

DEPARTMENT OF LICENSES AND INSPECTIONS CODE BULLETIN No. A-1702R		CODE OF GENERAL ORDINANCES OF THE CITY OF PHILADELPHIA TITLE 4 — BUILDING CONSTRUCTION AND OCCUPANCY CODE TITLE 14- ZONING AND PLANNING
SUBJECT OF BULLETIN: DEVELOPMENT IN SPECIAL FLOOD HAZARD AREAS		REFERENCE CODE SECTION(S): Zoning, IBC, IRC ISSUE DATE August 24, 2017
ISSUED BY		REVISION DATE October 19, 2018 July 31, 2020
NAME(S): Josh Lippert, CFM		TITLE: Floodplain Manager, Department of Licenses and Inspections PAGE 1 OF 14

PURPOSE:

The purpose of this Code Bulletin is to provide transparency to the City’s various codes/regulations related to floodplain develop as well as establish the required documentation to be submitted for approval of permits and Certificates of Occupancy for any development in Special Flood Hazard Areas (SFHA).

DISCUSSION:

The Department of Licenses and Inspections enforces the National Flood Insurance Program flood hazard mitigation requirements through the issuance of zoning and building permits. There are code provisions in both the Zoning and Building Code which regulate activities in the SFHA (floodplain).

In 1968, Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flood damage to structures. If a participating community fails to properly enforce such ordinances, FEMA is authorized to remove those communities from the NFIP. Such removal would result in loss of access to flood insurance for its citizens and loss of FEMA disaster assistance funds. The City of Philadelphia participates in the NFIP, and the Department of Licenses and Inspections enforces floodplain regulations through the issuance of zoning and building permits. There are code provisions in both the Zoning and Building Code which regulate activities in the SFHA (floodplain).

In 2016, the Federal Emergency Management Agency (FEMA) of the U.S. Department of Homeland Security conducted a Community Assistance Visit (CAV) of the City of Philadelphia. The CAV is a major component of the National Flood Insurance Program’s (NFIP’s) Community Assistance Program (CAP). The CAV is a visit to a community by FEMA staff that serves the dual purpose of providing technical assistance to the community and assuring that the community is adequately enforcing its floodplain management regulations. Generally, a CAV consists of a tour of the floodplain, an inspection of community permit files, and meetings with local appointed and elected officials. If any administrative problems or potential violations are identified during a CAV, the community will be notified and given the opportunity to correct those administrative procedures and remedy the violations to the maximum extent possible within established deadlines. FEMA will work with the community to help them bring their program into compliance with NFIP requirements. In extreme cases where the community takes no action to bring itself into compliance, FEMA may initiate an enforcement action against the community.

The Commissioner of the Department of Licenses and Inspections is designated as the Floodplain Administrator for the City of Philadelphia (Zoning Code, Section 14-704(4)(d). The Commissioner is authorized to delegate duties and responsibilities set forth in the flood protection regulations to qualified technical personnel, plan examiners and inspectors, and other employees. Therefore, the Department is responsible for the City of Philadelphia’s compliance pursuant to the participation requirements of the NFIP as set forth in the Code of Federal Regulations at 44 CFR § 59.22.

This Bulletin serves to address some of those recommendations as they relate to the enforcement of code provisions through the issuance of zoning and building permits by clarifying and improving upon the collection of compliance documentation regarding development in the floodplain.

SCOPE:

This Code Bulletin serves to address specific recommendations made by FEMA in the 2016 CAV.

FEMA recommendation – *“The City of Philadelphia must make their floodplain provisions more transparent both for the permit applicants and for City staff administering the ordinance.”*

Both the Philadelphia Zoning Code and the Philadelphia Building Construction and Occupancy Code (International Building Code as adopted) contain code provisions regulating floodplain development. The issuance of zoning and building permits serves to apply these code provisions to proposed development activities.

This Code Bulletin establishes a new Flood Protection Acknowledgement Form – ZONING (FP-Z) to be submitted with zoning applications, a Flood Protection Form – EXISTING BUILDINGS (FP-EX) to be submitted with renovation/additions to existing buildings, and a Flood Protection Form – GENERAL – (FP-G) (for building permit applications. These forms highlight the floodplain provisions from the respective codes for both applicants and staff.

FEMA recommendation – *“Communities are required to obtain and maintain compliance documentation on all structures and development within the SFHA in perpetuity. The City (of Philadelphia) does not currently have a process in place to ensure as-built, or finished construction, documentation is collected. The City needs to create a process that verifies that all as-built elevations are filed prior to issuing a Certificate of Occupancy. FEMA highly recommends that the City start requiring the submission of a finished construction Elevation Certificate (EC) for all development in the SFHA. Not only does the EC collect all of the elevation, utilities and openings data required by their floodplain ordinance for compliance, the EC is also a minimum requirement for membership in the voluntary, incentive program called the Community Rating System (CRS) that could earn citizens in the City discounts on their flood insurance.”*

FEMA recommendation – *“We recommend adding clear language related to floodproofing non-residential structures to state that a registered professional engineer/architect must certify that the design and methods of construction meet the requirements as defined in the 44 CFR § 60.3(c)(4).”*

Philadelphia’s Building Construction and Occupancy Code and Zoning Code serve to regulate floodplain development in compliance with the NFIP. The Building Code and Administrative Code require the submittal of an Elevation Certificate to the code official upon completion of the first-floor framing. A flood-proofing certificate is required where commercial buildings are dry flood-proofed in addition to an Elevation Certificate.

An Elevation Certificate, is a form developed by FEMA that verifies the elevation data of a structure on a given property relative to the ground level. The Elevation Certificate is used to ensure compliance with floodplain management ordinances and is also used by insurance agents and companies in the rating of flood insurance policies. The Certificate documents the base flood elevation and the building’s construction above that elevation.

The Administrative Code requires submittal of construction documents and states, “Where special conditions exist, the code official is authorized to require additional construction documents to be prepared by a registered design professional. The construction documents shall include the name and address of the registered design professional and shall be signed, sealed and dated by the registered design professional in accordance with the professional registration laws.”

This Code Bulletin establishes when the Department will require an Elevation Certificate and Floodproofing Certificate, completed by a design professional:

- Upon application for the building permit.
- Upon completion of the lowest floor (including basement, crawlspace or enclosed floor), prior to further vertical construction.
- Upon completion of the structure and prior to issuance of the Certificate of Occupancy.

This Code Bulletin also serves to address the complexity with existing structures and substantial improvement and/or damage determinations.

Pre-FIRM Structures

In Philadelphia, pre-FIRM structures are those structures constructed or altered before December 31, 1978, the effective date of Philadelphia's initial Flood Insurance Rate Map (FIRM). This is the date on which Philadelphia began regulating floodplain development.

Post-FIRM Structures

A floodplain structure in Philadelphia is considered post-FIRM if it was built (or substantially improved) after December 31, 1978, the effective date of Philadelphia's initial Flood Insurance Rate Map (FIRM). Post-FIRM structures should already be in compliance with floodplain development standards. Any subsequent improvements **must maintain compliance with the standards that were in effect when the building was built**. Renovations, repairs, or additions to post-FIRM structures are thus regulated through floodplain development standards as new construction.

However, a post-FIRM structure that was in full compliance at the time of its construction may not meet current floodplain development standards. This can result from a map revision that expands the regulated floodplain area and/or increases the calculated height of the 100-year flood (Base Flood Elevation). It can also result from enactment of stricter standards for floodplain development. In August 2012, the Philadelphia Zoning Code was revised to require flood protection to a level of 18 inches above the Base Flood Elevation, which is 6 inches higher than previous requirements based on the federal minimum standard (some structures are required to be BFE+24" – see ASCE 24-14 "Flood Design Class of Buildings and Structures").

- If the site of a post-FIRM structure was not mapped as a Special Flood Hazard Area at the time of its construction, then repairs or alterations are regulated as though it is a pre-FIRM structure.
- If the required flood protection level for a post-FIRM structure has increased since the time of construction, then minor alterations should comply with the standards that were in effect when the building was built. However, **any substantial improvements to a post-FIRM structure must meet the requirements of the floodplain development standards**, which may require elevation of the entire building.

Codes

Philadelphia Zoning Code – Chapter 14-700

Philadelphia Administrative Code**

2015 International Residential Code

- Chapter 1 Administrative
- Chapter 3 Building Planning
 - Section R322 Flood-Resistant Construction
- Chapter 4 Foundations
 - Section R401 Foundations
 - Section R408 Under-Floor Space
 - Section 506 Concrete Floors
- Mechanicals/electrical/plumbing
 - Section M1301.1.1 General Mechanical System Requirements
 - Section M1401.5 heating and Cooling Equipment
 - Section M1601.1.10 Duct Construction
 - Section M1701.2 Combustion Air
 - Section M2001.4 Boilers and Hot water Heaters
 - Section M2201.6 Special Piping and Storage Systems
 - Section G2404.7 Fuel Gas
 - Section P2601.3 Plumbing Systems
 - Section P2602.2 Individual Water Supply and Sewage Disposal
 - Section P2705.1 Plumbing Fixtures, Installation
 - Section P3001.3 Sanitary Drainage
 - Section P3101.5 Vent Systems
- Appendix E Manufactured Housing Used as Dwelling

2018 International Building Code

- Section 104 Duties and Powers of the Building Official
- Section 202 Definitions
- Chapter 8 Interior Finishes
- Chapter 11 Accessibility

- Chapter 12 Interior Environment
- Chapter 14 Exterior Walls
- Chapter 16 Structural Design Requirements
 - Section 1603 Construction Documents
 - Section 1605 Load Combinations
 - Section 1612 Flood Loads
- Chapter 18 Soils and Foundations
- Chapter 27 Electrical
- Chapter 30 Elevators and Conveying Systems***
- Chapter 31 Special Construction

2018 International Building Code – Appendix G**

ASCE 24-14

Code Bulletin – Development in Special Flood Hazard Areas (SFHA)

*Note that more restrictive code applies

**Appendix G supersedes the Ch 3 of the Admin Code (that notes a bldg. permit is only required if earth moving is over 5,000) so we can require a bldg. permit/ bldg. refusal.

*** 2.27.3 Firefighters' Emergency Operation: Automatic Elevators Firefighters' Emergency Operation shall apply to all automatic elevators except where the hoistway or a portion thereof is not required to be fire-resistive construction (see 2.1.1.1), the rise does not exceed 2 000 mm (80 in.), and the hoistway does not penetrate a floor. NOTE (2.27.3): When the structure (building, etc.) is located in a flood hazard area, the alternate and designated levels (see 8.12.1) should be above the base flood elevation.

ASME A17.1-2016/CSA B44-16

Forms – see [here](#) for online pdf's. (note: forms have an expiration date, and are updated on a yearly basis)

- **Flood Protection Acknowledgement Form – ZONING (FP-Z)**
 - 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 Codes, ASCE 24, ASCE 7, and Appendix G) associated with a development site located in the Special Flood Hazard Area (SFHA).
- **Flood Protection – Scoping Meeting Request Form (FP-SRF)**
 - Required prior to the submission of any building permits over \$50,000 in value when they parcel is located within the SFHA.
- **Flood Protection – Scoping Meeting Summary Form (FP-SF)**
 - Document that is provided when a Flood Protection – Scoping Meeting is require. This document must be signed by the department and accompany a Building Permit submission.
- **Flood Protection Form – EXISTING BUILDINGS (FP-EX)**
 - For an existing building(s) in the Special Flood Hazard Area (SFHA) being renovated/alterd and/or an addition being constructed. The form serves to determine whether the development will constitute a substantial improvement, as well as establish which floodplain regulations apply.
- **Flood Protection Form – GENERAL (FP-G)**
 - For building permit applications to confirm all development meets the City of Philadelphia's Zoning Code as well as additional building regulations (IRC 2015, IBC 2018, Administrative Codes, ASCE 24, and Appendix G) associated with a development site located in the Special Flood Hazard Area (SFHA).
- **Flood Protection Form – EZ PERMITS (FP-EZ)**
 - For EZ permit applications to confirm all development meets the City of Philadelphia's Zoning Code as well as additional building regulations (IRC 2015, IBC 2018, Administrative Codes, ASCE 24, and Appendix G) associated with a development site located in the Special Flood Hazard Area (SFHA).
- **Flood Protection Form – Letter of Map Change (FP-LOMC)**
 - For development pursuing a FEMA Letter of Map Change determination through CLOMR-F/LOMR-F or CLOMR/LOMR process. See FEMA's guidance for completion of application, City will review and comment and/or sign the Community Acknowledgement Form as part of a full FEMA application.
- **Flood Protection Form – No Rise (FP-NR)**
 - For development in the floodway or SFHA's without designated floodways.
- **Flood Protection Form – Variance (FP-VAR)** – for reference only
 - For development pursuing a variance these are the conditions that must be met.
- **Flood Protection – KEY TERMS**
 - Definitions for terms found in the above forms.
- **Structural Design Criteria Form**
 - Flood structural design calculations must be provided on this form, when located in a FEMA SFHA.

Datum

All flood elevations shall appear on plans and Elevation Certificates as NGVD 29. If necessary you may use a conversion factor to convert City Datum to NGVD 29. See (Appendix A) for conversion factor chart. If converting to any Datum other than NGVD 29, please provide conversion factor used on plan drawings.

Residential vs. Non-residential

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, group homes, congregate facilities, social rehabilitation facilities, alcohol and drug centers, convalescent facilities, hospitals, nursing homes, mental hospitals, detoxification facilities, prisons, jails, reformatories, detention centers, correctional facilities, and prelease centers (ASCE 24)

Non-residential – any building or structure or portion thereof that is not classified residential (ASCE 24)

Mix-use/Multi Family Residential

Building or structure with residential and non-residential uses.

Lobby refers to a space designed to provide separation and control access between public spaces and commercial or residential spaces, including access to dwelling units. The term includes vestibules, foyers, and spaces or areas that provide access to elevators. Lobbies with furniture, sitting areas, trash receptacles, or other contents or fixtures change the use of the area to something other than strictly building access. Tenant mailboxes, security desks, and tenant services would be considered uses other than building access.

Requirements based on occupancy

Description	Residential	Non-Residential	Mixed-Use
Wet Floodproofed enclosure below the BFE (in areas other than a basement)	Allowed for parking, storage, and building access	Allowed for parking, storage, and building access	Allowed for parking, storage, and building access
Below-grade areas (basements)	Prohibited	Allowed if dry floodproofed	Allowed for non-residential portions, if dry floodproofed
Below-ground parking	Prohibited	Allowed, if dry floodproofed	Allowed for non-residential portions, if dry floodproofed
Dry floodproofed areas below the BFE	Prohibited for dwelling units and areas that support dwelling units, including lobbies, foyers, and other ancillary areas (including offices, mail rooms, party and board rooms, and exercise rooms)	Allowed for all areas	Allowed for non-residential portions
Mechanical, Electrical, and Plumbing Systems	Located 18” above the BFE or, if below the BFE, designed to resist flood loads and prevent water from entering or accumulating within the components	Located 18” above the BFE or, designed and/or located to prevent water from entering or accumulating within the components; can be within a dry floodproofed area	Located 18” above the BFE or, designed and/or located to prevent water from entering or accumulating within the components; only components associated with non-residential uses can be within a dry floodproofed area

* See Design Flood Elevation in ASCE 24 as in some instances it may be BFE+24”

Wet Floodproofing - Residential

Any area in which wet floodproofing is used in a residential structure for areas of parking, storage, and building access, may not be converted in the future to livable space. For instance, you may not convert a wet floodproofed garage or storage space to a bedroom, recreation room and/or office area.

Accessory Structures

Accessory structures of any size must be adequately anchored to resist floatation, collapse, and lateral movement and have proper flood openings. They must be used solely as parking or incidental storage.

Temporary Structures + Storage

Temporary structures of any size must be adequately anchored to resist floatation, collapse, and lateral movement and have proper flood openings. They must be used solely as parking or incidental storage. However, if on wheels (“road-ready”), and not connected to utilities, then they may be stored on site up to 180 consecutive days. Vehicles and trailers must be licensed and/or registered to be stored on site.

Substantial Damage

Substantial damage refers to damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. A declaration of substantial damage comes from the Department, typically following a flood.

To calculate substantial damage, the department would make a visual inspection of a house, making notes of the impacts to the structure itself and, when possible, to the interior. These notes, coupled with other information such as property valuations and estimated costs to repair, are used to calculate the percentage of flood damage to the structure. Once a determination on the percentage of damage is made, the Department would then notify the property owner. Permit applications to correct substantial damage would be regulated as a “substantial improvement.”

Substantial improvement

Substantial improvement refers to 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 before the “start of construction” of the improvement. This term includes the restoration of structures that have incurred “substantial damage,” regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a structure to correct existing violations of State or local health, sanitary, or safety code specifications (other than a substantial damage declaration) that have been identified by the local code enforcement official and that are the minimum necessary to assure safe living conditions or
2. Any alteration of a “historic structure,” provided that the alteration will not preclude the structure’s continued designation as a “historic structure.”

Floodplain development standards for new construction apply to substantial improvements.

Estimated Cost

To make a determination of substantial improvement, the entire cost of a project must be included. Therefore, where a building permit application is submitted indicating the “estimated cost of construction”, the actual determination must include costs associated with other required permits, such as plumbing, electrical, mechanical, etc.

Market Value of a Structure

For purposes of this Code Bulletin, the market value of a structure shall be the market value of the property minus the value of the taxable land. These amounts are found through the Office of Property Assessment web site at <http://property.phila.gov/>

Exception for Historic Structures

A Historic Structure is any structure that is:

- Listed individually in the National Register of Historic places (a listing maintained by the Department of the Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; or

- Individually listed in a state inventory of historic places in states with preservation programs that have been approved by the Secretary of the Interior; or
- Individually listed on the Philadelphia Historical Commission inventory of historic places.

Historic structures are **exempt** from the substantial improvement requirements, provided that the project maintains the historic status of the structure. However, a **variance** is required per Appendix G105.3, through the Board of Building Standards.

DIRECTION:

Zoning and Building Permits:

The Zoning Code requires a zoning permit for any development in the SFHA. "Development" includes any construction, reconstruction, modification, extension, expansion, or substantial improvement of structures; filling; dredging; mining; grading; paving; excavation; drilling operations; or storage of equipment or materials; land excavation; land clearing; land improvement; or any construction thereof.

In cases where a building permit is not required by the Administrative Code, the issuance of a zoning permit may include the enforcement of Building Code requirements related to development in the floodplain. For example, a building permit is required for earth moving activities of an area in excess of 5,000 square feet. Earth moving of 4,000 square feet of area would not require a building permit. However, Section G401 of IBC regulates earth moving activities in the floodway and requires a hydrologic and hydraulic analysis be performed. Such a requirement may be enforced through the issuance of a zoning permit.

The following documentation shall be required with permit applications and permits for development within Special Flood Hazard Areas (SFHA's).

A. Zoning Permits:

The Philadelphia Licenses and Inspections Department is designated by the Zoning Code to review and provide approval for all zoning permits for construction and earth-moving activity along watercourses located in the SFHA. Such approval does not relieve the Department from responsibility for enforcing the Zoning Code's floodplain provisions.

The Department will require the following be submitted with all zoning permit applications for proposed development in the SFHA:

1. Zoning Permit Application

The following should be submitted to The Department Licenses & Inspections - Permit Services: 1401 John F. Kennedy Boulevard - Concourse Level, Philadelphia, PA 19102

- a. A completed, and signed **Flood Protection Acknowledgement Form – ZONING (FP-Z)**
- b. Site Plan Requirements
 - 1) Plans must be signed/sealed by a PA registered design professional
 - 2) Plans must be of professional quality and drawn to scale (e.g. 1/4" = 1' – 0")
 - 3) Minimum sheet size is 18" x 24".
 - 4) Elevations must use NGVD 29 as per FIRM panels
 - 5) The following information must be included on the plan:
 - i. Special Flood Hazard Zones (A, AE, Floodway, X, 0.2%) from effective Flood Insurance Study (FIS), and when a FIS is not available from the Flood Insurance Rate Maps (FIRM)
 - ii. Existing/proposed topography
 - iii. Building footprints (including accessory structures, transformer pads, etc.)
 - iv. Property boundaries
 - v. Over excavation limits
- c. Changes in SFHA or development in SFHA without floodway designated
 - i. CLOMR and/or CLOMR-F determination letter from FEMA

2. Zoning Refusals

- a. The following are Zoning refusals that can be issued for developments in the SFHA:

- 1) Prohibited Uses
 - 2) Prohibited hazardous materials storage/production
 - 3) Use for storage of goods/materials and/or recreational vehicles
 - 4) Prohibited floodway Development, except docks, roadways, trails, bridges, and public utilities
 - i. Exceptions require No Rise Study and/or Certificate
 - 5) Changes in the Special Flood Hazard Area with or without use of fill
 - 6) Alteration or relocation of a watercourse without other State/federal permits (including submerged lands license)
 - b. All other requirements will be reviewed during a Building Permit Application – see building permits
- 3. Zoning Appeals**
- a. For any of the Zoning Refusals above, the Applicant may, at its discretion, appeal through the Zoning Board of Adjustments.
 - i. See flood protection variance requirements
- 4. Record Retention**
- a. The Department shall retain all documentation collected concerning a review of a development in the SFHA, with the permit application records. Such records shall be available to FEMA upon request.

B. Building Permits:

The department will require the following be submitted with all building permit applications and permits in the SFHA.

1. Building Permit Application (excluding EZ Permits)

The following should be submitted to The Department Licenses & Inspections - Permit Services: 1401 John F. Kennedy Boulevard - Concourse Level, Philadelphia, PA 19102

- a. A completed, and signed **Flood Protection Form - GENERAL (FP-G)**
- b. For existing buildings, a completed and signed **Flood Protection Form – EXISTING BUILDINGS (FP-EX)**
- c. Mechanical, electric and plumbing permits
 - 1) Include scope of work and costs on building permit applications, when an existing building in the SFHA.
 - 2) For any new work, see the **Flood Protection Form – GENERAL (FP-G)** to find requirements specific to these permit types.
- d. Site Plan Requirements:
 - 1) 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.
 - 2) Plans must be of professional quality and drawn to scale (e.g. 1/4" = 1' – 0")
 - 3) Minimum sheet size is 18" x 24".
 - 4) Elevations must use NGVD 29 as per FIRM panels and match elevations on Elevation Certificates
 - 5) The following information must be included on the plan (applicable codes):
 - i. Special Flood Hazard Zones (A, AE, Floodway, X, 0.2%) from effective FIRM's and/or FIS as well as mean high tide
 - ii. Construction type, specifically foundation type and loading
 - iii. Anchoring to withstand the hydrostatic and hydrodynamic loads, and not become buoyant
 - iv. Plans for every floor from the DFE (BFE+18") and below, including all enclosed spaces (basements, crawlspaces, etc.)
 - v. Finished Floor Elevations for each level notes above
 - vi. All the rooms must be labeled as to their use. (e.g. bedroom, kitchen, office, incidental storage, etc.)
 - vii. Any accessory structures (sheds, dumpsters, benches, transformer pads, etc.)
 - viii. Material types for areas wet floodproofed below the Design Flood Elevation (BFE+18")

- ix. Location and type of mechanical, fuel systems, water supply, elevators, electrical, and plumbing including elevations and flood design criteria
- x. Details and specifications for any wet or dry floodproofing measures
- xi. Existing and proposed contours
- xii. Any additional documents per the Flood Protection Form – GENERAL (FP-G) (No Rise Certificate, H&H Study, Geotechnical Report, Flood Emergency Operations Plan, etc.)

6) A completed pre-construction Elevation Certificate using the current edition published by FEMA. To be submitted with a building permit application.

2. EZ Building Permits

a. EZ Permits - The following should be submitted to The Department Licenses & Inspections - Permit Services: 1401 John F. Kennedy Boulevard - Concourse Level, Philadelphia, PA 19102. These types **cannot** be processed at a Licenses + Inspection District Offices.

- 1) Pools and Spas & Retaining Walls
 - i. Not eligible for EZ Permits, when in a SFHA, must submit a Building Permit
 - ii. Plan Drawings, by design professional, must be submitted for plan review
 - iii. A completed, and signed **Flood Protection Form – GENERAL (FP-G)**
- 2) Porch Enclosures & Ductwork and Warm-Air Appliances
 - i. Plans are not required
 - ii. Elevation Certificate, may be required depending on date of original construction
 - iii. A completed, and signed **Flood Protection Form – EZ PERMITS (FP-EZ)**
- 3) Interior Alterations, including interior demolition
 - i. Plans are not required
 - ii. Scope of work and detailed cost estimate or signed contract, must be submitted
 - iii. A completed, and signed **Flood Protection Form – EZ PERMITS (FP-EZ)**
 - iv. Elevation Certificate, may be required

b. All other EZ Permits (excluding ones above)

- 1) Should be submitted to The Department Licenses & Inspections – District Offices and/or Permit Services: 1401 John F. Kennedy Boulevard - Concourse Level, Philadelphia, PA 19102

c. For all EZ Permits

- 1) Multiple Permits - One or multiple EZ Permits could constitute “substantial improvement” meaning any reconstruction, rehabilitation, addition, or other improvement to a structure, where the cost of which equals or exceeds 50% of its pre-improvement market value, then the structure must meet the current floodplain requirements. The applicant must provide the combined value of all the proposed work to make a substantial improvement/damage determination, regardless of the number of permits issued. For several reasons, an applicant may wish to schedule anticipated improvements over a period of time and they may request separate permits for each phase. The department, at its discretion, will ensure that phased improvements do not circumvent the substantial improvement requirements.
- 2) Phased Improvements - The term “phased improvement” refers to a single improvement that is broken into parts. For many reasons, an applicant may wish to schedule anticipated improvements over a period of time, and they may request separate permits for each phase. The department, at its discretion, will ensure that phased improvements do not circumvent the substantial improvement requirements.

3. Building Permit Exceptions

a. Design Professional seal on **Flood Protection Form - GENERAL (FP-G)**. The following types of building permit applications require submittal of **Flood Protection Form - GENERAL (FP-G)**, but do not require completion by and seal of a design professional

- i. Fencing not located in the floodway
- ii. Enclosed structures accessory to a one- or two-family dwelling and not located in the floodway
- iii. Storage of materials not located in the floodway
- iv. Storage of licensed and road-ready vehicles/trailers not located in the floodway

b. Elevation or Dry Floodproofing Certificates. The following do not require the submittal of elevation certificates or dry floodproofing certificates:

- i. Temporary and/or permanent non-enclosed structures
- ii. Storage tanks

iii. Structures accessory to one- or two-family dwellings of 200 square feet or less in area

4. Building Refusals

- a. When any of the provisions found on the **Flood Protection Form - GENERAL (FP-G)** and/or the City of Philadelphia Codes/Regulations are not met, then the applicant will receive a refusal, in which they can fix the issue or appeal (see below).

5. Building Appeals

- a. The Applicant may, at its discretion, may appeal any of the Floodplain Codes/Regulations upon the receipt of a Building Permit Refusal. All appeals shall be considered by the Board of Building Standards.

6. Record Retention

- a. The Department shall retain all documentation collected concerning a review of a development in the SFHA, with the permit application records. Such records shall be available to FEMA upon request.

C. Inspections

The department will inspect all development in the SFHA.

1. New construction and/or substantially improved buildings the following documents are required during inspections:
 - i. A completed Elevation Certificate upon completion of the lowest floor (including basement, crawlspace or enclosed floor). The building Inspector will collect this form from the development site, prior to any “vertical” work.
 1. If you are not installing the slab prior to vertical work:
 - a. Mark foundation walls at future top of slab
 - b. Complete Elevation for structure under construction (photos must be included)
 - c. Attached letter of PA Design Professional Letterhead that you are proceeding without lowest floor installation
 - ii. A completed Elevation Certificate of the completed construction prior to the issuance of the Certificate of Occupancy. The building Inspector will collect this form from the development site, and it should be based off “as-built” conditions.
 1. Flood Damage Resistant Materials
 - a. Use in all spaces BFE+18” and below
 - b. See FEMA “Flood Damage Resistant Material Requirements”
 2. Flood Vents
 3. Machinery/Equipment
 4. Certificate must be completed by design professional once all fixtures, mechanicals, equipment, and exterior work is completed.
 - iii. For commercial and/or mixed-use structures being dry floodproofed, a completed Floodproofing Certificate, using the current edition by FEMA. This is to be completed once the development is constructed, prior to the issuance of the Certificate of Occupancy.
2. Dry Floodproofed Structures:
 - i. Flood Emergency Operations Plan
 1. Must meet specification of plan (i.e.: labor, time, etc.)
 - ii. Building engineer or operator on site for inspection
 - iii. Design Professional of dry floodproofing on site for inspection
3. Development in SFHA’s without floodway and placement of fill
 - i. Final LOMR or LOMR-F
4. Special Inspections required for
 - i. Fill
 - ii. Anchors

Substantial Improvement and/or Damage Determinations:

For an existing building(s) in the Special Flood Hazard Area (SFHA) being renovated/alterd and/or an addition being constructed, the **Flood Protection Form – EXISTING BUILDINGS (FP-EX)** must be completed.

To make a substantial improvement determination the Department shall compare the cost of the proposed improvement or repairs to the market value of the structure only using the information published by the Office of Property Assessment (OPA). When alterations, repairs or additions to an existing building are planned on an existing building located in the SFHA, the following guidance is given to ensure compliance with the flood protection provisions of the codes.

A. Market Value Determination

- 1) The Department will use the OPA to determine the Existing Market Value of a structure, by using that “Taxable Improvement” value and the “Exempt improvement” value for the year in which the application is made.
 - a. For multiple buildings on a single parcel the “Taxable Improvement” value and the “Exempt Improvement” value for the entire site will produce an overall value. Then the “Improvement Area (SqFt)” divided from the overall value will produce a value per square foot. For the structure being improved multiple that square foot value by the area of the structure being improved to get an existing market value for the structure.
 - b. For condominiums, add all units “Taxable Improvement” values and the “Exempt improvement” values to get existing market value of the structure.

B. Estimated cost of construction is reported to be below 30% of the market value of the structure:

In cases where the building permit application indicates that the total estimated cost of construction is found to be less than 30% of the market value of the structure, the Department shall require:

- 1) That the applicant submits a copy of a detailed estimate from the contractor to ensure consistency with the value reported on the building permit application.
- 2) Assurance that the proposed construction does not lessen the existing structure’s ability to resist flood damage. This would include:
 - a. Converting uninhabited areas below the base flood elevation to inhabited space, such as converting garages and basements to living areas.
 - b. Relocating mechanical equipment from above the base flood elevation to below, such as adding or relocating an AC unit on grade next to a structure.
 - c. Sealing existing crawl space flood vents below the base flood elevation.

3) An Elevation Certificate can be submitted to document the continued compliance.

C. Estimated cost of construction is reported to exceed 30% of the market value of the structure:

In cases where the building permit application indicates that the total estimated cost of construction is found to be 30% or more of the market value of the structure, the Department will request documentation necessary to make the substantial improvement determination with a full accounting of the estimated cost of the entire project. Such documentation shall include a **Flood Protection Form – EXISTING BUILDINGS (FP-EX)**

D. Estimated cost of construction is determined to exceed 50% of the market value of the structure:

In cases where the estimated cost of the entire project exceeds 50% of the market value of the structure, the existing building **must be brought into compliance with the floodplain management requirements** for new buildings.

- 1) A completed, and signed **Flood Protection Form - GENERAL (FP-G)** must be submitted.

E. Documentation required to determine substantial improvement:

1. Applications for permits to perform work on existing buildings that are located in the SFHA where a substantial improvement determination is made, the applicant must include the following:
 - Current photographs of the exterior (front, rear, sides).
 - If the building has been damaged, include photographs of the interior and exterior; provide pre-damage photos of the exterior, if available.
 - Detailed description of the proposed improvement (rehabilitation, remodeling, addition, etc.) or repairs.
 - Cost estimates of the full proposed improvement project or the cost estimates to repair the damaged building to its before-damage condition (see item #2).
 - Elevation certificate or elevation survey of the existing structure if alleged to be outside the flood area.
 - Applicant may submit a market value appraisal (see item #3) prepared by a licensed professional appraiser or the Department will use the market value of the building.
2. The cost estimate must include:
 - a. Materials and labor, including the estimated value of donated or discounted materials and owner or volunteer labor
 - b. Site preparation related to the improvement or repair (e.g., foundation excavation or filling in basements)

- c. Demolition and construction debris disposal
 - d. Labor and other costs associated with demolishing, moving, or altering building components to accommodate improvements, additions, and making repairs
 - e. Costs associated with complying with any other regulations or code requirement that is triggered by the work, including costs to comply with the requirements of the Americans with Disabilities Act (ADA)
 - f. Costs associated with elevating a structure when the proposed elevation is lower than the BFE
 - g. Construction management and supervision
 - h. Contractor's overhead and profit
 - i. Sales taxes on materials
 - j. Structural elements and exterior finishes, including:
 - i. Foundations (e.g., spread or continuous foundation footings, perimeter walls, chain walls, pilings, columns, posts, etc.)
 - ii. Monolithic or other types of concrete slabs
 - iii. Bearing walls, tie beams, trusses
 - iv. Joists, beams, subflooring, framing, ceilings n Interior non-bearing walls
 - v. Exterior finishes (e.g., brick, stucco, siding, painting, and trim)
 - vi. Windows and exterior doors
 - vii. Roofing, gutters, and downspouts
 - viii. Hardware
 - ix. Attached decks and porches
 - k. Interior finish elements, including:
 - i. Floor finishes (e.g., hardwood, ceramic, vinyl, linoleum, stone, and wall-to-wall carpet over subflooring)
 - ii. Bathroom tiling and fixtures
 - iii. Wall finishes (e.g., drywall, paint, stucco, plaster, paneling, and marble)
 - iv. Built-in cabinets (e.g., kitchen, utility, entertainment, storage, and bathroom)
 - v. Interior doors
 - vi. Interior finish carpentry
 - vii. Built-in bookcases and furniture
 - viii. Hardware
 - ix. Insulation
 - l. Utility and service equipment, including:
 - i. Heating, ventilation, and air conditioning (HVAC) equipment
 - ii. Plumbing fixtures and piping n Electrical wiring, outlets, and switches
 - iii. Light fixtures and ceiling fans
 - iv. Security systems
 - v. Built-in appliances
 - vi. Central vacuum systems
 - vii. Water filtration, conditioning, and recirculation systems
- 3. Excluded Costs.** Items that can be excluded from the estimated cost of the entire project are those that are not directly associated with the building. The following list characterizes the types of costs that may be excluded from the estimated costs:
- a. Clean-up and trash removal
 - b. Costs to temporarily stabilize a building so that it is safe to enter to evaluate required repairs
 - c. Costs to obtain or prepare plans and specifications
 - d. Land survey costs
 - e. Permit fees and inspection fees
 - f. Carpeting installed over finished flooring such as wood or tiling
 - g. Outside improvements, including landscaping, irrigation, sidewalks, driveways, fences, yard lights, swimming pools, pool enclosures, and detached accessory structures (e.g., garages, sheds, and gazebos)
 - h. Costs required for the minimum necessary work to correct existing violations of health, safety, and sanitary codes
 - i. Plug-in appliances such as washing machines, dryers, and stoves
- 4.** To challenge the Office of Property Assessment (OPA) Value, you may provide a Professional Appraisal of the property. It must be prepared by a professional appraiser according to standard practices of the profession are the most accurate and reliable method for determining market value. Professional

appraisers should be qualified to appraise the type of property (e.g., residential, commercial, industrial) and should be licensed in the State of Pennsylvania. Appraisal reports should identify intended users, including the property owner, who can then submit it as part of a permit application. In addition, the appraisal should be recent enough to reasonably reflect current market value as of the date of the permit application. When used to determine market value for damaged buildings, the appraisal must reflect the pre-damage condition. The “market approach” for determining market value works best if there are adequate market data and recent sales of comparable properties in the vicinity. Note that using the “income capitalization approach” is not acceptable because it is based on how the property is used, and not the value of structure alone. 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.

- a. The Applicant may, at its discretion, may appeal the Market Value of the OPA. All appeals shall be considered by the Board of Building Standards.

F. Additions

An addition is an improvement that increase the square footage of a structure. These include horizontal and vertical additions. See **Flood Protection Form – EXISTING BUILDINGS (FP-EX)** for complete regulations for additions.

G. Multiple Permits

The Department issues separate mechanical, electrical, plumbing, and building permits. Therefore, the applicant must provide the combined value of all the proposed work to make a substantial improvement/damage determination, regardless of the number of permits issued.

H. Phased Improvements

The term “phased improvement” refers to a single improvement that is broken into parts. For many reasons, an applicant may wish to schedule anticipated improvements over a period of time, and they may request separate permits for each phase. The department, at its discretion, will ensure that phased improvements do not circumvent the substantial improvement requirements.

I. Amended Permits

Any amendments to an approved non-substantial improvement development located in the SFHA, must submit detailed cost estimates for all changes in development, per the amended permit. The department, at its discretion, will ensure that amended permits do not circumvent the substantial improvement requirements. It may request “as-built” cost estimates to confirm non-substantial improvements.

J. Record Retention

The Department shall retain all documentation collected (including copies of market value figures published by OPA at the time of application) concerning a review for substantial improvement declaration, whether such declaration is made or not, with the permit application records. Such records shall be available to FEMA upon request.

K. Appeals

Appeals of substantial improvement determinations or market value shall be considered by the Board of Building Standards.

L. Inspections

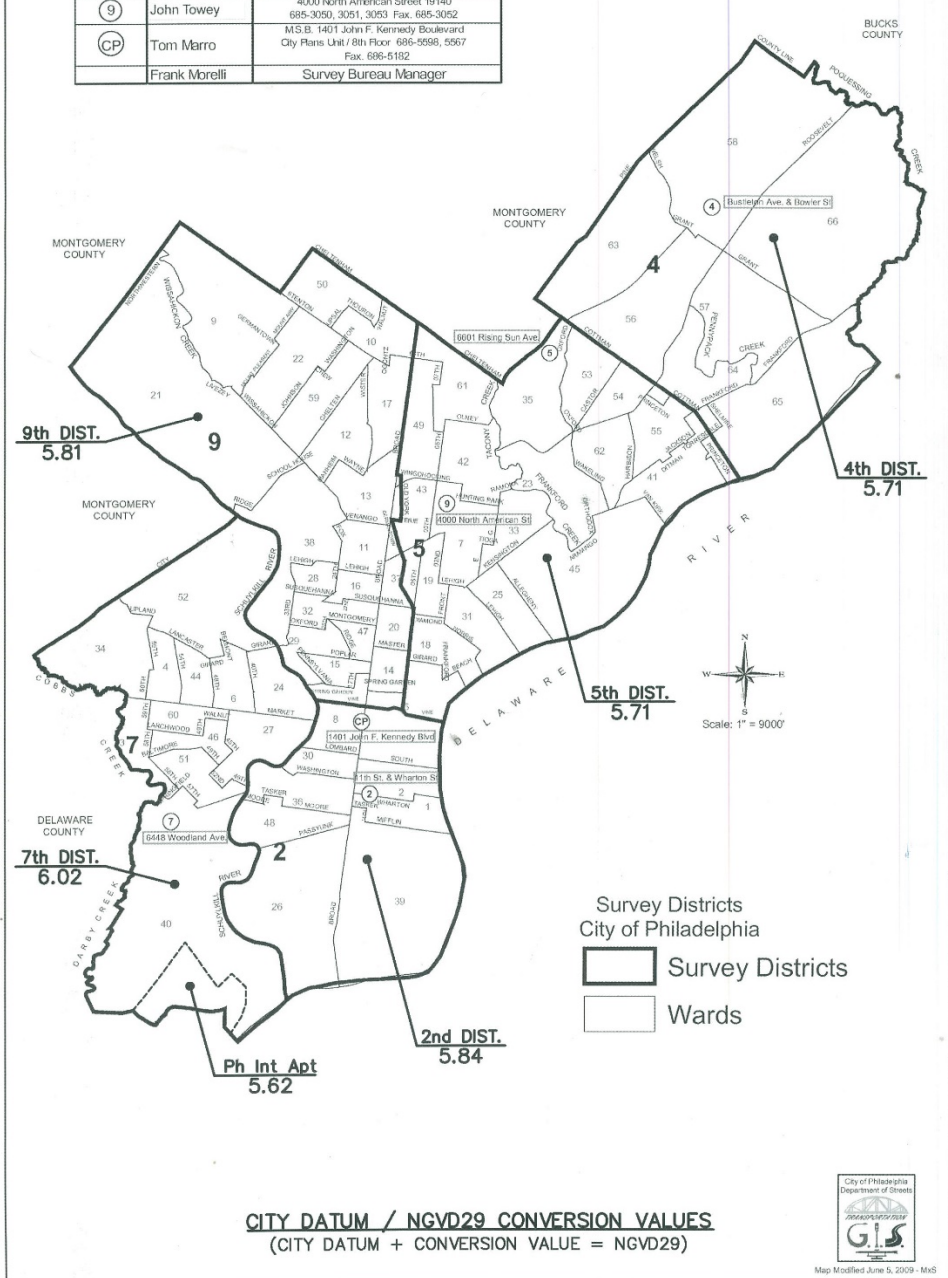
The department will inspect all development in the SFHA.

END OF BULLETIN



APPENDIX A - SAMPLE
City Datum to NGVD 29 Conversion Table
(Subtract conversion factor below from NGVD 29 elevation for City Datum elevation)

District	Surveyor	Office
2	Chris Petrowsky	S.W. Corner of 11th Street & Wharton Street 19147 2nd floor 685-1865 Fax: 685-1851
4	Mike LaBrum	Bustleton Avenue & Bowler Street 19115 685-0350, 0351 Fax: 685-0354
5	Frank Mc Ananey	6501 Rising Sun Avenue 19111 685-0585, 0596 Fax: 685-0561
7	Karl Kriegh	6448 Woodland Avenue 19142 685-2668, 2669 Fax: 685-2661
9	John Towey	4000 North American Street 19140 685-3050, 3051, 3053 Fax: 685-3052
CP	Tom Marro	M.S.B. 1401 John F. Kennedy Boulevard City Plans Unit / 8th Floor 685-5566, 5567 Fax: 685-5182
	Frank Morelli	Survey Bureau Manager



CITY DATUM / NGVD29 CONVERSION VALUES
 (CITY DATUM + CONVERSION VALUE = NGVD29)

