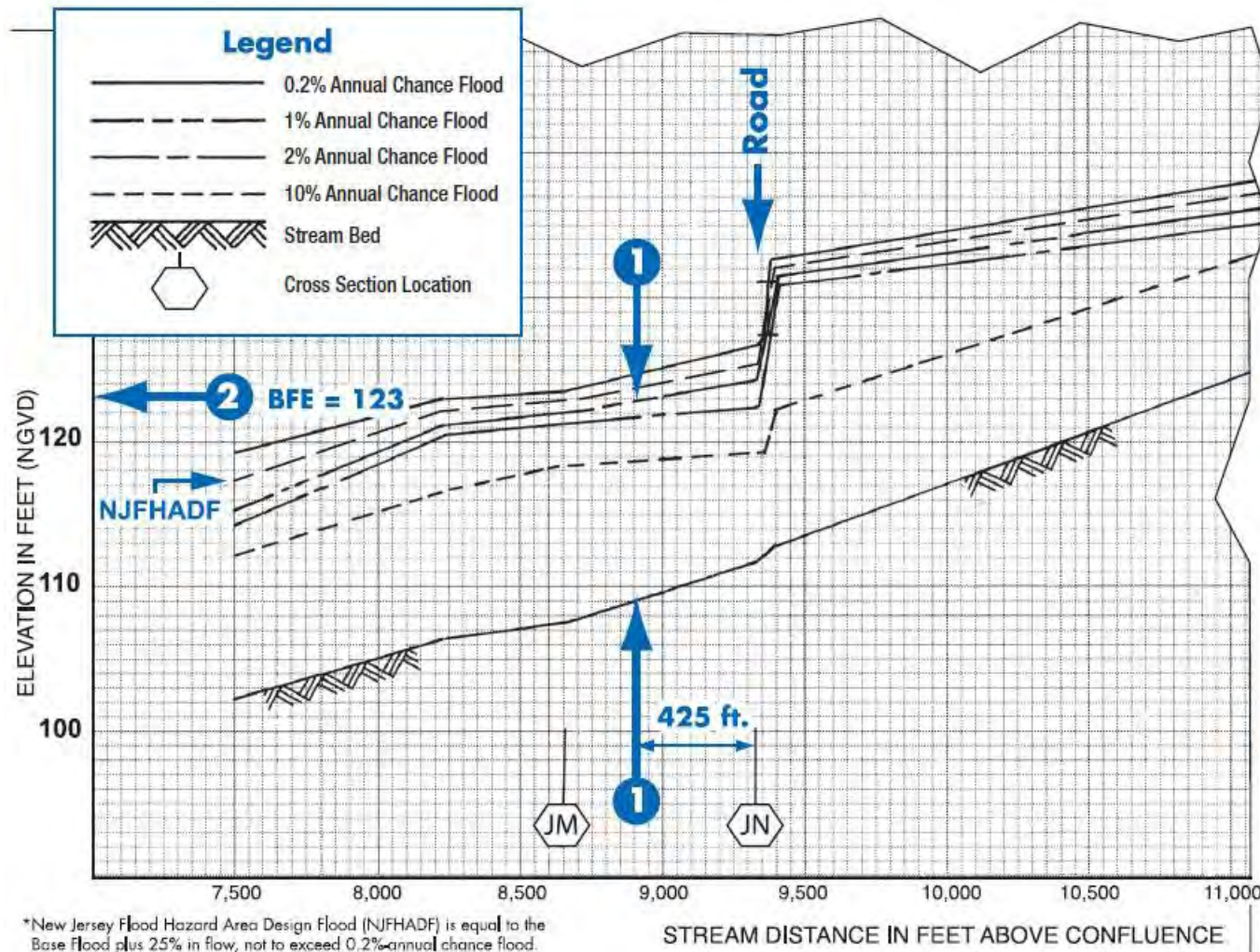
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the National Flood Hazard Layer (NFHL) and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas can not be used for regulatory purposes.

FLOOD INSURANCE STUDY [FIS]

Riverine flood profile to determine BFE



Flood Profiles from Flood Insurance Study reports can be used to determine the BFE at a specific site. Profiles also show estimated water surface elevations for floods other than the 1% annual chance flood (100-year).

- 1** On the effective flood map, locate your site by measuring the distance, along the profile baseline of the stream channel, from a known point such as a road or cross section, for example, JM or JN .
- 2** Scale that distance on the Flood Profile and read up to the profile of interest, then across to determine the BFE, to the nearest 1/10 of a foot. (Answer: 123 feet).

FEMA FLOOD MAP SERVICE CENTER

Previous FIRM maps and Flood Insurance Profiles [FIS]

msc.fema.gov

FEMA Flood Map Service Center: Search By Address

Enter an address, place, or coordinates: → **ADDRESS**

Whether you are in a high risk zone or not, you may need [flood insurance](#) because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than \$400 per year. Call your insurance agent today and protect what you've built.

Learn more about [steps you can take](#) to reduce the risk flood damage.

Search Results—Products for **PHILADELPHIA, CITY OF**

The flood map for the selected area is number **4207570183G**, effective on **01/17/2007**

→ **“Show all products”**

Search Results for PHILADELPHIA, CITY OF

Click [subscribe](#) to receive email notifications when products are updated.

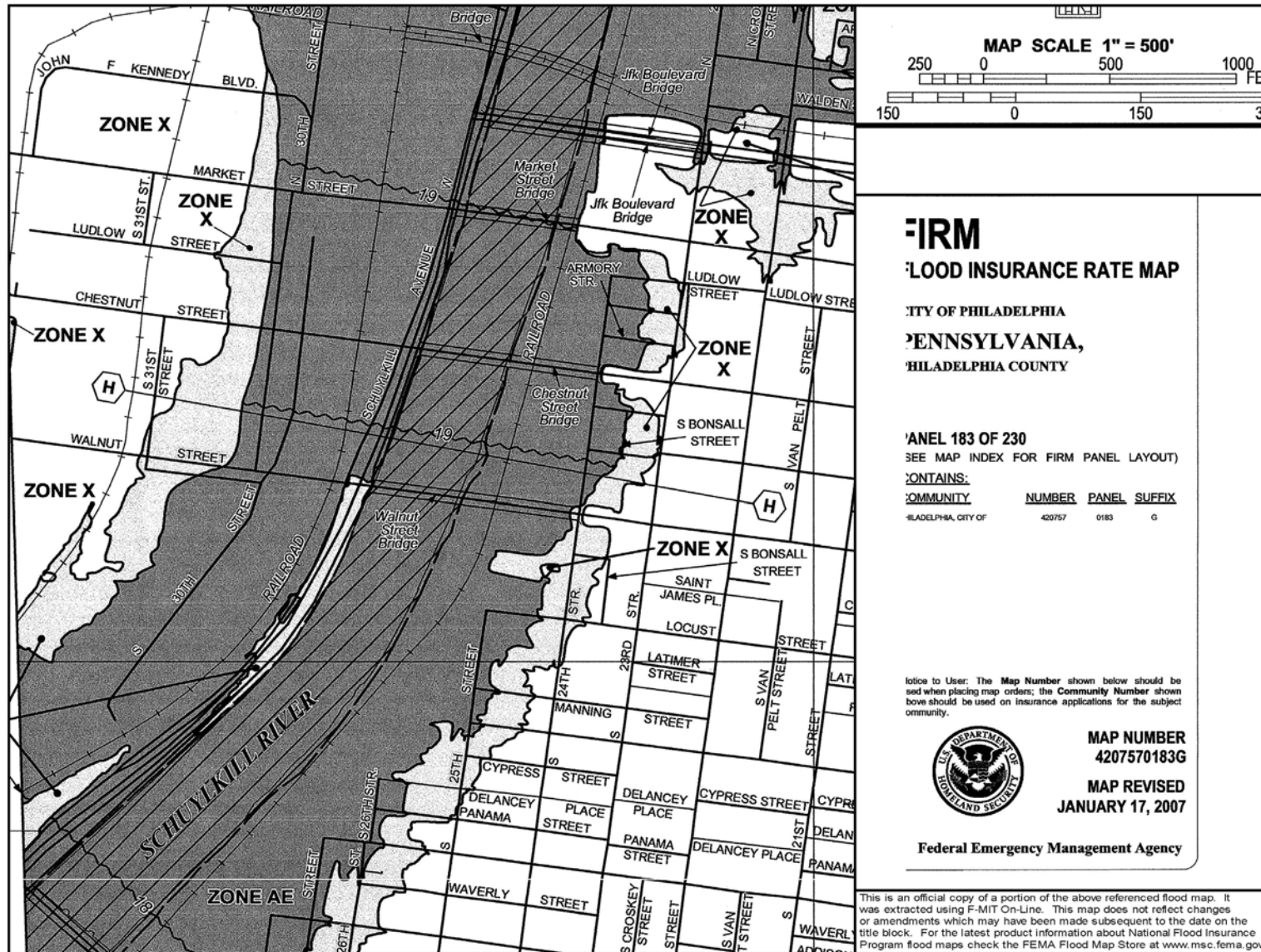
Please Note: Searching All Products by county displays all products for all communities within the county. You can refine your search results by specifying your specific jurisdiction location using the drop-down menus above.

- Effective Products (89)
- Preliminary Products (0)
- Pending Product (0)
- Historic Products (139)
- Flood Risk Products (5)

SEE all effective and historic maps and profiles

FIRMette

Print version (previous)



CODES+ REGULATIONS

NFIP + Building Codes



* NFIP-consistent administrative provisions, community-specific adoption of Flood Insurance Studies and maps, and technical requirements for development outside the scope of the building code (and higher standards, in some communities).

Figure 1-1: Relationship of NFIP regulations to building code flood provisions

CODES + REGULATIONS

TITLE 14. ZONING AND PLANNING

Editor's note: To view the historical version of Title 14 (repealed as of August 22, 2012), please [click here](#).

Preface: Bill No. 110845

Chapter 14-100. General Provisions

§ 14-101. Purpose.

§ 14-102. Citation and Title.

§ 14-103. Authority.

- (1) Authority.
- (2) Construction of Authority.
- (3) Department of Licenses & Inspections.
- (4) Zoning Board of Adjustment.

§ 14-104. Applic:

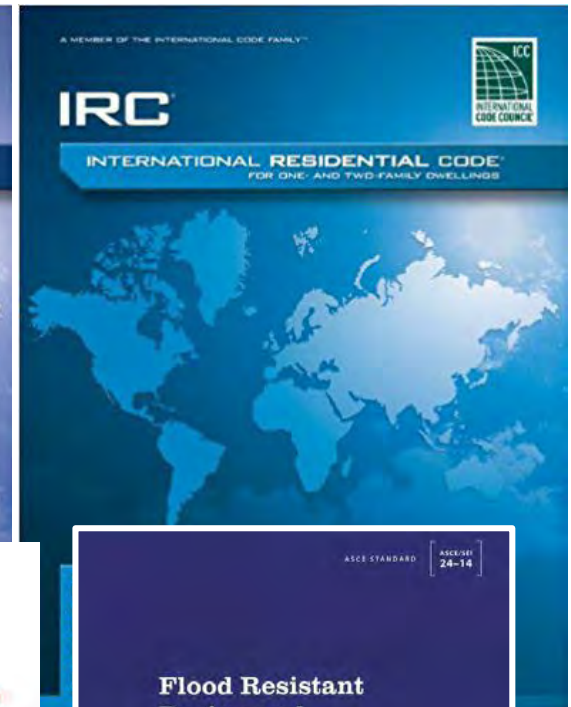
- (1) Appli
- (2) Com
- (3) Prope

§ 14-105. Relatio

- (1) The C
- (2) Amen
- (3) Adopt

§ 14-106. Zoning

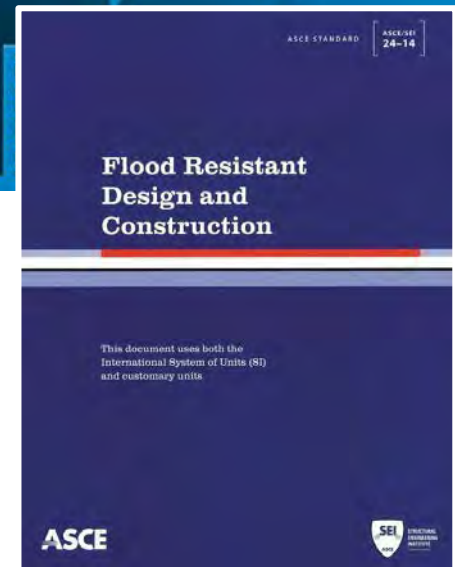
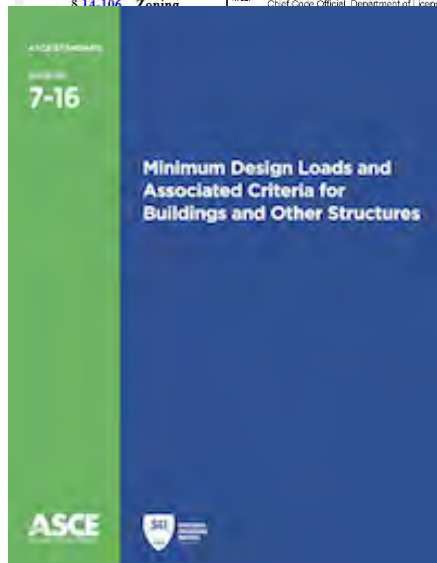
DEPARTMENT OF LICENSES AND INSPECTIONS CODE BULLETIN	
No. A-1702	
SUBJECT OF BULLETIN: DEVELOPMENT IN SPECIAL FLOOD HAZARD AREAS PERMIT DOCUMENT REQUIREMENTS	REFERENCE CODE SECTIONS: A-301.5; A-304.1; A-305.2
ISSUED BY:	ISSUE DATE: August 24, 2017
REVISION DATE:	REVISION DATE:
NAME: Michael E. Fink	TITLE: Chief Code Official, Department of Licenses and Inspections
PAGE 1 OF 6	



IBC Appendix G - Flood-Resistant Construction

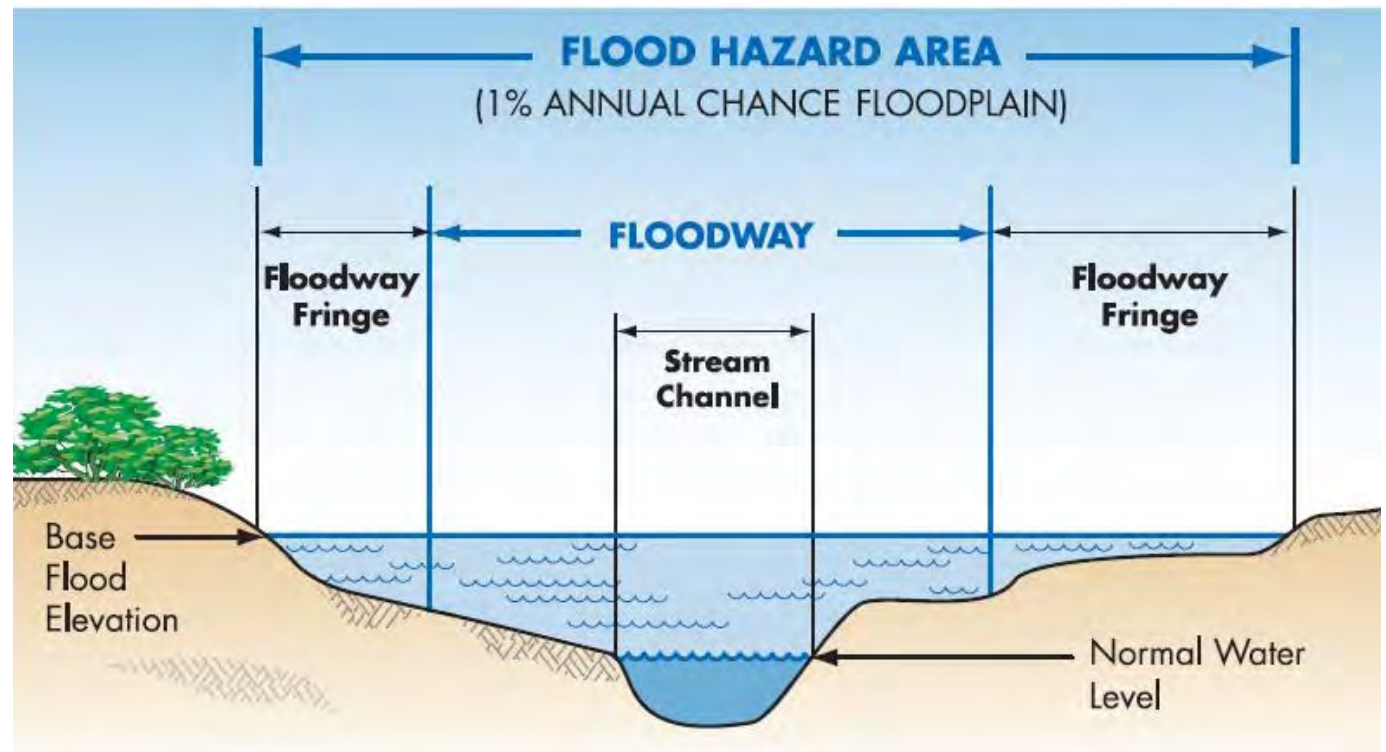
- Addresses flood-related administrative requirements
- The only place in the I-Code that addresses development **other than buildings**

G101 Administration	G501 Manufactured Homes
G102 Applicability	G601 Recreational Vehicles
G103 Powers and Duties	G701 Tanks
G104 Permits	G801 Other Building Work
G105 Variances	G901 Temp Structures & Temp Storage
G201 Definitions	G1001 Utility & Miscellaneous Group U
G301 Subdivisions	
G401 Site Improvement	



DEFINITION OF DEVELOPMENT in Special Flood Hazard Areas [SFHA]

- development located in flood hazard areas, including the subdivision of land; installation of utilities; placement and replacement of manufactured homes; new construction and repair, reconstruction, rehabilitation or additions to new construction; substantial improvement of existing buildings and structures, including restoration after damage;
temporary structures and temporary or permanent storage; utility and miscellaneous buildings and structures



NFIP

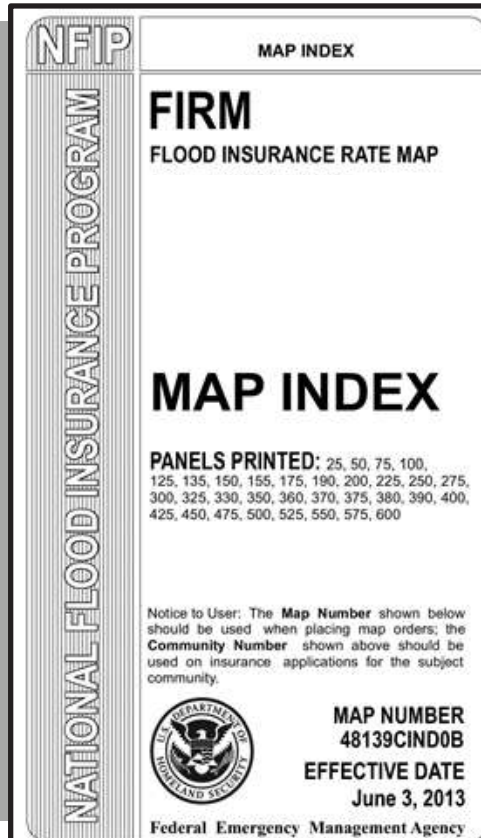
Key Dates

PRE-FIRM

**BUILT BEFORE
DECEMBER 31, 1979**

or structures mapped into SFHA's
post construction, see historical
FIRM maps

Regulations **do not** apply
unless substantially improved,
but mitigation is always
highly suggested



Although NFIP was created in
1968 the City of Philadelphia
joined on December 31, 1979

POST-FIRM

**BUILT AFTER
DECEMBER 31, 1979**

- December 31, 1979 to
August 2012 = BFE+12"
- September 2012 to present
= BFE+18"

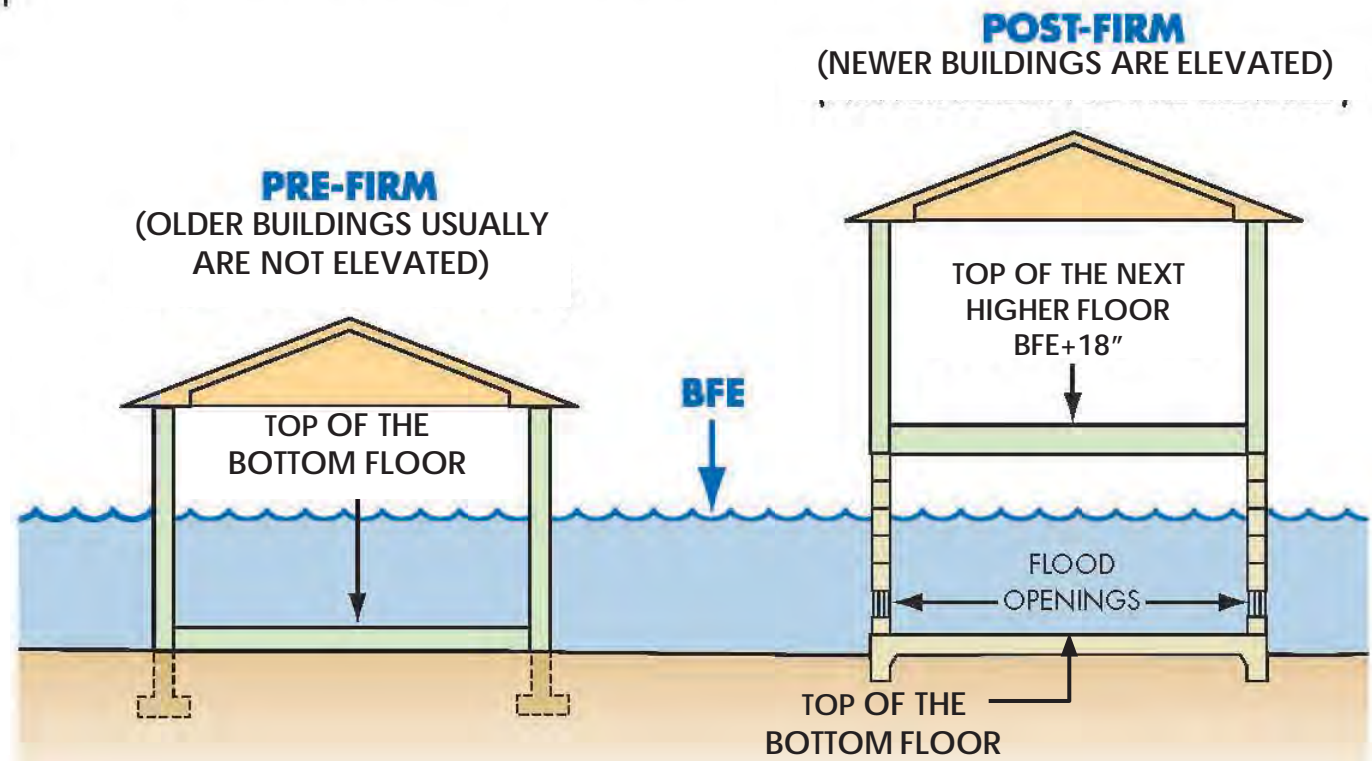
MUST maintain compliance from
date of initial construction and/
or substantial improvement

BUILDING PERMITS

Lowest Floor

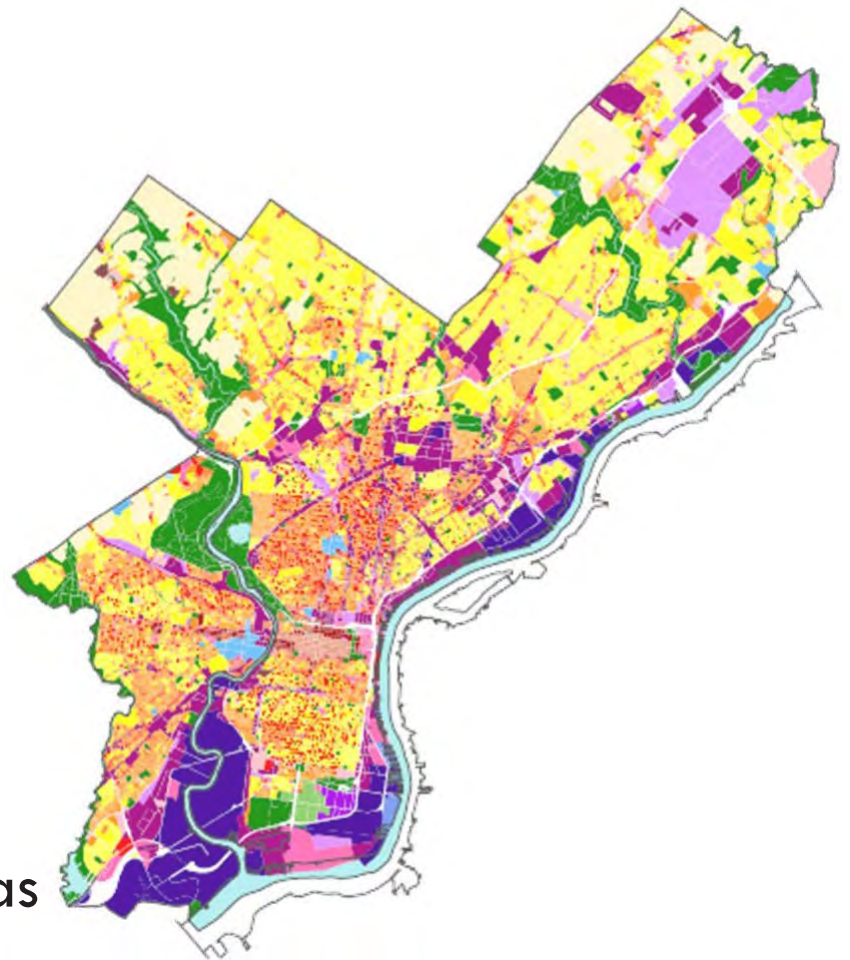
- Lowest Floor - lowest enclosed floor including: crawl space, basement, garage.

Pre-FIRM and **Post-FIRM** are insurance terms tied to a community's initial FIRM. The terms are used to determine flood insurance rates. Although common, the terms should not be used to distinguish between new construction built before a community joined the NFIP and those built after, especially in communities where the FIRMs have been revised.



ZONING Codes

- Prohibited - Hospitals, group living uses housing the elderly or disabled persons with limited mobility, detention or correctional facilities, new or substantially improved manufactured homes
- Floodway – development prohibited, unless dock, trail, roadway & bridges
 - Floodway analysis
- Watercourse modifications/alterations
- Changes to Special Flood Hazard Areas



DEFINITIONS

Zoning Code vs. ASCE 24-14

- **RESIDENTIAL** - building or structures and portions thereof where people live or that are used for sleeping purposes on a transient or non-transient basis - including but not limit to 1-family, 2-family, townhouses, condominiums, multifamily dwellings, apartments, congregate residences, boarding houses, lodging houses, rooming houses, hotels, motels, convents, monasteries, dormitories, fraternity houses, sorority houses, vacation time-share properties and institutional facilities: halfway houses, social rehabilitation facilities, alcohol and drug centers, detoxification facilities (ASCE 24-14)
- **NON-RESIDENTIAL** – not mentioned above
- **NON-RESIDENTIAL** (required to have 24” freeboard) - Generally structures needed in emergency events (see ASCE 24-14 for full list)

ZONING APPLICATION Process

Complete [FP-Zoning/Use Registration Form](#)

Refusals issued for:

- Prohibited uses
- Floodway development
- Placement of fill
- Changes to the Special Flood Hazard Area

NOTE:

Although you may receive Zoning Approval for a project located in the Special Flood Hazard Area, Building Permits will require further compliance based on building codes/regulations.

Department of Licenses and Inspections
CITY OF PHILADELPHIA

FLOOD PROTECTION FORM – ZONING/USE REGISTRATION (FP-Z)
2020 Edition (published January 3, 2020)
Expires February 1, 2021
SUBMIT WITH ZONING/USE PERMIT APPLICATION

FLOOD PROTECTION FORM – ZONING/USE REGISTRATION (FP-Z)
This form is for the acknowledgement of all applicable floodplain regulations in the City of Philadelphia's Zoning Code as well as building regulations (IRC 2015, IBC 2018, Administrative Code, ASCE 24, and 2018 IBC Appendix G) associated with a development site located in the Special Flood Hazard Area (SFHA). In some cases, the Building Code may be more restrictive than the Zoning Code, therefore this form assures that you have reviewed all codes that apply to projects in the floodplain. This form is to be completed by the development applicant, prior to submitting for a zoning/use registration permit to acknowledge all applicable floodplain regulations in the City of Philadelphia's Zoning Code as they appear on this form (FP-Z). Depending on your project you may have to review and/or complete these forms, where noted:

- [Flood Protection Form – General \(FP-G\)](#)
- [Flood Protection Form – Existing Buildings \(FP-EX\)](#)
- [Flood Protection Form – Variances \(FP-VAR\)](#)
- [Flood Protection Form – Letter of Map Change \(FP-LOMC\)](#)
- [Flood Protection Form – No Rise \(FP-NR\)](#)

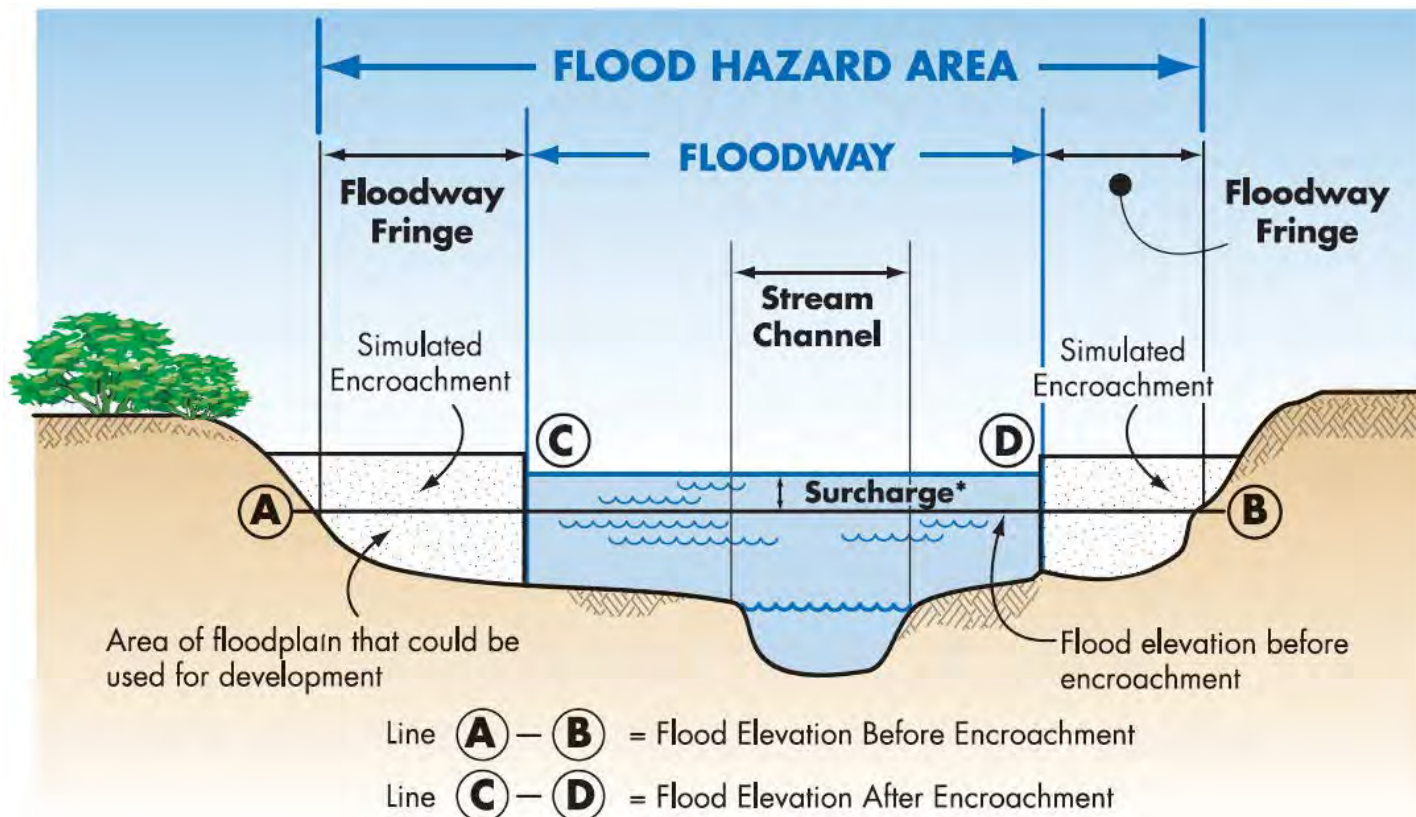
In some cases, your parcel may be in the floodplain, but not the development itself. Any part of a building/structure that touches a SFHA Zone, floodway, A Zone and/or AE Zone will be considered in the regulated Special Flood Hazard Area (SFHA). To find the City's Flood Insurance Rate Maps (FIRM's) and Flood Insurance Studies (FIS's) please see the FEMA Flood Map Service Center <https://msc.fema.gov/portal/home>. Please fill in the box below to confirm your development is mapped in or out of the SFHA.

A. FLOOD HAZARD INFORMATION – confirm that development is in the SFHA

REGULATIONS

Floodway

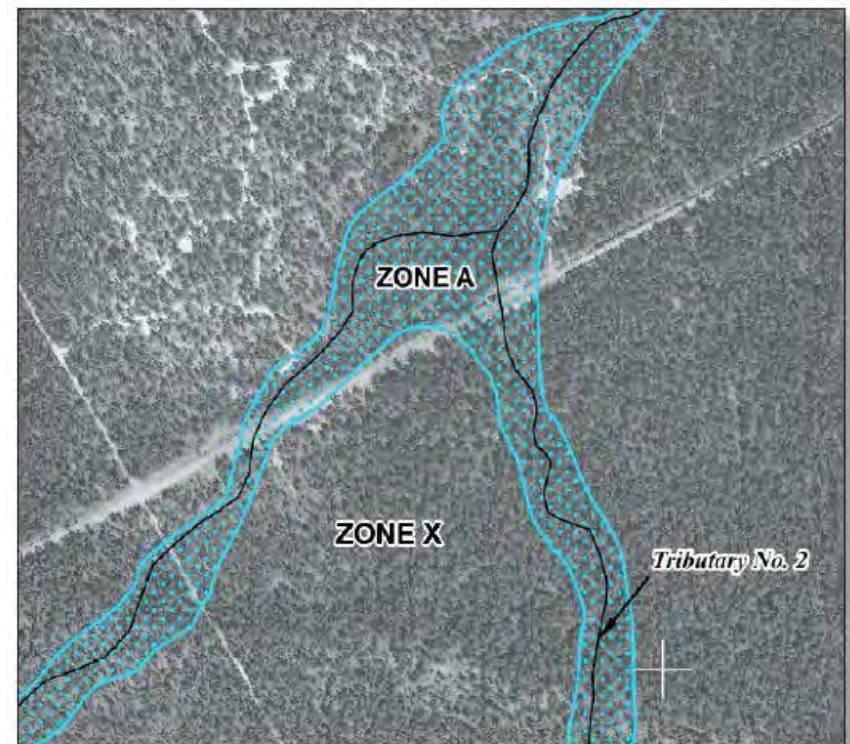
- New development is prohibited, unless dock, trail, roadway & bridges
- Docks, trails, roads & bridges must show a **No Rise** study/analysis must be completed as well as a FEMA CLOMR/LOMR analysis
- Other local, state, and federal permits apply (DEP, USACE, Submerged Lands License)



REGULATIONS

A Zones

- FEMA uses existing information - not engineering studies - to draw Approximate Zone A boundaries. Information may have been provided by the USACE, other federal agencies, State and local agencies, and historic records.
- For existing single family residential and accessory structures, the City may specify the BFE through contour interpolation, for all other development a Hydrologic and Hydraulic Study must be completed to determine a BFE



REGULATIONS

Coastal A Zones

- See ASCE 24-14 Chapter 4 Coastal High Hazard Areas and Coastal A Zone
- Jurisdiction- areas seaward of the LiMWA line
- Highlights:
- No new construction shall be located shall be located landward of the reach of the mean high tide



BUILDING PERMIT APPLICATION

Floodplain Scoping Meeting Process

City of Philadelphia
Department of Licenses and Inspections

Project Meeting Request

Please fill out form to register. The form administrator will send available dates within 7 business day of form receipt.

Please Select the Type of Project Meeting to Request *

Flood Protection - Scoping Meeting

Phased Construction Meeting

Applicant Name *

If the project value is more than \$50k in then [Floodplain Scoping Meeting](#) is required before permit submission

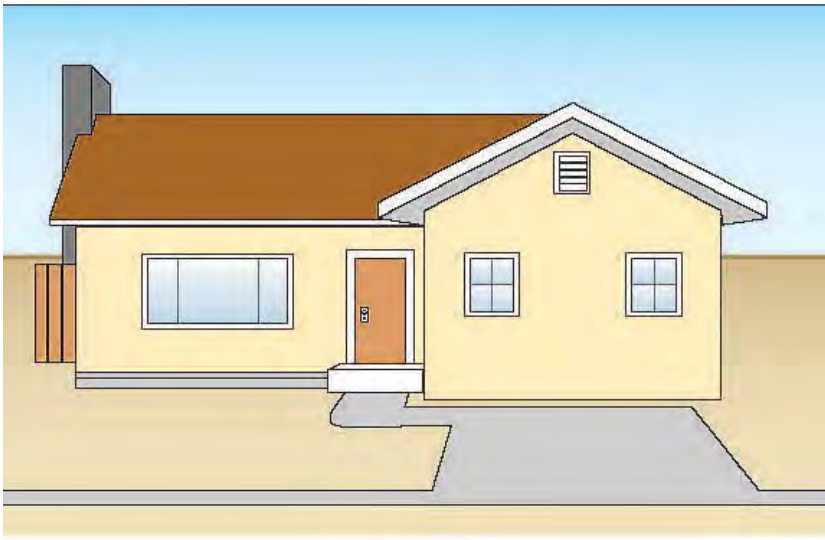
- If the parcel is in the floodplain but the development is clearly not then meeting may be waived (must still submit form)
- If the project is clearly not a substantial improvement of a structure that is PRE-FIRM or PRE-FIRM structure that hasn't already been brought into compliance, then meeting may be waived (must still submit form)

For more information see [Floodplain Scoping Meeting Information](#) sheet.

EXISTING STRUCTURES

Substantial Improvements

- means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure (or smaller percentage if established by the community) before the “start of construction” of the improvement. This term includes structures that have incurred “substantial damage,” regardless of the actual repair work performed



Pre-FIRM house



Pre-FIRM house, with substantial improvement determination

EXISTING STRUCTURES

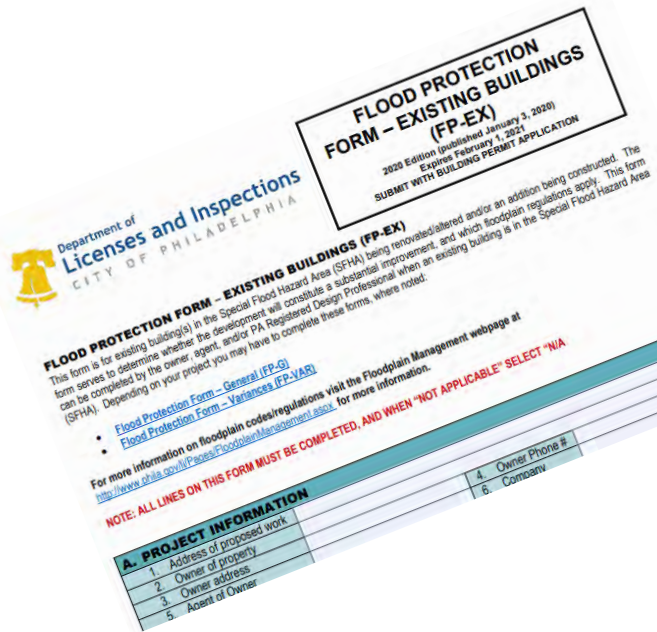
Substantial Improvements - Process

1. Complete [FP- Existing Building Form](#)

2. Attach Cost Estimate

3. Substantial Improvement Calculation

$$\frac{\text{IMPROVEMENT VALUE}}{\text{MARKET VALUE}} = \text{PERCENTAGE OF IMPROVEMENT}$$



ESTIMATED COST

- Materials and labor, including the estimated value of donated or discounted materials and owner or volunteer labor, plus sales tax
- Site preparation related to the improvement or repair (e.g., foundation excavation or filling in basements)
- Demolition and construction debris disposal
- Construction management and supervision
- Structural elements and exterior/interior finishes
- Utility and service equipment

Items that can be excluded:

- Costs to obtain or prepare plans and specifications
- Land survey costs
- Permit fees and inspection fees
- Outside improvements, including landscaping, irrigation, sidewalks, driveways, fences, yard lights, swimming pools, pool enclosures, and detached accessory structures (e.g., garages, sheds, and gazebos)
- Costs required for the minimum necessary work to correct existing violations of health, safety, and sanitary codes

EXISTING STRUCTURES

Substantial Improvements - MARKET VALUE

City of Philadelphia **Property** WWW.ATLAS.PHILA.GOV

Property 2301 MARKET ST Translate

2301 MARKET ST
Philadelphia, PA 19103-1338

Address **INSERT ADDRESS** Unit #

OWNER _____

PECO

MAILING ADDRESS
2301 MARKET ST
Philadelphia, PA
19103-1338

REAL ESTATE TAX BALANCE _____

Real Estate Tax account balances have not yet been added to this application.

[VIEW THE TAX BALANCE](#)

VALUATION HISTORY _____

ADD TO GET MARKET VALUE

Year	Market Value	Taxable Land	Taxable Improvement	Exempt Land	Exempt Improvement
2019	\$121,612,200	\$24,537,640	\$97,074,560	\$0	\$0
2018	\$110,000,000	\$23,100,000	\$86,900,000	\$0	\$0
2017	\$75,000,000	\$33,057,600	\$41,942,400	\$0	\$0
2016	\$74,000,000	\$33,057,600	\$40,942,400	\$0	\$0
2015	\$73,000,000	\$33,057,600	\$39,942,400	\$0	\$0

See in Google Street View [↗](#)

These maps are created for reference only and do not represent precise legal boundaries. For more information about deeds, please visit [Atlas](#).

OPA ACCOUNT **883054500** HOMESTEAD EXEMPTION **No**

DESCRIPTION **OFF BLD N/PKG N/COM MASON**

CONDITION

EXISTING STRUCTURES

Substantial Improvements - MARKET VALUE

IF 1 PARCEL & MULTIPLE STRUCTURES, THEN:

2018 MARKET VALUE OF TAXABLE IMPROVEMENT (STRUCTURE/BUILDING ONLY)

IMPROVEMENT AREA (SQFT) = PRICE PER SQFT

THEN:

PRICE PER SQFT



EACH STRUCTURE/ BUILDING SQFT



EXISTING MARKET VALUE

DETERMINING EXISTING MARKET VALUE (CONDO)

Address	Market Value	Sale Details	Owner
210-20 S 25TH ST # PH1	\$3,770,000	10/3/2017, \$5,290,300	LOEVNER LAURIE A
210-20 S 25TH ST # PH2	\$5,180,000	4/3/2017, \$1	ONE RIVERSIDE ASSOCIATES
210-20 S 25TH ST UNIT 1001	\$3,791,000	5/25/2017, \$3,791,688	COHEN DAVID, GOODMAN ELLEN
210-20 S 25TH ST UNIT 1002	\$977,000	5/25/2017, \$988,500	AHN JAIMO UTTAPISHTHA, AHN MARY ELIZABETH
210-20 S 25TH ST UNIT 1003	\$2,413,000	6/20/2017, \$2,820,100	CIOCCA GREGG R, CIOCCA SHARON K
210-20 S 25TH ST UNIT 1101	\$2,481,000	5/30/2017, \$2,655,951	FADER PETER, FADER WILHELMINA
210-20 S 25TH ST UNIT 1102	\$2,438,000	5/31/2017, \$2,845,100	ROWLAND DAVID I, ROWLAND SUZANNE B
210-20 S 25TH ST UNIT 1103	\$2,067,000	5/30/2017, \$2,270,700	SHROPSHIRE DIANE M, SHROPSHIRE KENNETH L
210-20 S 25TH ST UNIT 1201	\$1,482,000	6/4/2017, \$1,745,805	KESLER BARBARA, MARK KESLER TRUST
210-20 S 25TH ST UNIT 1202	\$987,000	6/7/2017, \$1,004,240	FAZLI DAWN M
210-20 S 25TH ST UNIT 1203	\$2,438,000	6/4/2017, \$2,795,100	CHRISTMAN JOLLEY BRUCE
210-20 S 25TH ST UNIT 1204	\$2,067,000	6/7/2017, \$2,422,400	JADS REALTY LLC
210-20 S 25TH ST UNIT 1401	\$1,490,000	6/13/2017, \$1,643,100	SHEAFFER KEITH R
210-20 S 25TH ST UNIT 1402	\$997,000	6/13/2017, \$1,069,400	ABDALLAH MAHMOUD, MMA GLOBAL RIVERSIDE LLC
210-20 S 25TH ST UNIT 1403	\$1,190,000	6/13/2017, \$1,368,400	DONALDSON THOMAS JAY
210-20 S 25TH ST UNIT 1404	\$1,206,000	6/14/2017, \$1,384,800	ANDERSON SETH R
210-20 S 25TH ST UNIT 1405	\$2,088,000	7/18/2017, \$2,660,000	1608 RIVERSIDE LLC
210-20 S 25TH ST UNIT 1501	\$2,506,000	6/18/2017, \$2,959,400	JUDITH RICE REV TRUST, RICE JUDITH G
210-20 S 25TH ST UNIT 1502	\$2,484,000	6/18/2017, \$2,767,800	GLASS HAROLD E, SQUIRES HOLLY E
210-20 S 25TH ST UNIT 1503	\$2,088,000	1/23/2018, \$2,395,000	ADAMS MATTHEW J, ADAMS MICHELLE D
210-20 S 25TH ST UNIT 1601	\$2,532,000	6/18/2017, \$2,758,233	LEVIN HELGA, LEVIN LAWRENCE SCOTT
210-20 S 25TH ST UNIT 1602	\$2,489,000	7/18/2017, \$2,963,000	1608 RIVERSIDE LLC
210-20 S 25TH ST UNIT 1803	\$2,110,000	7/9/2017, \$2,274,751	SHAKED ABRAHAM, SHAKED ROBERTA
210-20 S 25TH ST UNIT 1701	\$3,704,000	7/31/2017, \$4,015,680	MOUKARZEL YASMINA
210-20 S 25TH ST UNIT 1702	\$2,438,000	7/31/2017, \$2,812,700	HAI DREW, ANTHONY M

ADD ALL UNITS' MARKET VALUE TOGETHER FOR EXISTING MARKET VALUE OF STRUCTURE/BUILDING

TO CHALLENGE THE MARKET VALUE: CERTIFIED APPRAISAL

- Licensed Appraiser in Pennsylvania
- Report



- Identify intended user (including property owner)
- Completed less than 1 year before floodplain application
- “Market Approach” is preferred - for structure only, land must be broken out (**NOTE: to separate the market value of a structure from the value of the land on which it is located, appraisers may need to do more research than is normally undertaken in order to reasonably allocate the total value between the structure and the land**) - for multiple buildings on one parcel, each must be assessed for existing market value
- “Income Capitalization Approach” is not acceptable
- All values must be for existing conditions, without any proposed improvements

EXISTING STRUCTURES

EZ Permits

When in a Special Flood Hazard Area:

- One or multiple EZ Permits could constitute “substantial improvement”
 - The department, at its discretion, will ensure that phased improvements do not circumvent the substantial improvement requirements
- Some otherwise eligible EZ permit work may be ineligible for EZ Permit when in the floodplain
- Additional standards for floodplain development apply to EZ Permit work above EZ Permit standards information.

BUILDING PERMITS APPLICATION

Building Permit Process

If substantial improvement, maintaining compliance and/or new construction then [FP-General Form](#) must be completed.



FLOOD PROTECTION FORM – GENERAL (FP-G)

2020 Edition (published January 3, 2020)
Expires February 1, 2021
SUBMIT WITH BUILDING PERMIT APPLICATION

FLOOD PROTECTION FORM – GENERAL (FP-G)
This form is for building permit applications to confirm all development meets the City of Philadelphia's building regulations associated with a development site located in the Special Flood Hazard Area (SFHA). This form is to be completed by a PA Registered Design Professional(s) who is authorized by law to certify the information required on this form are correct and complete to the best of their knowledge and that the design plans, as submitted, are consistent with the statements. Depending on your project you may have to complete these forms, where noted:

[Flood Protection Form – Zoning/Use Registration \(FP-Z\)](#)
[Flood Protection Form – Existing Buildings \(FP-EX\)](#)
[Flood Protection Form – Variances \(FP-VAR\)](#)
[Flood Protection Form – No Rise \(FP-NR\)](#)
[Flood Protection Form – Letter of Map Change \(FP-LOMC\)](#)
[Structural Design Criteria Form](#)

For more information on floodplain codes/regulations visit the Floodplain Management webpage at <http://www.phila.gov/ir/Pages/FloodplainManagement.aspx>

For building permit plans, these additional items shall be submitted:

- Plans must be signed/sealed by a PA registered design professional when cost of work exceeds \$25,000. Structural plans must be signed/sealed by a professional engineer licensed by the Commonwealth of Pennsylvania.
- Plans must be of professional quality and drawn to scale (e.g. 1/4" = 1' - 0")

BUILDING PERMITS

Residential

- Lowest “livable” floor must be BFE+18”
 - Living room, office, bedrooms, bathrooms, etc.
- If spaces below BFE+18”, can only be used for: parking, building access, and incidental storage.
 - Fully enclosed spaces must be “wet-floodproofed” - allow the automatic entry and exit of floodwater, through **Flood Vents**
 - No bathrooms, offices, bedrooms, furniture, etc.
 - No basements or crawl spaces that are below-grade on all sides
 - **Non-conversion** clause on Certificate of Occupancy for space(s) below BFE+18”
 - Space can never be converted to “livable” space
 - Future underpinning is prohibited
 - Use of **Flood Damage Resistant Materials**

BUILDING PERMITS

Residential - w/ enclosures

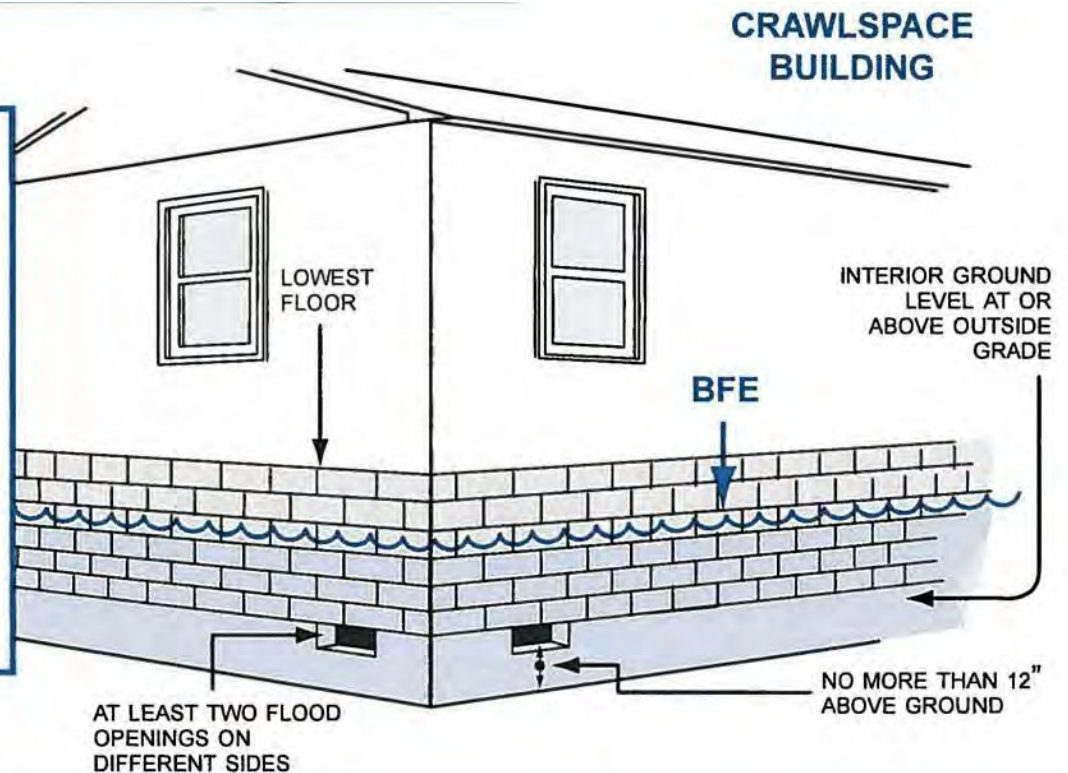


Important Information

NOTE:

- Total net area of all total openings is 1 sq. in. per sq. ft. of enclosed area.
- A 25' x 45' building needs 1,125 sq. inches of openings.
- Standard ventilation units used in foundation walls must be disabled in the open position to allow water to flow in and out.
- A standard ventilation unit with screen, provides 42 to 65 sq. inches of opening.

ALTERNATIVE: Engineered openings are acceptable if certified to allow adequate automatic inflow and outflow of floodwaters.



Solid perimeter walls can enclose floodprone areas. A crawlspace is a good way to elevate just a couple of feet. In all cases the following are required: flood openings, utilities elevated to or above the BFE, flood resistant materials and limitations on use of enclosures below the lowest floor. Check with the local permit office for details and restrictions.

BUILDING PERMITS

Residential - townhouses w/ flood vents

- Townhouses/row-homes must be structurally independent
- Bottom of vent no higher than 12" above adjacent grade
- Vents on at least 2 sides of a structure
- 2 vents per enclosed space
- 1sq/in for every 1sq/ft of enclosed space
- Only vent openings below BFE count

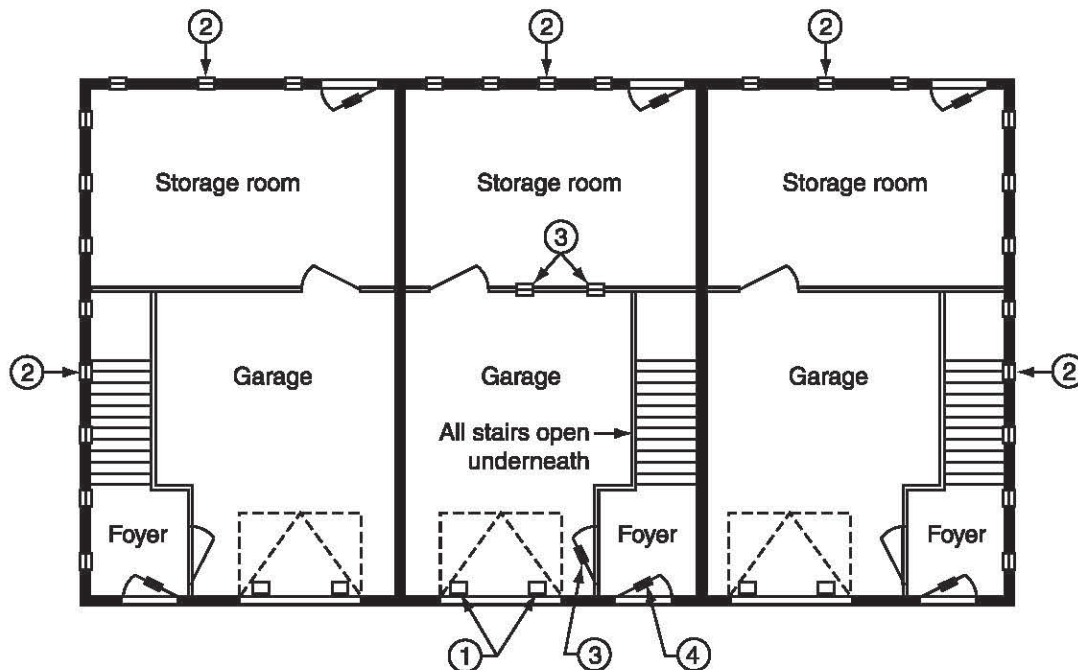
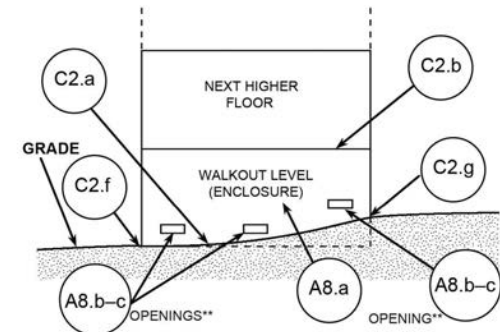


DIAGRAM 7

All buildings elevated on full-story foundation walls with a partially or fully enclosed area below the elevated floor. This includes walkout levels, where at least 1 side is at or above grade. The principal use of this building is located in the elevated floors of the building.

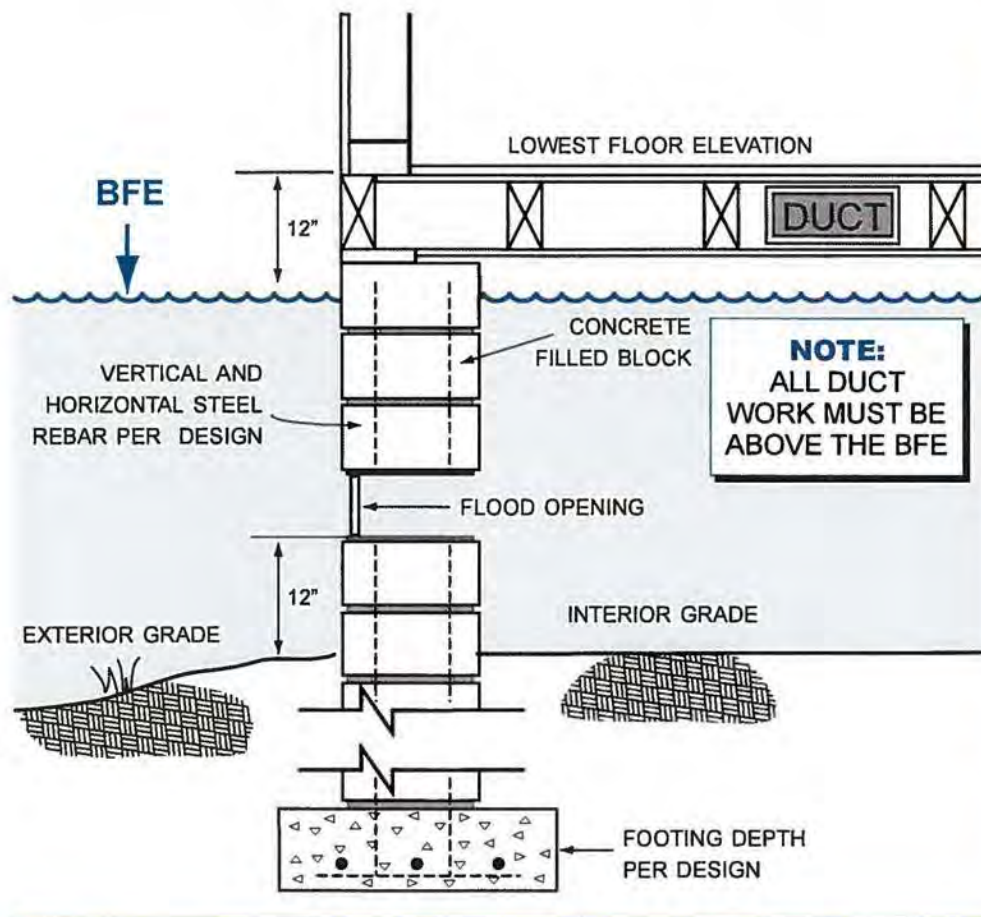
Distinguishing Feature – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings** present in the walls of the enclosure. Indicate information about enclosure size and openings in Section A – Property Information.



- ① Openings in garage door
- ② Openings in exterior wall
- ③ Openings in interior wall/door
- ④ Openings in exterior door

BUILDING PERMITS

Flood Vents - crawl space



- The Lowest Floor Elevation must be at or above the BFE.
- The bottom of flood openings must be no more than 1 foot above the grade.
- Standard ventilation units must be permanently disabled in the "open" position to allow water to flow in and out.
- Interior and exterior grades should be equal on at least one side.

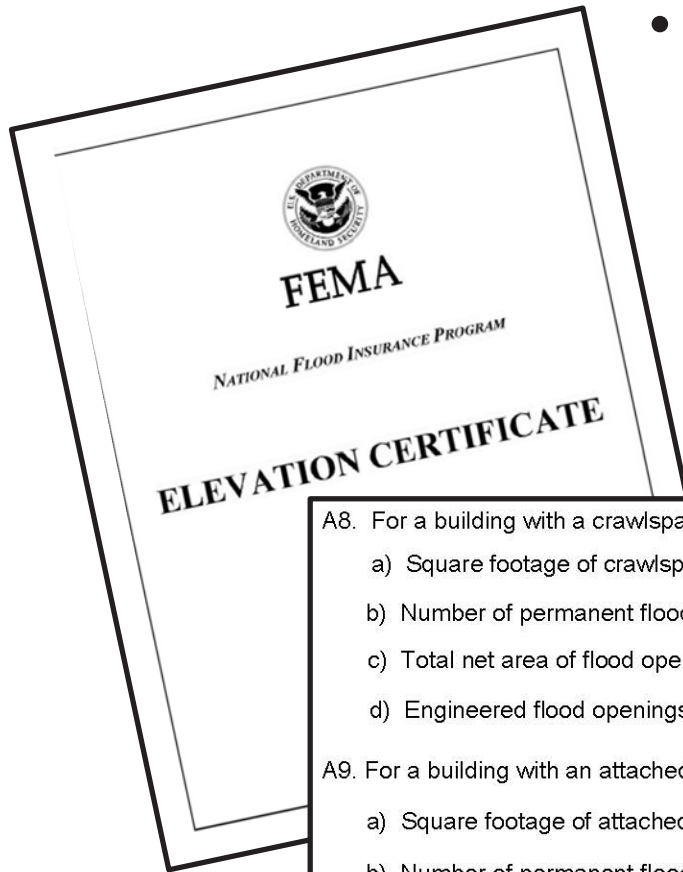
Calculate Net Flood Opening:

A building that measures 25' x 45' has 1,125 square feet of enclosed crawlspace. Flood vents must provide 1,125 sq. in. of net open area (or have certified engineered openings). If a standard air vent unit provides 60 sq. in. of net open area, then to satisfy the flood opening requirement 19 vent units are required (1,125 divided by 60).

BUILDING PERMITS

Flood Vents - Elevation Certificate

- See A8 and A9 on Elevation Certificate



- Air vents and/or manually operated vents are not allowed

A8. For a building with a crawlspace or enclosure(s):

- Square footage of crawlspace or enclosure(s) _____ sq ft
- Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____
- Total net area of flood openings in A8.b _____ sq in
- Engineered flood openings? Yes No

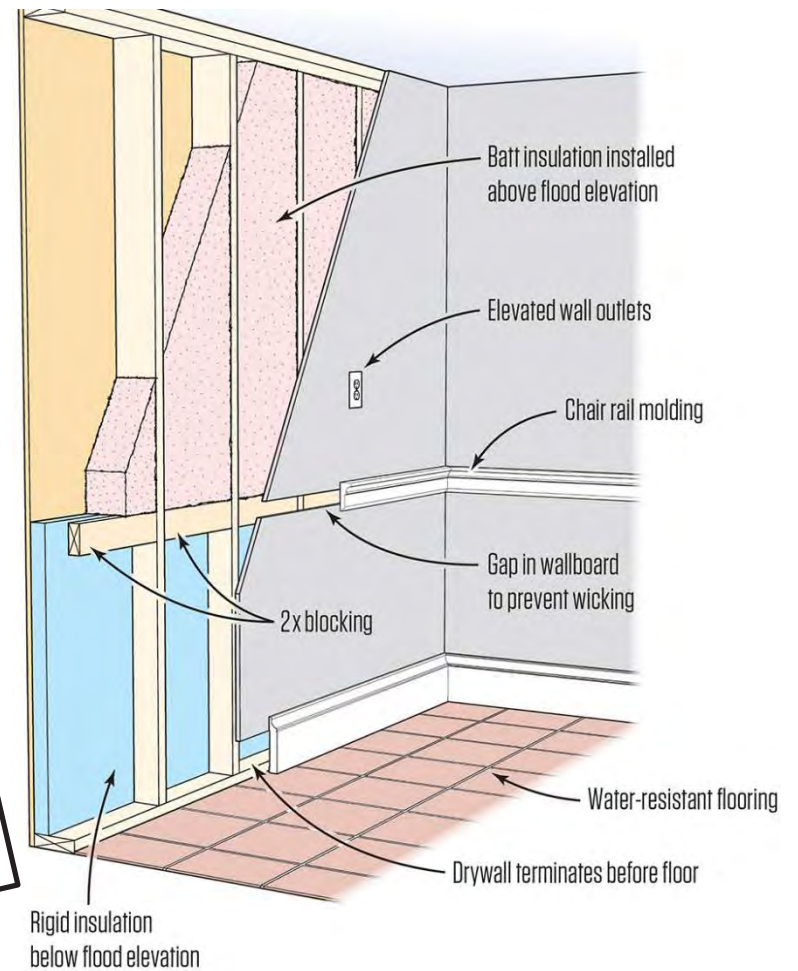
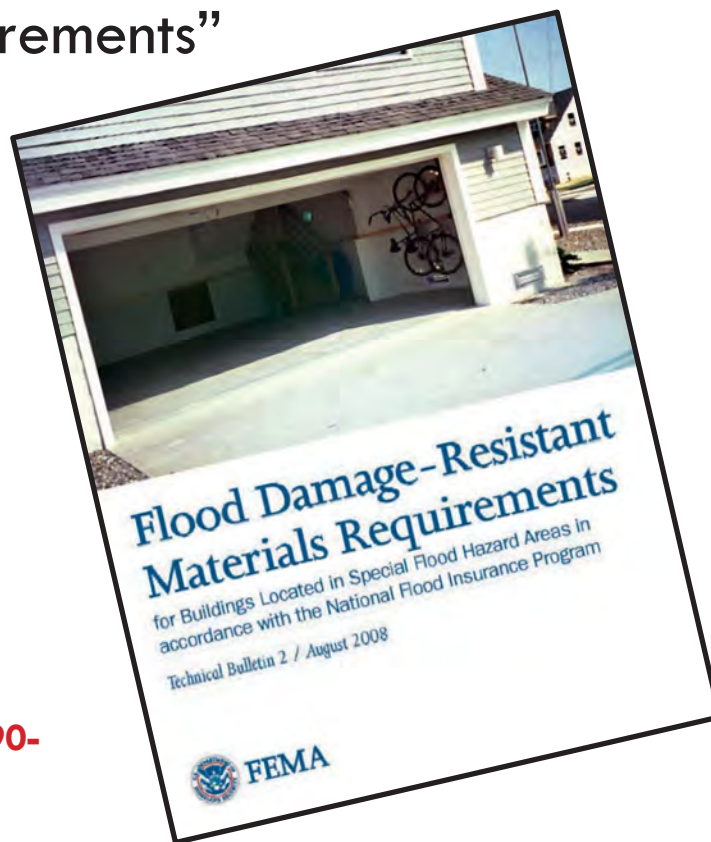
A9. For a building with an attached garage:

- Square footage of attached garage _____ sq ft
- Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____
- Total net area of flood openings in A9.b _____ sq in
- Engineered flood openings? Yes No

BUILDING PERMITS

Flood Damage Resistant Materials

- any building product [material, component or system] capable of withstanding direct and prolonged (at least 72 hours) contact with floodwaters without sustaining significant damage
- See Table 2 in FEMA Technical Bulletin “Flood Damage-Resistant Material Requirements”



[fema.gov/media-library-data/20130726-1502-20490-4764/fema_tb_2_rev1.pdf](https://www.fema.gov/media-library-data/20130726-1502-20490-4764/fema_tb_2_rev1.pdf)

BUILDING PERMITS

Non-Residential

- Option: **Wet-floodproofed** or **Dry-floodproofed**
- If **Wet-floodproofed**, then spaces below BFE+18", can only be used for: parking, building access, and incidental storage.
 - Fully enclosed spaces must be "wet floodproofed" - allow the automatic entry and exit of floodwater, through **Flood Vents**
 - **Non-conversion** clause on Certificate of Occupancy for space(s) below BFE+18"
 - Use of **Flood Damage Resistant Materials**
- If **Dry-floodproofed**, below BFE+18"
 - structure, including utilities and equipment, being watertight with all elements substantially impermeable to the entrance of floodwater and with structural components having the capacity to resist flood loads.
 - typical use up to 3 feet
 - **Not** allowed in Coastal A Zones (along Delaware River)

BUILDING PERMITS

Mixed-Use Structures

Considerations:

- **Commercial portions:**

- **Wet-floodproofed**, spaces below BFE+18", use only as parking, building access, and incidental storage

or

- **Dry-floodproofed**, commercial spaces below BFE+18"

- **Residential portions:** must be elevated BFE+18", including lobbies with furniture, desk attendants, mailboxes, trash receptacles, and resident only facilities (gyms, game rooms, amenity spaces, etc)

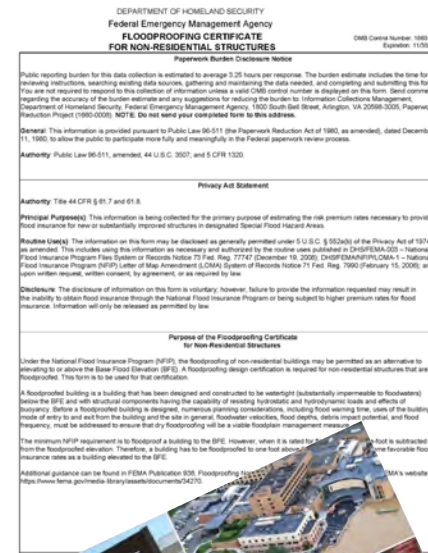
- **Wet-floodproofed**, spaces below BFE+18", use only as parking, building access, and incidental storage
 - bicycle parking, stairwell enclosure, elevator vestibule, etc.

BUILDING PERMITS

Dry-floodproofing Certificate & considerations

• Dry-floodproofed considerations:

- Building strength
- Warning time
- Level of protection
- Operational
 - Inspection/maintenance plans
 - **Flood Emergency Operation Plan**, see FEMA technical bulletin “Floodproofing Non-Residential Buildings”
- Seepage
 - Sump pumps
 - Back-flow preventers
- **Floodproofing Certificate**
 - Must be submitted for Certificate of Occupancy



DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
**FLOODPROOFING CERTIFICATE
FOR NON-RESIDENTIAL STRUCTURES**

OMB Control Number: 1685-0088
Expiration: 11/30/2019

Paperwork Burden Disclosure Notice

Public reporting burden for this data collection is estimated to average 3.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this form. Send comments regarding this burden estimate or any aspect of this form, including suggestions for reducing the burden, to Information Collection Management, Department of Homeland Security, Federal Emergency Management Agency, 1200 South Bell Street, Arlington, VA 22204-3005, Paperwork Project (0302-0002). NOTE: Do not send your completed form to this address.

Notice: This information is provided pursuant to Public Law 96-511 (the Paperwork Reduction Act of 1980, as amended), dated December 11, 1980, to allow the public to participate more fully and meaningfully in the Federal paperwork review process.

Authority: Public Law 96-511, amended, 44 U.S.C. 3507, and 5 CFR 1320.

Privacy Act Statement

Authority: Title 44 CFR § 61.7 and 61.8.

Principal Purpose(s): This information is being collected for the primary purpose of estimating the risk premium rates necessary to provide flood insurance for new or substantially improved structures in designated Special Flood Hazard Areas.

Routine Use(s): The information on this form may be disclosed as generally permitted under 5 U.S.C. § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in OIG/FEMA/025 - National Flood Insurance Program Files System or Records Notice 71 Fed. Reg. 77747 (December 16, 2006); OIG/FEMA/019/026A-1 - National Flood Insurance Program (NFIP) Letter of Map Amendment (LOMA) System of Records Notice 71 Fed. Reg. 7950 (February 15, 2006); and open order issued, written consent, by agreement, or as required by law.

Disclosure: The disclosure of information on this form is voluntary. However, failure to provide the information requested may result in the inability to obtain flood insurance through the National Flood Insurance Program or being subject to higher premium rates for flood insurance. Information will only be released as permitted by law.

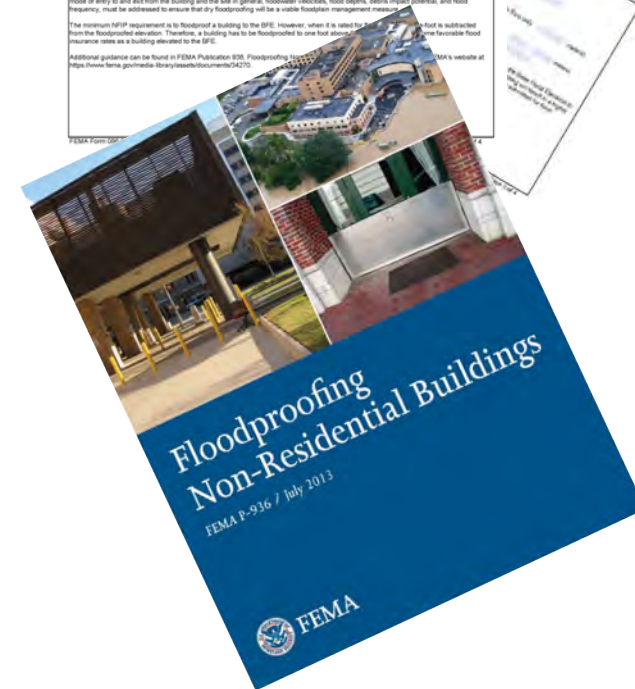
Purpose of the Floodproofing Certificate for Non-Residential Structures

Under the National Flood Insurance Program (NFIP), the floodproofing of non-residential buildings may be permitted as an alternative to elevating to or above the Base Flood Elevation (BFE). A floodproofing design certification is required for non-residential structures that are floodproofed. This form is to be used for that certification.

A floodproofed building is a building that has been designed and constructed to be watertight (substantially impermeable to floodwaters) below the BFE and with structural components having the capacity of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Before a floodproofed building is designed, numerous planning considerations, including flood warning time, uses of the building, mode of entry to and from the building and the site in general, footcandle velocities, flood depths, vehicle impact potential, and flood frequency, must be addressed to ensure that dry floodproofing will be a viable floodplain management measure.

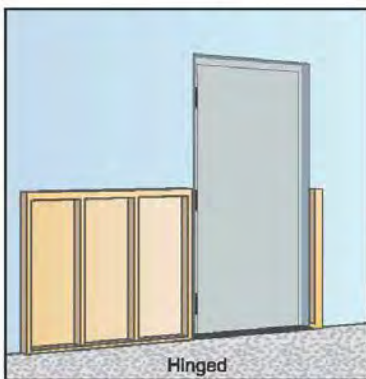
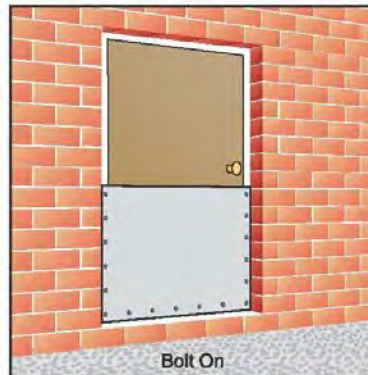
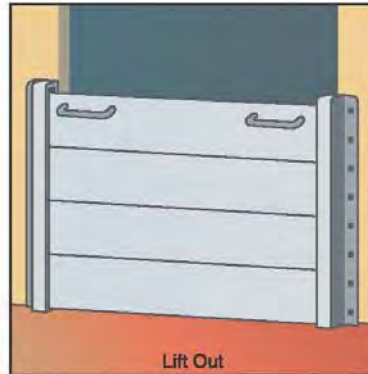
The minimum NFIP requirement is to floodproof a building to the BFE. However, when it is related to a building that is not a floodproofed building, the minimum NFIP requirement is to floodproof a building to the BFE. However, when it is related to a building that is not a floodproofed building, the minimum NFIP requirement is to floodproof a building to the BFE. However, when it is related to a building that is not a floodproofed building, the minimum NFIP requirement is to floodproof a building to the BFE.

Additional guidance can be found in FEMA Publication 505, Floodproofing Non-Residential Buildings, FEMA's website at <https://www.fema.gov/media-library/download/document/42470>.



BUILDING PERMITS

Dry-floodproofing - examples



BUILDING PERMITS

Below-Grade Parking

- Must be **Dry-floodproofed**, to BFE+18”
 - **Not** allowed in Coastal A Zones (along Delaware River)
 - **Not** allowed in fully residential structures (IE. condominium and apartment buildings)



BUILDING PERMITS

Machinery/Equipment

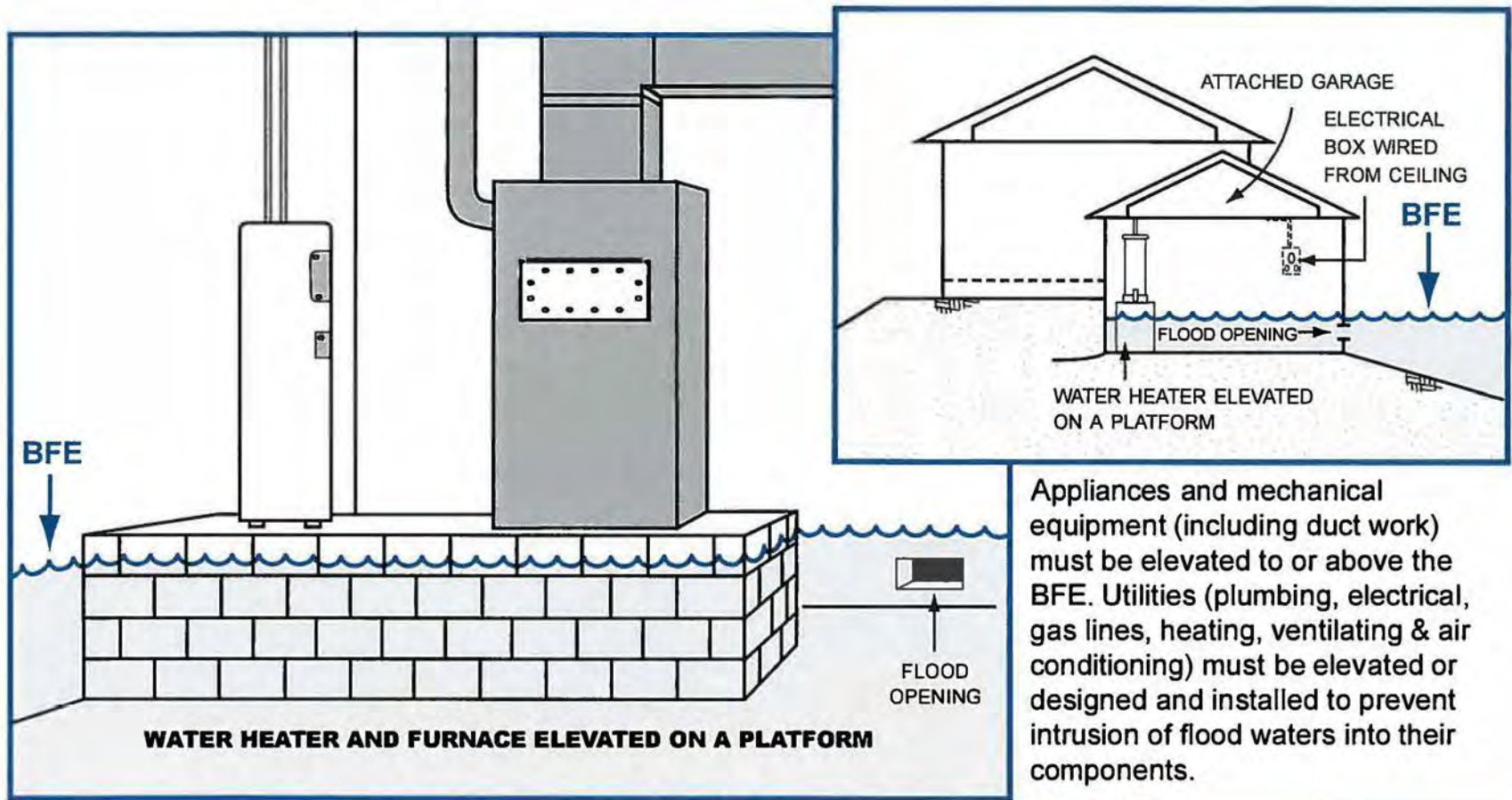
- Mechanical
- Fuel Systems
- Electrical
- Water supply
- Elevator/escalators
- Plumbing
- Transformers
- Generators
- BFE + 18" unless designed to submersible/dry floodproofed/waterproof
- Systems and components emerging from underground shall be designed to be anchored to resist flood loads and debris impact



BUILDING PERMITS

Machinery/Equipment

Utility Service Inside Enclosures



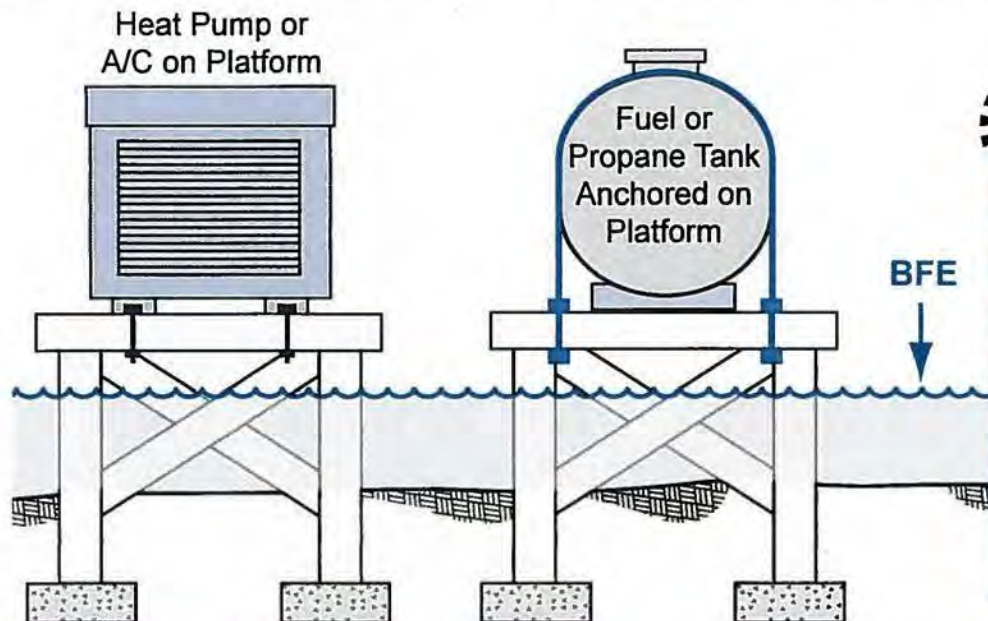
Appliances and mechanical equipment (including duct work) must be elevated to or above the BFE. Utilities (plumbing, electrical, gas lines, heating, ventilating & air conditioning) must be elevated or designed and installed to prevent intrusion of flood waters into their components.

BUILDING PERMITS

Machinery/Equipment

Utility Service / Fuel Tanks

All utilities, appliances, and equipment must be elevated to or above the BFE. Utilities include plumbing, electrical, gas lines, fuel tanks, and heating, ventilating and air conditioning equipment.



Important

Information

For floodplain management purposes, a gas or a liquid storage tank that is principally above ground is considered a structure and must be elevated to or above the BFE.

Fuel and propane tanks may cause explosion and pollution risks during floods. Even shallow water can create significant buoyant forces on tanks so extra care must be taken to ensure that all tanks are appropriately anchored.

Fuel and propane tanks can pose serious threats to people, property, and the environment during flood conditions. Even shallow water can create a large buoyant force on tanks. Videos on "Fuel Tank Flood Hazards" and "How to Anchor Home Fuel Tanks" are available from FEMA Publications at 1-800-480-2520 and "How-To Guides" on anchoring fuel tanks and other flood damage reduction techniques are available at: <http://www.fema.gov/library/viewRecord.do?id=3262>.

BUILDING PERMITS

Elevators

Shafts below BFE+18"

- Flood vents no required in enclosed shafts
- All mechanicals elevated to BFE+18"
- Float switch
- Programed for cab to rest on the floor above BFE+18"

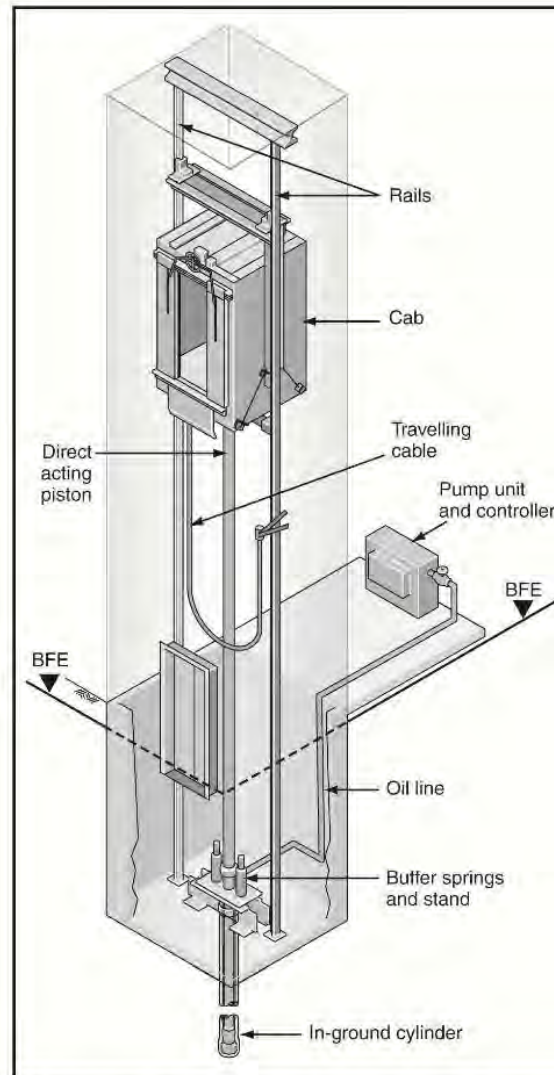


Figure 1. Direct Acting (Holed) Hydraulic Elevator
(Source: Otis Elevator Company)

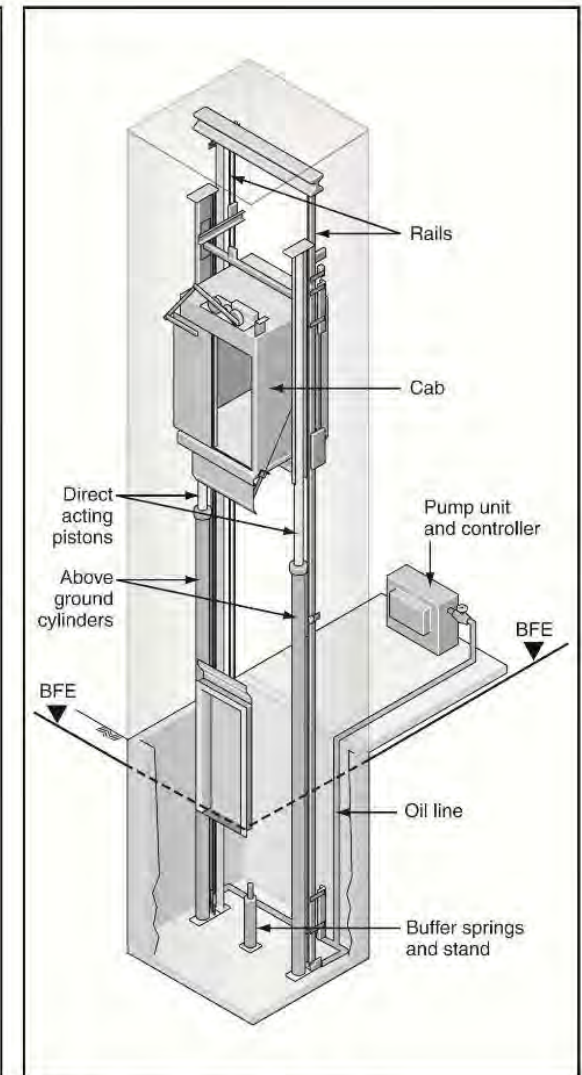


Figure 2. Holeless Hydraulic Elevator
(Source: Otis Elevator Company)

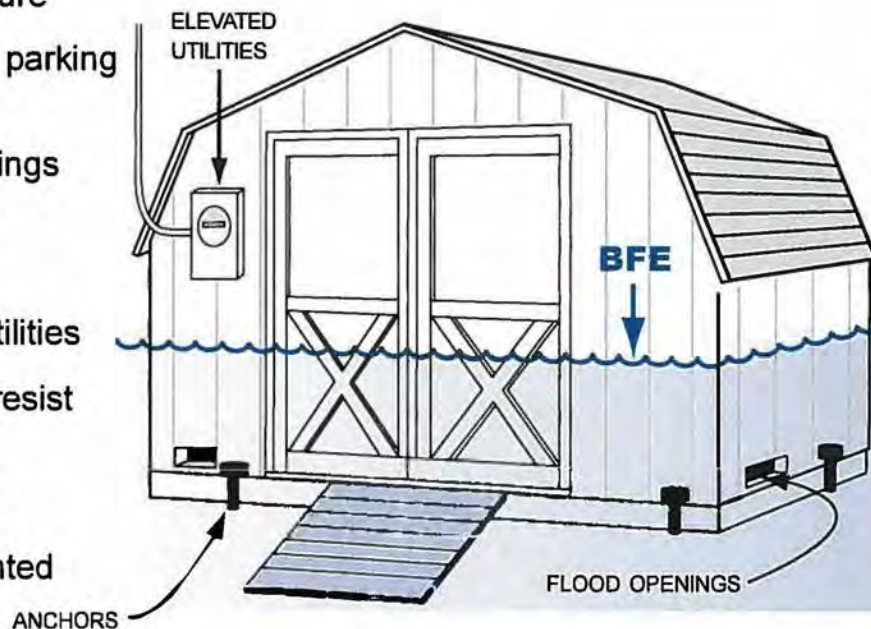
BUILDING PERMITS

Accessory Structures

Accessory Structures

Accessory Structures in a Special Flood Hazard Area:

- Cannot be modified for a different use in the future
- Must be used only for parking or storage
- Must have flood openings
- Must be built of flood resistant materials
- Must have elevated utilities
- Must be anchored to resist floating
- Must not be inhabited
- Must have a documented floor elevation



Terms and Definitions

Accessory (Appurtenant) Structure means a structure that is located on the same parcel of land as a principal structure and whose use is incidental to the use of the principal structure. Accessory structures should be no more than a minimal initial investment, may not be used for human habitation, and must be designed to minimize flood damage. Examples include: detached garages, carports, storage sheds, pole barns, and hay sheds.

Even small buildings are considered “development” and permits or variances with noted conditions are required. **CAUTION!** Remember...everything inside is likely to get wet when flooding occurs.

BUILDING PERMITS

Vehicles/Trailers

Recreational Vehicles

In a Special Flood Hazard Area, a Recreational Vehicle (RV) must:

- Remain on site for fewer than 180 consecutive days, and
- Be fully licensed and ready for highway use; or
- Meet the permitting, elevation, and anchoring requirements for manufactured homes of the community's Flood Damage Prevention Ordinance.

A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick-disconnect type utilities and security devices, and has no permanently attached additions.

RVs that do not meet these conditions must be installed, elevated, and secured like a manufactured home, including a permanent foundation and tie-down.



Important

Information

Camping near the water? Ask the campground or RV Park operator about flood warnings and plans for safe evacuations.

BUILDING PERMITS

Seasonal/Temporary Structures

Non-enclosed

- Anchored to withstand the hydrostatic & hydrodynamic loads as well as not become buoyant
- Examples: event tents, pergolas, ice rinks, event stage, etc.

Enclosed

- Anchored to withstand the hydrostatic & hydrodynamic loads as well as not become buoyant
- Parking and Incidental storage use
 - Flood vents
- Use other than parking and incidental storage uses
 - See residential or non-residential standards



BUILDING PERMITS

Storage

Prohibited, unless:

- designed to be easily movable (no equipment required for removing), in the event of a flood (IE. outdoor furniture, items on wheels, etc.),
- anchored to withstand the hydrostatic & hydrodynamic loads as well as not become buoyant
- elevated above BFE+18”



BUILDING PERMITS

Construction Storage/Trailers

Licensed and Road-ready

- On site less than 180 days
- Must be on wheels/chassis
- No connected mechanicals (electric service, plumbing, etc)

More than 180 days and/or connected to mechanicals and/or not on wheels/chassis

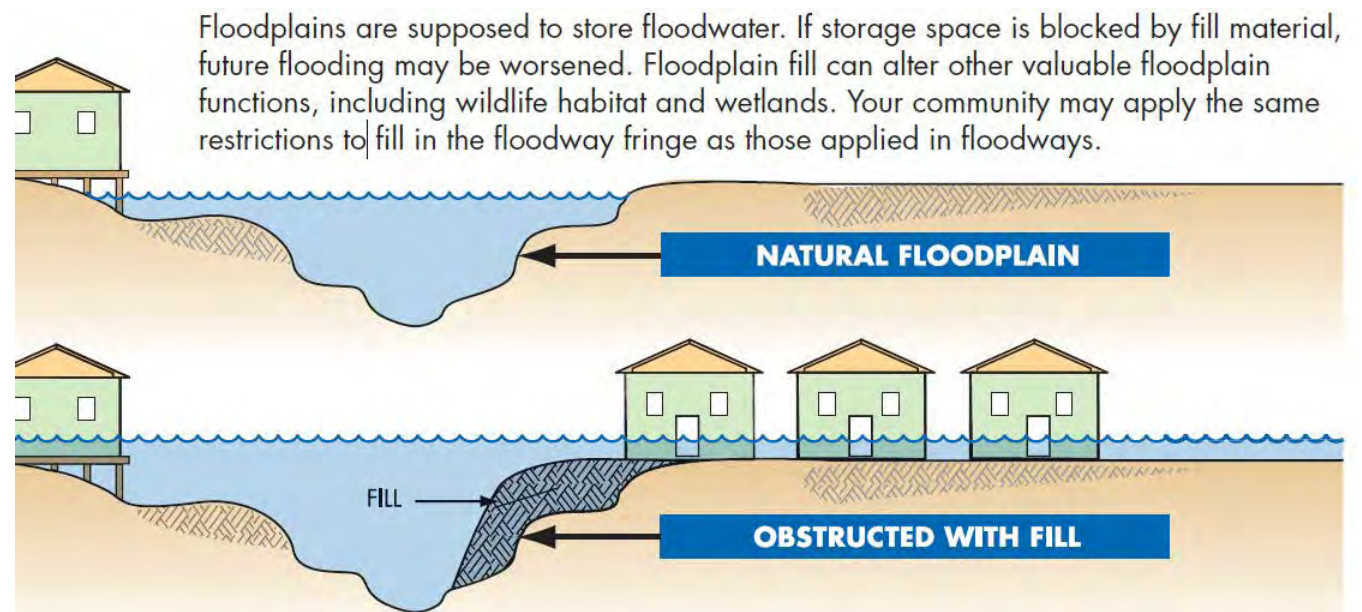
- Anchored to withstand the hydrostatic & hydrodynamic loads as well as not become buoyant
- Elevated to BFE+18”



BUILDING PERMITS

Fill

- Compaction requirements
- **GEO-TECHNICAL REPORT** if over 12”
 - Requires Special Inspections
- **Requires** a Zoning Permit, and a Building Permit if over 5,000 SF
- **FEMA LOMC** may be required



BUILDING PERMITS

Historic Structures

- Analysis that elevating and/or floodproofing would remove it from historic designation
 - Singed and seal analysis from an Architect
- Variance **required** through Board of Building Standards
- Mechanicals should be elevated to BFE+18”
- Flood damage resistant materials should be used in areas below BFE+18”



REGULATIONS

Variations

Requirements:

- Applicant conditions
- Applicant technical requirements
- Community's conditions when granting a variance

Considerations:

- Annual reporting of variances to State and FEMA
- Community:
 - Liability
 - Cumulative impacts on the floodplain of granting multiple similar variances
 - Variance decision will last the life of the structure
 - NFIP participation impact

Department of Licenses and Inspections
CITY OF PHILADELPHIA

FLOOD PROTECTION FORM - VARIATIONS (FP-VAR)
2020 Edition (not published)
Expires February 1, 2021
SUBMIT WITH ZONING/BUILDING PERMIT or BUILDING PERMIT APPLICATION

This form is for zoning/building permit applications where the design professional is seeking a variance(s) to City of Philadelphia codes/regulations associated with a development site located in the Special Flood Hazard Area (SFHA). Once an application is reviewed and a refusal is needed, the reviewer will require this form to be submitted with any variance request related to floodplain regulations.

A variance is an authorization for the construction or maintenance of a structure or other land uses that would otherwise be prohibited or regulated by Philadelphia's Zoning Code or Building Codes to reduce the City's overall risk to flooding. Relevant to this guidance, 44 CFR §59.1 defines "variance" as "a grant of relief by a community from the terms of a floodplain management regulation." Variances are meant to address unique, site-specific and individual circumstances where the strict application of the ordinance may result in an extreme hardship to a property owner. While the variance is intended to provide relief, it still enables the City to:

- Preserve the purpose and intent of the zoning and building code;
- Minimize legal challenges to the zoning/building code or floodplain management regulations and avoid an unconstitutional "taking" of private property without compensation; and
- Protect the safety, health, and welfare of the public and emergency responders.

The authority to grant a variance is delegated to the City through State statutes. This authority empowers the City to establish a board(s) (Zoning Board and Board of Building Standards) to adjudicate variance applications and sets out the standards and elements necessary for granting variances.

See [FP-Variations](#)

ELEVATION CERTIFICATE

Requirements

REQUIRED 3 times:

(see section C on Elevation Certificate)

- **Building Permit submission**
- **During Construction**
 - **Lowest Floor installation**
 - No vertical work can occur until submitted
- **Final completion, prior to Certificate of Occupancy**

U.S. DEPARTMENT OF HOMELAND SECURITY
FEMA
NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE
AND
INSTRUCTIONS
2015 EDITION

OM3 No. 1860-0009
Expiration Date: November 30, 2018

ELEVATION CERTIFICATE
Instructions on pages 1-6

City official, (2) insurance agent/company, and (3) building owner.

FOR INSURANCE COMPANY USE

D. Route and
Policy Number:
Company NAIC Number:
ZIP Code:
Elevation, etc.)

Vertical Datum: NAD 1927 NAD 1983

above adjacent grade _____

to _____

E3: State _____

Elevation(s) (Base Flood Depth) _____

Elevation(s) (Base Flood Depth) _____

all previous editions.

Area (OPA)? Yes No

Form Page 1 of 6

FLOODPLAIN MANAGEMENT

New FEMA Elevation Certificate dated 2019, published February 2020

ELEVATION CERTIFICATE

How to complete fully and correctly

General:

- All lines shall be completed, and when not applicable an “N/A” should be entered
- Should be signed and sealed by a licensed surveyor/architect/engineer
- **A8-9: Flood Vents**
 - Complete fully per design plans
- **B9: Base Flood Elevation**
 - Always in **NGVD 29 datum**
 - Rounded to nearest tenth degree, no whole numbers
 - Should be based from Flood Insurance Study [FIS] when cross sections are available. If, no cross section, then use the Flood Insurance Rate Map [FIRM]

ELEVATION CERTIFICATE

How to complete fully and correctly

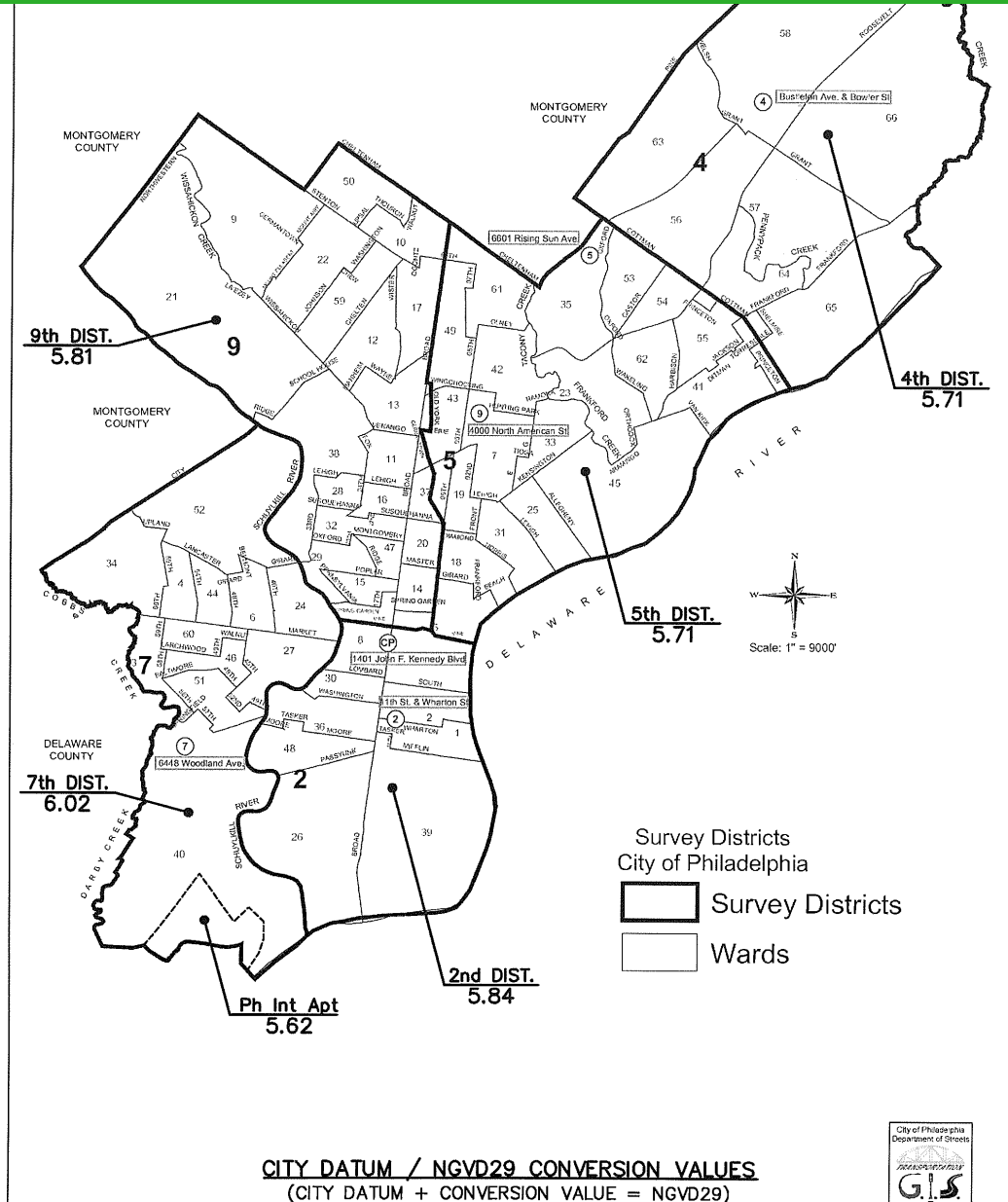
- **C2.a-h:** Structure design elevations (must be in NGVD 29)
 - **C2.a** lowest floor elevation of lowest enclosed space (IE. crawlspace (rat slab), basement slab, garage slab (if attached - townhouse/rowhouse))
 - **C2.c** is N/A in Philadelphia (No velocity or wave action zones)
 - **C2.e** Lowest machinery/equipment should be identified
 - In “Comments” section at bottom of PG2, list lowest elevations of these mechanicals/equipment if applicable: HVAC, electrical, gas, plumbing, elevators, transformer pad, generator, etc.

Any site plans illustrating flood elevations shall be in datum NGVD 29, if your converting City Datum to NGVD 29 - see conversion table as there are 7 survey districts with varying conversion factors. A note of which conversion factor must be placed on the plans.

ELEVATION CERTIFICATE DATUM

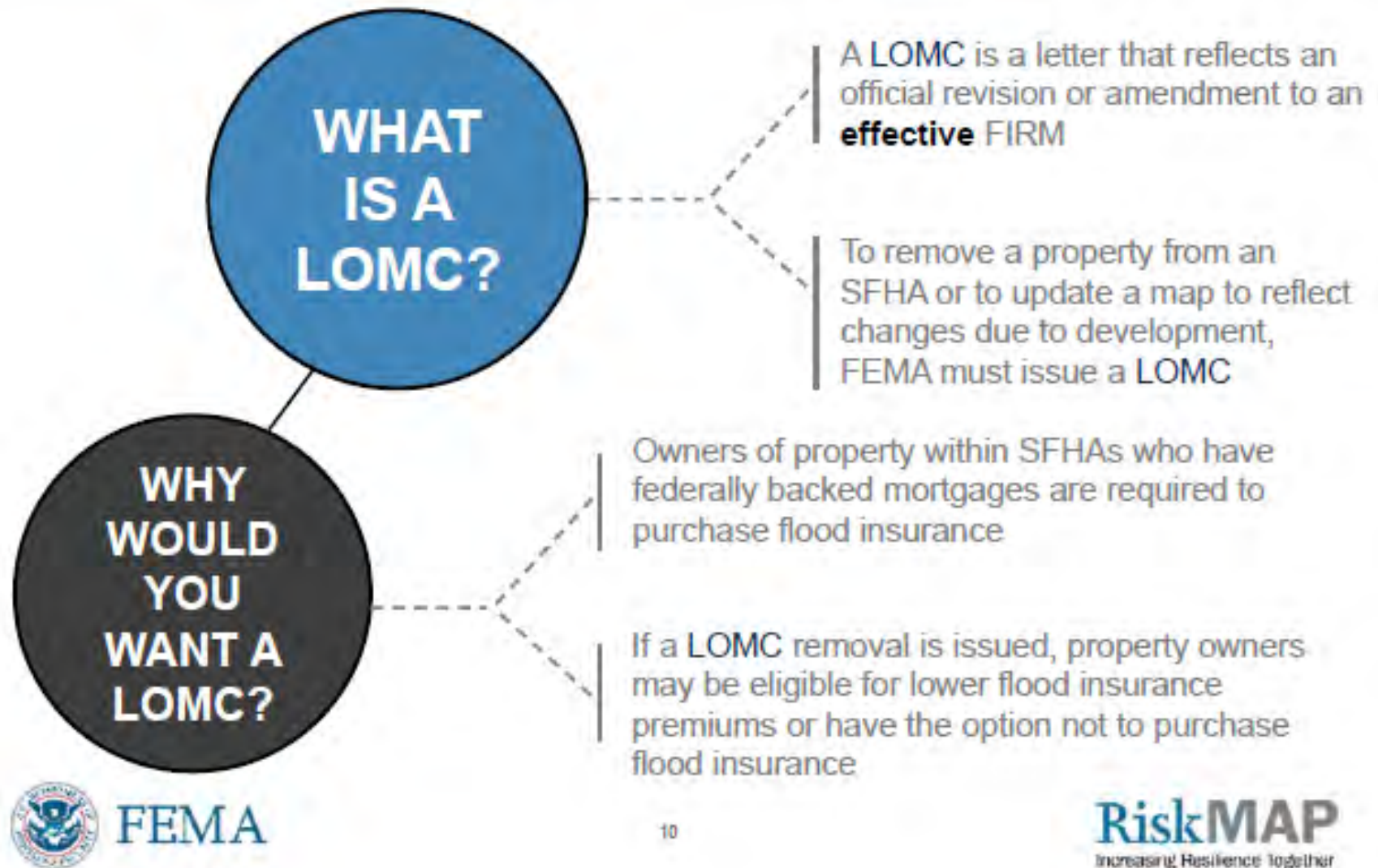
- FEMA FIRM maps: NGVD 29
- US standard: NAVD 88
- City Philadelphia standard: City Datum

Since FEMA FIRM's are in NGVD 29, then Elevation Certificates should be completed in NGVD 29. If surveying in City Datum, use chart to convert to NGVD 29. Plan drawings should clearly show datum used, and conversion factors used.



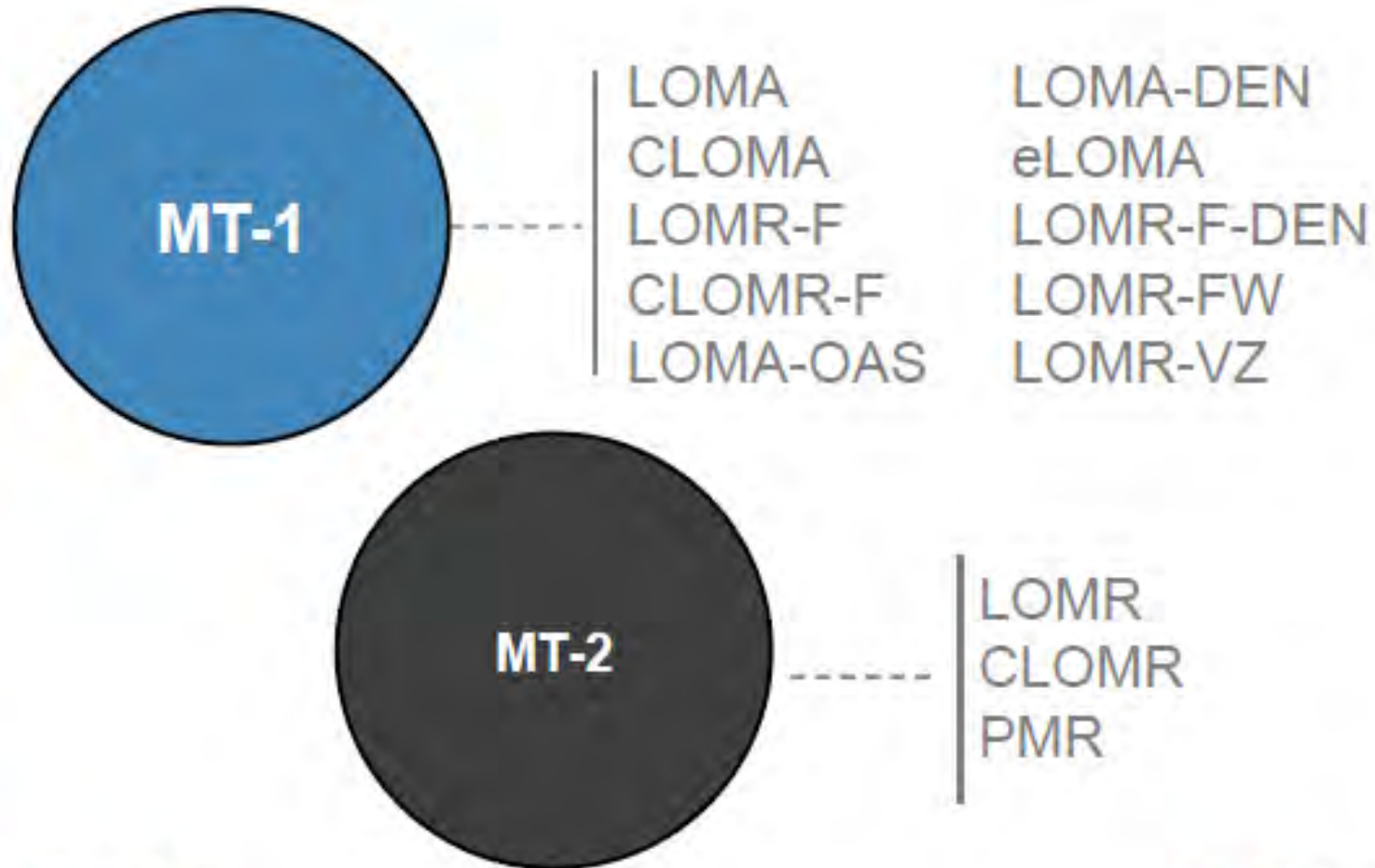
LETTER OF MAP REVISION [LOMC]

General



LETTER OF MAP REVISION [LOMC]

General



LETTER OF MAP REVISION [LOMC]

General

MT-1

- LOMA, CLOMA, LOMR-F, CLOMR-F
- Single or multiple structures or parcels receive a determination letter
- **Do not result in changes to the physical effective Flood Insurance Rate Map (FIRM)**
- Goal is usually to remove the insurance requirement, local permit requirements may still apply
- Homeowners who successfully remove their homes from the 1% floodplain should be encouraged to keep their flood insurance

MT-2

- LOMR, CLOMR, PMR
- Floodplains, floodways, BFEs, Cross Sections, etc. are revised
- **Result in an official revision to the physical effective FIRM and/or FIS; therefore, the community must be involved**
- More complicated than an MT-1
- Technical engineering changes resulting from a new study, development, or infrastructure projects.
- New or better data can trigger a LOMR

LETTER OF MAP REVISION [LOMC]

General

- **Reasons for a LOMR:**

- Modified hydrology (flood discharges)
- Modified hydraulics (elevations)
- Better topography (e.g. LiDAR, site-specific survey)
- Modified floodway
- New bridges/culverts
- Channel improvements/flood control projects (levees, dams, culverts)
- Large developments or roadway projects

- **CLOMR-F/LOMR-F:** Use of Fill: Generally, excavation of basements into fill may expose the structure to residual risk and damage associated with flooding and saturated fill. Designers proposing basements in fill are advised that the elevation requirements of this standard apply to the basement, unless the building and structure is dry-floodproofed in accordance with Section 6.2 See ASCE 24-14 2.4 Use of Fill

LETTER OF MAP REVISION [LOMC]

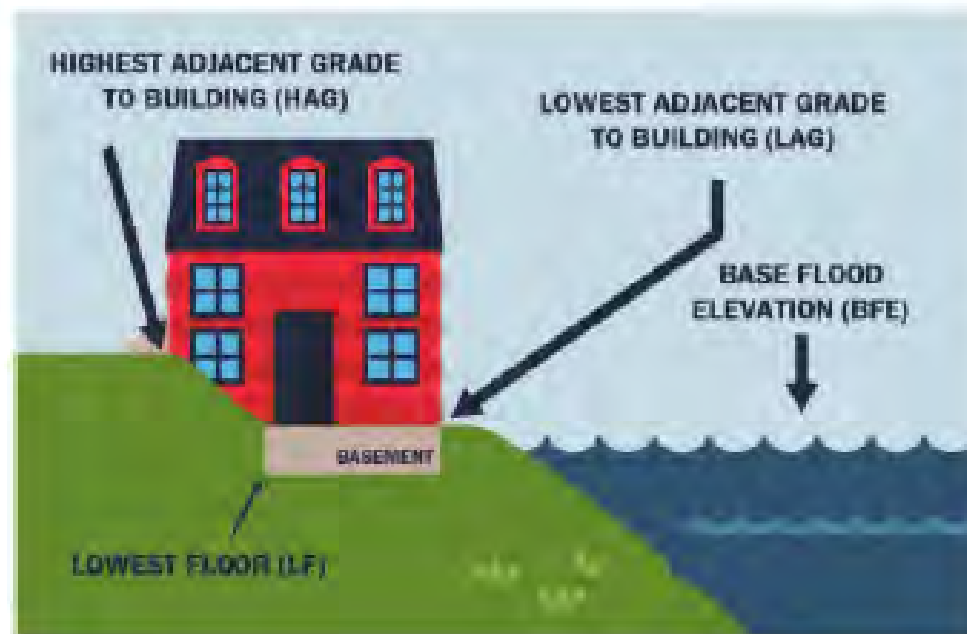
General

Permitting

- Lowest Floor Elevation
- Elevation Certificate

LOMC

- Elevation Form
- Lowest Adjacent Grade



FEMA

LETTER OF MAP REVISION [LOMC]

General

Community Acknowledgment Form Required (CLOMR-F/LOMR-F):

- Community Official Signs acknowledging:
 - Fill will not be placed in floodway
 - Complies with Endangered Species Act (ESA)
 - Have all necessary federal, state, & local permits
 - Existing and proposed structures will be “reasonably safe from flooding”
 - Supporting documentation is available to submit to FEMA upon request
 - **Community Officials do not have to sign if they do not concur!**
- **Similar process for CLOMR/LOMR as part of MT-2 applications**
 - **Additional public comment/appeal period**



See [FP-LOMC](#)

RESOURCES

Licenses + Inspections Website

Permits, violations & licenses

Get approval for construction in the floodplain

Construction projects in the Special Flood Hazard Area (SFHA) have special requirements. To determine if your project is in the floodplain, use the [floodplain map](#).

You must submit **floodplain documents** with all zoning or building permit applications for construction in the SFHA. For construction in the floodplain, refer to the **code bulletin for development in special flood hazard areas (PDF)**.

If the cost for a project is \$50,000 or more, you must attend a **floodplain scoping meeting** before submitting your building permit application. See the **information sheet about the mandatory scoping meeting** for more information.

Who

Any property owner or their authorized agent may request approval. Authorized agents include:

<https://www.phila.gov/services/permits-violations-licenses/apply-for-a-permit/building-and-repair/get-approval-for-construction-in-the-floodplain/>

RESOURCES

FEMA + Building Code Provisions

FEMA

Flood Resistant Provisions of the 2009 International Codes (2011)

The 2009 edition of the International Codes (I-Codes) contains provisions that meet or exceed the minimum flood-resistant design and construction requirements of the NFIP for buildings and structures. This page contains the following documents:

- A compilation of flood resistant provisions from the 2009 editions of the IBC, IRC, IEBC, IMC, IPC, IFGC, IFC, ISPC, IPSDC, and ICC Performance Code.

This document contains excerpts of the flood provisions from the 2018 editions of the IBC, IRC, IEBC, IMC, IPC, IFGC, IFC, ISPC, IPSDC, and ICC Performance Code.

2018 International Building Code
[a compilation of flood resistant provisions, prepared by FEMA]

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CHAPTER 1 ADMINISTRATIVE

[A] 101.2 Scope. The provisions of this code shall apply to the construction, alteration, relocation, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exception: Detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress, and their accessory structures not more than three stories above grade plane in height, shall comply with this code or the International Residential Code.

[A] 101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted.

Highlights:

- Published when I-Codes releases any new editions
 - **2009 – Current PA**
 - **2015 – City of Philadelphia IRC**
 - **2018 – City of Philadelphia IBC**
- More restrictive code applies
- Local amendments could effect which sections apply
- During building permit review this document can assist in comment/request for information from applicant

RESOURCES

Code Master

CodeMaster
NATIONAL FLOOD INSURANCE PROGRAM | ICG INTERNATIONAL CODE COUNCIL | FLOOD RESISTANT DESIGN | 2015 IBC | 2015 IRC | ASCE 7-10, 24-14

PRELIMINARY CONSIDERATIONS

This CodeMaster identifies a 12-step procedure for designing a structure for flood loads in accordance with the requirements of the 2015 International Residential Code (IRC), the 2015 International Building Code (IBC), ASCE 7-10 Minimum Design Loads for Buildings and Other Structures, and ASCE 24-14 Flood Resistant Design and Construction.

All steps will not be applicable in all cases, but following the applicable steps is necessary to meet the requirements of the National Flood Insurance Program (NFIP) – see Code of Federal Regulations, Title 44, Parts 59 and 60.

SECRETS OF THE CODEMASTER: Consider the Jurisdiction to determine whether and how its floodplain management regulations and building code requirements vary from the flood resistant design and construction requirements found in the IRC, IBC, and ASCE 24. Also inquire if IBC Appendix G (Flood Resistant Construction) is adopted.

The CodeMaster applies to new construction, which also includes existing structures that are **Substantially Damaged** or **Substantially Improved**, which may be brought into compliance with the requirements for new construction.

The flow chart below will guide designers in their use of this CodeMaster.

FLOOD TERMINOLOGY

This terminology section is provided so that the designer can easily refer back to these terms and acronyms. Where used in this CodeMaster, these terms are in bold italics as a reminder that they are defined here.

500-Year Flood Elevation: The elevation of flooding having a 0.2-percent chance of being equaled or exceeded in any given year. ASCE 24-14 Section 1.2.

Base Flood: The flood having a 1-percent chance of being equaled or exceeded in any given year. Also known as the “100-year flood.” 2015 IBC Section 202, ASCE 24-14 Section 1.2.

CodeMaster developed by
Structures & Codes Institute
A subsidiary of S.K. Ghosh Associates Inc.
www.ski.org/structures
ISBN 978-1-526208-33-9

Tel: (847) 881-2703
Fax: (847) 961-2702
skghosh@gmail.com
Copyright © 2015 by SKGI

Tips:

- Published when I-Codes releases any new editions
 - **2009 – Current PA**
 - **2015 – City of Philadelphia IRC**
 - **2018 – City of Philadelphia IBC**
- For purchase [here](#)
- Local amendments could effect which sections apply
- During building permit review this document can assist in comment/request for information from applicant
- 8 concise pages
- Quick guide that can easily sit on your desk

RESOURCES

FEMA LOMC's

- FEMA website: www.fema.gov
- [MT-1 Application and instructions](#)
- [MT-2 Application and instructions](#)
- FEMA online submissions: www.fema.gov/online-lomc
- FEMA Flood Map Service Center: <http://msc.fema.gov>
- **FEMA Map Information eXchange (FMIX): 877-FEMA MAP (877-336-2627)**
- **State NFIP Coordinator: Bill Bradfield wbradfield@pa.gov**

Other resources:

- [FEMA Flood Hazard Mapping Frequently Asked Questions](#)
- [Flood Map Revision Processes](#)
- [LOMA and LOMR-F Processes](#)
- [Establishing Effective Dates for LOMRs](#)
- [Fee Schedule](#)
- [eLOMA information](#)

RESOURCES

FEMA Technical Bulletins

Technical Bulletins:

- [Openings in Foundation Walls and Walls of Enclosures Below Elevated Buildings Flood](#)
- [Damage Resistant Materials](#)
- [Non-Residential Floodproofing and Certification](#)
- [Elevator Installation](#)
- [Free-of-Obstruction Requirements](#)
- [Below-Grade Parking Requirements](#)
- [Wet Floodproofing Requirements](#)
- [Corrosion Protection for Metal Connectors](#)
- [Design and Construction Guidance for Breakaway Walls Below Elevated Buildings in Coastal Zones](#)
- [Ensuring that Structures Built on Fill in or Near SGHA are Reasonably Safe from Flooding](#)
- [Crawlspace Construction](#)

www.fema.gov/nfip-technical-bulletins

*note all development is subject to local codes/regulations

*note FEMA Technical Bulletin provide guidance on min. NFIP standards



Flood Damage Materials Requirements

for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program

Technical Bulletin 2 / August 2008

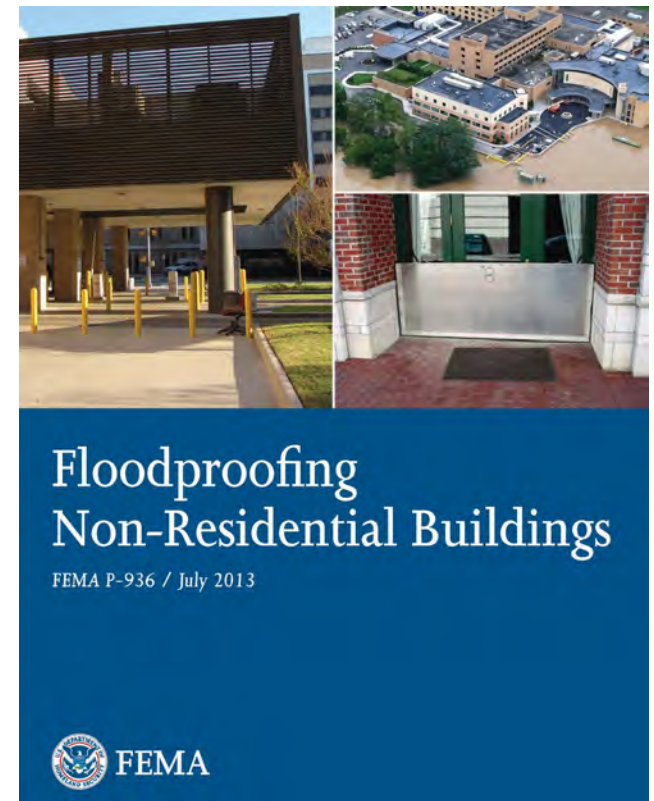
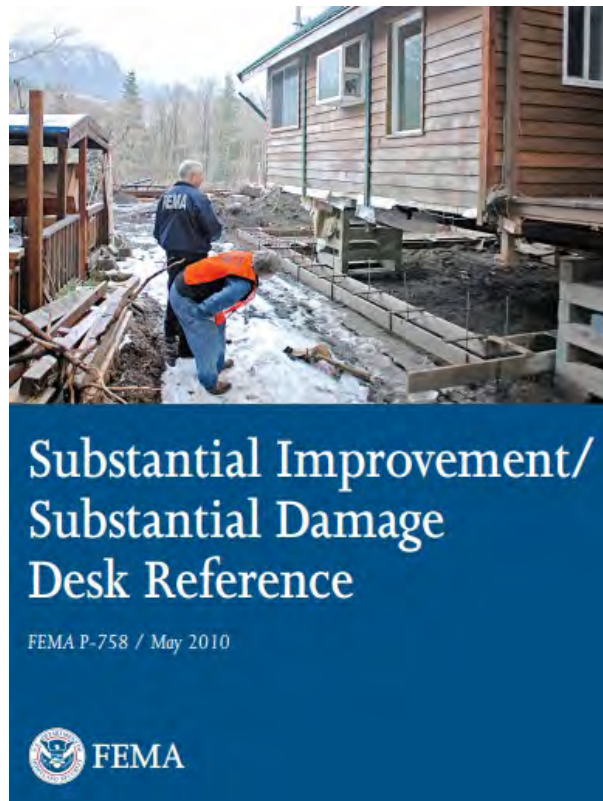
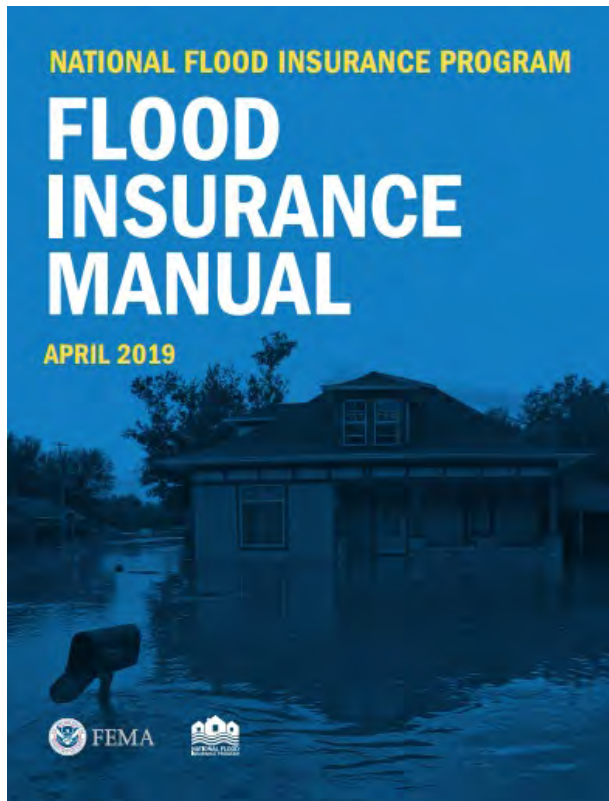


Table 2. Types, Uses, and Classifications of Materials

Types of Building Materials	Uses of Building Materials			Classes of Building Materials			
	Floors	Walls/Ceilings	Roofs	Acceptable	Unacceptable	Unacceptable	Unacceptable
Structural Materials (floor slabs, beams, girders, framing, and joists)							
Asbestos-cement board							
Brick							
Face or glazed							
Common (clay)							
Cast stone (clay)							
Cement board (fiberglass mat)							
Cementitious, formed-in-place							
Clay tile, structural glazed							
Concrete, precast or cast-in-place							
Concrete block*							
Gypsum products							
Paper-faced gypsum board							
Non-paper-faced gypsum board							
Gypsum board							
Kerolan cement or plaster							
Plaster, other than, including structural							
Water-resistant, exterior grade							
Gypsum, interior sheathing							
Hardboard (high-density fiberboard)							
Tempered, exterior sheathing							
All other types							
Mineral fiberboard							
Oriented strand board							
Exterior strand board (OSB)							
Edge seal resistant OSB							
All other types							
Particle board							
Plywood							
Marine grade							
Pressure-treated, alkaline copper quaternary (ACQ) or copper azole (CA)							

RESOURCES

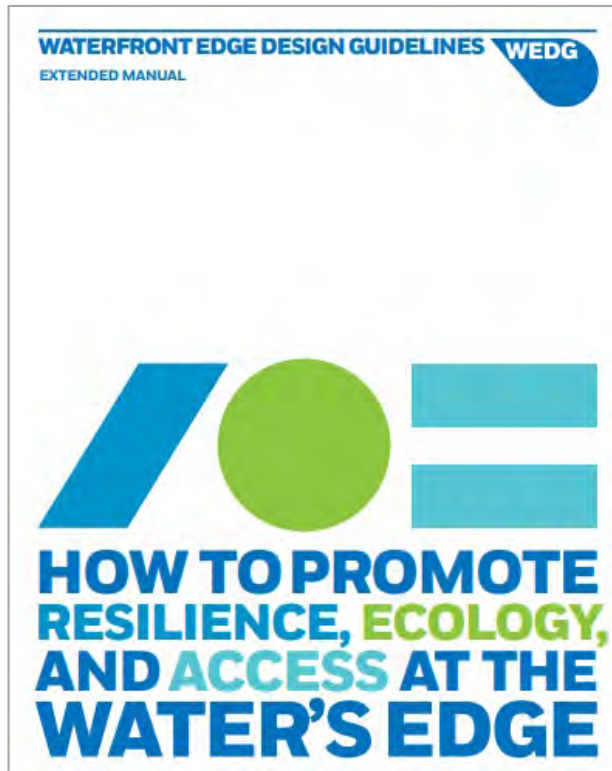
Other FEMA Guidance



***note all development is subject to local codes/regulations**

RESOURCES

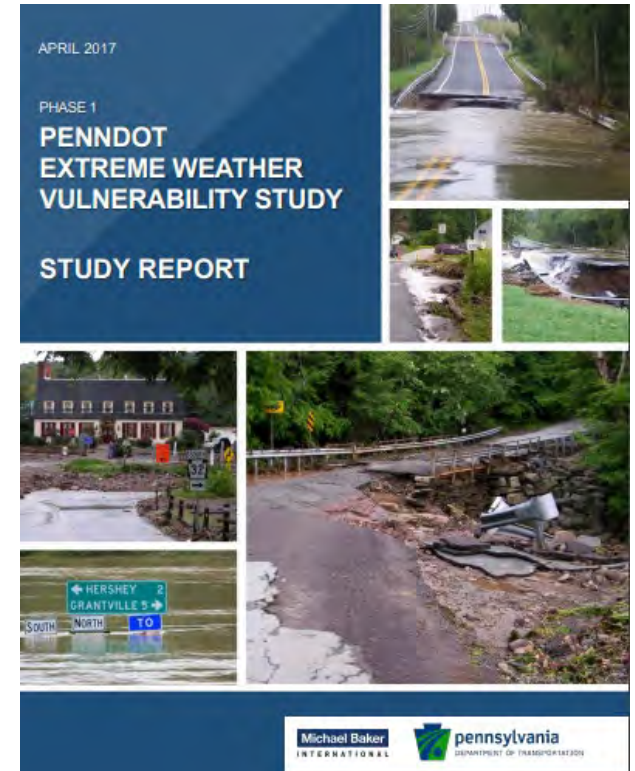
Other



**WATERFRONT EDGE DESIGN
GUIDELINES**
WATERFRONT ALLIANCE



**DESIGN AND PLANNING
FOR FLOOD RESILIENCY**
NYC PARKS DEPARTMENT



**EXTREME WEATHER
VULNERABILITY STUDY**
PENNDOT

RESOURCES

Other

The screenshot shows the Federal Highway Administration website. At the top, there are navigation links: About, Programs, Resources, Briefing Room, Contact, and Search FHWA. Below this is the FHWA logo and the text 'U.S. Department of Transportation Federal Highway Administration'. The main heading is 'Bridges & Structures'. Underneath, there are several menu items: Structures, Geotech, Hydraulics, and Safety and Management. The 'Hydraulics' menu is expanded, showing sub-items: Hydrology, Coastal Highways, Highway Drainage, Culvert Hydraulics, Bridge Hydraulics, and Scour. The 'Floodplains' sub-section is highlighted, with sub-items: Hydrology and Climate Change & Extreme Events. Below the navigation is a breadcrumb trail: Home / Programs / Bridges & Structures / Hydraulics / Hydrology & Floodplains / Floodplains. The main content area is titled 'Floodplains' and includes a section for 'Principal Documents' with a list of links: [23 CFR 650 Subpart A Location and Hydraulic Design of Encroachments on Flood Plains \(11/26/1979\)](#), [Highway Embankments versus Levees and other Flood Control Structures \(09/10/2006\)](#), and [Backwater Criterion for Hydraulic Design of Structures \(04/21/1992\)](#). There is also a 'Policy' section with a link to [Highway Embankments versus Levees and other Flood Control Structures \(09/10/2006\)](#).



PROCEDURES FOR COORDINATING WITH FEMA REQUIREMENTS FEDERAL HIGHWAY

RESOURCES

Training

The image shows two overlapping screenshots of websites. The background screenshot is the TRAIN PA website, featuring a login form on the left with fields for 'Login Name' and 'Password', a 'Remember me' checkbox, and a 'Login' button. Below the login form is a 'Create an Account' button. The main content area of TRAIN PA includes a 'Welcome to TRAIN PA' message and a list of features: 'Quickly find and register for many of our courses and participating TRAIN affiliate sites', 'Track your learning with personal online progress reports', 'Access valuable materials, course materials, and improve your learning experience, and', and 'Stay informed of the latest public health news or expertise'. A 'Log In or Create Account' link is visible in the top right corner of the TRAIN PA header.

The foreground screenshot is for the PAFPM website, titled 'PA Construction Codes Academy'. It features a navigation menu with links for 'FLOODPLAIN MANAGEMENT', 'ENERGY CODE RESOURCES', 'ENERGY RESILIENCE', and 'CONTACT'. Below the navigation is a large banner for 'FLOODPLAIN MANAGEMENT COURSE L-273 (03-19-19 TO 03-22-19) (COLUMBIA COUNTY)'. The PAFPM logo is prominently displayed in the center. Below the logo is a navigation menu with links for 'HOME', 'ABOUT US', 'COMMITTEES', 'JOIN US', 'NEWS', 'PAFPM EVENTS', 'BECOME A CFM', 'RESOURCES', and 'CONTACT'. At the bottom of the PAFPM screenshot, a user notification states 'Joshua Lippert (Joshua.Lippert@phila.gov) is signed in' above a scenic landscape image of a river and mountains.

Others

- ASFPM.org
- PAFPM.org
- FEMA Emergency Management Institute

THANK-YOU!

Questions and/or comments?



JOSH LIPPERT, CFM
FLOODPLAIN MANAGER
JOSHUA.LIPPERT@PHILA.GOV