

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
ISSUED BY		ISSUE DATE August 24, 2017
NAME(S): Josh Lippert, CFM		REVISION DATE October 19, 2018
TITLE: Floodplain Manager, Department of Licenses and Inspections		PAGE 1 OF 18

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)** (Appendix A) to be submitted with zoning applications, a **Flood Protection Form – EXISTING BUILDINGS (FP-EX)** (Appendix B) to be submitted with renovation/additions to existing buildings, and a **Flood Protection Form – GENERAL – (FP-G)** (Appendix C) 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:

1. Upon application for the building permit.
2. Upon completion of the lowest floor (including basement, crawlspace or enclosed floor), prior to further vertical construction.
3. 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

Forms

- **Flood Protection Acknowledgement Form – ZONING (FP-Z)** (Appendix A)
 - 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, and Appendix G) associated with a development site located in the Special Flood Hazard Area (SFHA).
- **Flood Protection Form – EXISTING BUILDINGS (FP-EX)** (Appendix B)
 - For an existing building(s) in the Special Flood Hazard Area (SFHA) being renovated/altered 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)** (Appendix C)
 - 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)** (Appendix D)
 - 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 – KEY TERMS** (Appendix E)
 - Definitions for terms found in the above forms.

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 F) 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 as well as structures with: 9 or more stories and at least 5 dwelling units as well as 4-8 stories and at least 5 dwelling units.

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 at or above the BFE or, if below the BFE, designed to resist flood loads and prevent water from entering or accumulating within the components	Designed and/or located to prevent water from entering or accumulating within the components; can be within a dry floodproofed area	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

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.

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
- Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary of the Interior to qualify as a registered historic district; 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)** (Appendix A)
- 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 topography
 - iii. Building footprints (including accessory structures, transformer pads, etc.)
 - iv. Property boundaries

2. Zoning Refusals

- a. The following are Zoning refusals that can be issued for developments in the SFHA:
 - 1) Prohibited Uses and/or storage/production
 - 2) Floodway Development, without required reports
 - 3) Alteration or relocation of a watercourse without other State/federal permits
- 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.

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)** (Appendix C)
- b. For existing buildings, a completed and signed **Flood Protection Form – EXISTING BUILDINGS (FP-EX)** (Appendix B)
- 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)** (Appendix C) to find requirements specific to these permit types. See Section E7 on (FP-G).
- 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
 - 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. For earth work, 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 Office.
 - 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)** (Appendix C)
 - 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)** (Appendix D)
 - 3) Interior Alterations
 - 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)** (Appendix D)
 - 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)** (Appendix C). The following types of building permit applications require submittal of **Flood Protection Form - GENERAL (FP-G)** (Appendix C), 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)** (Appendix C) 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. For new construction and/or substantially improved buildings the following documents are required during inspections:

- a. 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.
- b. 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.
- c. 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.

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)** (Appendix B).

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)** (Appendix C) 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.
- F. Additions**

An addition is an improvement that increase the square footage of a structure. These include horizontal and vertical additions. Floodplain development standards for new construction apply to an addition that is considered to be a substantial improvement to a structure. See **Flood Protection Form – EXISTING BUILDINGS (FP-EX)** (Appendix B) 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 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

Flood Protection Acknowledgement Form – ZONING (FP-Z)



Department of Licenses & Inspections

Development Services Division
Municipal Services Building - Concourse Level
1401 John F. Kennedy Boulevard
Philadelphia, Pennsylvania 19102

FLOOD PROTECTION ACKNOWLEDGMENT FORM – ZONING (FP-Z)

2018 Edition
Expires January 1, 2019
SUBMIT WITH ZONING PERMIT APPLICATION

FLOOD PROTECTION ACKNOWLEDGEMENT FORM - ZONING (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 Codes, ASCE 24, and Appendix G) associated with a development site located in the Special Flood Hazard Area (SFHA). The Flood Protection Acknowledgement Form – ZONING (FP-Z) is to be completed by the development applicant, to acknowledge all applicable floodplain regulations in 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) prior to submitting for a zoning permit. Where you see "Proceed to" see additional requirements on:

- Flood Protection Form – GENERAL (FP-G)
- Flood Protection Form – EXISTING BUILDINGS (FP-EX)

The above form(s) will be required when submitting for building permits, if they apply to your development.

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 and/or AE will be considered in the 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.

FLOOD HAZARD INFORMATION – confirm that development is in the SFHA	
1. Flood Risk Zone (proposed development that touches any of these Zones) – select all that apply	
<input type="checkbox"/> FEMA Mapped SFHA - A Zone – Complete Form <input type="checkbox"/> FEMA Mapped SFHA - AE Zone – Complete Form	<input type="checkbox"/> FEMA Mapped – AE/Floodway – Complete Form <input type="checkbox"/> FEMA Mapped 0.02% or X - Proceed to section H , development not regulated for floodplain codes/regulations, must Attach Site Plan illustrating development in Zone X
2. Attach a Site Plan illustrating the SFHA on your development site	

Site Plan Requirements:

- Plans must be signed/sealed by a PA registered design professional
- Plans must be of professional quality and drawn to scale (e.g. 1/4" = 1' – 0")
- Minimum sheet size is 18" x 24".
- **Elevations must use NGVD 29 as per FIRM panels**
 - The following information must be included on the plan:
 - 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)
 - Existing topography
 - Building footprints (including accessory structures)
 - Property boundaries

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

For Submissions: The Philadelphia Department of Licenses and Inspections is located at:

1401 John F. Kennedy Boulevard - Concourse Level
Philadelphia, PA 19102

Counter Hours: Monday – Friday, 8:00am – 3:30pm (*closes at 12:00pm/noon last Wednesday of every month)

APPENDIX B - SAMPLE

Flood Protection Form – EXISTING BUILDINGS (FP-EX)



Department of Licenses & Inspections

Development Services Division
Municipal Services Building - Concourse Level
1401 John F. Kennedy Boulevard
Philadelphia, Pennsylvania 19102

FLOOD PROTECTION FORM – EXISTING BUILDINGS (FP-EX)

2018 Edition
Expires January 1, 2019
SUBMIT WITH BUILDING PERMIT APPLICATION

FLOOD PROTECTION FORM – EXISTING BUILDINGS (FP-EX)

The form is 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 (Philadelphia Zoning Code, IRC 2015, IBC 2018, Administrative Codes, ASCE 24, and Appendix G) apply. The **Flood Protection Form – EXISTING BUILDINGS (FP-EX)** is to be completed by the Owner, Agent, and/or Design Professional when an existing building in the Special Flood Hazard Area (SFHA). If Zoning is required for the project, then **Flood Protection Acknowledgement Form – ZONING (FP-Z)**, must be completed. Where you see Proceed to: **Flood Protection Form – GENERAL (FP-G)**, complete that form in conjunction with this form **(FP-EX)**.

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

The Philadelphia Department of Licenses and Inspections is located at:
1401 John F. Kennedy Boulevard -Concourse Level
Philadelphia, PA 19102

Counter Hours: Monday – Friday, 8:00am – 3:30pm (*closes at 12:00pm/noon last Wednesday of every month)

FLOOD HAZARD INFORMATION – confirm that existing building is in the SFHA			
1. Flood Risk Zone (existing building and/or addition that touches any of these Zones) – select all that apply			
<input type="checkbox"/> FEMA Mapped SFHA - A Zone <input type="checkbox"/> FEMA Mapped SFHA - AE Zone	<input type="checkbox"/> FEMA Mapped – AE/Floodway <input type="checkbox"/> FEMA Mapped 0.02% or X - Proceed to section C , development not regulated for floodplain codes/regulations - Attach a FIRMette, if the building is outside the SFHA https://msc.fema.gov/portal/home		
A. PROJECT INFORMATION			
1. Address of proposed work			
2. Owner of property			
3. Owner address	4. Phone #		
5. Agent of Owner	6. Company		
7. Agent Address	8. Phone		
B. EXISTING BUILDING INFORMATION			
1. Year Constructed	<input type="checkbox"/> 1978 or before	<input type="checkbox"/> 1979 or after	<input type="checkbox"/> Unknown
2. Elevation Certificate	<input type="checkbox"/> Yes - Attach to Application	<input type="checkbox"/> No	<input type="checkbox"/> N/A
3. Scope of work over \$25,000	<input type="checkbox"/> Yes - Design Professional Required	<input type="checkbox"/> No	<input type="checkbox"/> N/A
4. Existing Building Value: "Taxable Improvement" value + "Exempt Improvement" value (https://property.phila.gov/)	\$		<input type="checkbox"/> No
5. Is B3 is "No"? AND Is B4 over \$100,000?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
6. If B5 is "Yes," and constructed before 1978	<input type="checkbox"/> Proceed to section C , development not regulated for floodplain codes/regulations as it is not a substantial improvement		<input type="checkbox"/> N/A
7. If B5 is "Yes," and constructed after 1979	<input type="checkbox"/> Proceed to section C , work shall not be allowed to make the building non-compliant with any aspect of the building that was required for compliance		<input type="checkbox"/> N/A
8. If B3 is "Yes," then - Detailed Cost Estimate or Signed Contract is required	<input type="checkbox"/> Yes - Attach to Application , see instructions for details		<input type="checkbox"/> No
9. Value of work (from B8 attachment)	\$		
10. To challenge, OPA value in B4 - Certified Appraisal (for existing structure/building only) - Attach to Application	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A

APPENDIX C - SAMPLE Flood Protection Form – GENERAL (FP-G)



Department of Licenses & Inspections

Development Services Division
Municipal Services Building - Concourse Level
1401 John F. Kennedy Boulevard
Philadelphia, Pennsylvania 19102

FLOOD PROTECTION FORM (FP-G)

2018 Edition
Expires January 1, 2019
SUBMIT WITH BUILDING PERMIT APPLICATION

FLOOD PROTECTION FORM – GENERAL (FP-G)

The form is 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). The Flood Protection Form – General (FP-G) is to be completed by the design professional 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, were submitted, are consistent with the statements.

The Flood Protection Acknowledgement Form – ZONING (FP-Z), should be attached if zoning was required, and for an existing building the Flood Protection Form – EXISTING BUILDING (FP-EX), must be completed and attached. For full floodplain codes/regulations visit the Floodplain Management webpage at <http://www.phila.gov/li/Pages/FloodplainManagement.aspx> for more information.

The Philadelphia Department of Licenses and Inspections is located at:

1401 John F. Kennedy Boulevard
Concourse Level

Philadelphia, PA 19102 Counter

Hours: Monday – Friday, 8:00am – 3:30pm (*closes at 12:00pm/noon last Wednesday of every month)

For building permit plan, 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")
- Minimum sheet size is 18" x 24".
- **Elevations must use NGVD 29 as per FIRM panels and match elevations on Elevation Certificates**
 - The following information must be included on the plan (applicable codes):
 - Special Flood Hazard Zones (A, AE, Floodway, X, 0.2%) from effective FIRM's and/or FIS
 - Construction type, specifically foundation type and loading
 - Anchoring to withstand the hydrostatic and hydrodynamic loads, and not become buoyant
 - Plans for every floor from the DFE (BFE+18") and below, including all enclosed spaces (basements, crawlspaces, etc.)
 - Finished Floor Elevations for each level noted above
 - All the rooms must be labeled as to their use. (e.g. bedroom, kitchen, office, incidental storage, etc.)
 - Any accessory structures (sheds, dumpsters, benches, transformer pads, etc.)
 - Material types for areas wet floodproofed below the Design Flood Elevation (BFE+18")
 - Location and type of mechanical, fuel systems, water supply, elevators, electrical, and plumbing including elevations and flood design criteria
 - Details and specifications for flood any wet or dry floodproofing measures
 - For earth work, existing and proposed contours
- Any additional documents per Section K (Elevation Certificate, Floodproofing Certificate, No Rise Certificate, H&H Study, Geotechnical Report, Flood Emergency Operations Plan)

APPENDIX D – SAMPLE Flood Protection Form – EZ PERMITS (FP-EZ)



Department of Licenses & Inspections

Development Services Division
Municipal Services Building - Concourse Level
1401 John F. Kennedy Boulevard
Philadelphia, Pennsylvania 19102

FLOOD PROTECTION FORM – EZ PERMITS (FP-EZ)

2018 Edition
Expires January 1, 2019

FLOOD PROTECTION FORM – EZ PERMITS (FP-EZ)

The Flood Protection Form – EZ PERMITS (FP-EZ) is to be completed by the applicant and/or owner of the property, to certify the information required on this form are correct and complete to the best of their knowledge.

A. EZ PERMITS		
ONE FAMILY DWELLING		
1. Masonry Facade	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
2. Decks	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
3. Interior Alterations	<input type="checkbox"/> Yes, Proceed to Section B	
4. Pools and Spas	<input type="checkbox"/> Yes, Proceed to Section C	
ONE AND TWO FAMILY DWELLINGS		
5. Porch Enclosures	<input type="checkbox"/> Yes, Proceed to Section D	
6. Porch Floor Replacement	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
7. Standard Plumbing	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
8. Solar PV System	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
9. Fuel Gas for Appliances	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
ALL OCCUPANCIES		
10. Exterior Wall Covering	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
11. Interior Demolition	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
12. Re-Roofing	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
13. Security Gates and Grills	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
14. Window and Door Replacement	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
15. Ductwork & Warm-Air Appliances	<input type="checkbox"/> Yes, Proceed to Section E	
16. Sprinkler Relocation	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
17. Retaining Wall	<input type="checkbox"/> Yes, Proceed to Section F	
18. Limited Commercial Alterations & Repairs	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
19. Kitchen Fire Suppression System	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
20. Sign	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
21. Relocation of Registers/Diffusers	<input type="checkbox"/> Yes	<input type="checkbox"/> N/A
NOTE: MULTIPLE PERMITS: For floodplain regulations purposes, 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 of its pre-improvement market value, then the structure must meet the current floodplain requirements. The applicant must provide 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 require separate permits for each phase. The department, at its discretion, will ensure that phased improvements do not circumvent the substantial improvement requirements.		
B. INTERIOR ALTERATIONS - Additional documents are required.		

APPENDIX E - SAMPLE Flood Protection – KEY TERMS



Department of Licenses & Inspections

Development Services Division
Municipal Services Building - Concourse Level
1401 John F. Kennedy Boulevard
Philadelphia, Pennsylvania 19102

FLOOD PROTECTION – KEY TERMS

2018 Edition
Expires January 1, 2019

KEY TERMS

Base Flood Elevation (BFE) - elevation of flooding, having 1% chance of being equaled or exceeded in a given year

Basement - that portion of a structure having its lowest floor below ground level on all sides.

Design Flood Elevation (DFE) - elevation of the design flood, relative to the datum specified on the community's flood hazard map

In Philadelphia the DFE is the BFE + 18", unless a higher standard applies

Dry Floodproofing - floodproofing method used to render a structure envelope substantially impermeable to the entrance of floodwaters

Enclosure - confined area below DFE, formed by walls on all sides of the enclosed space

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.

Existing Structure - any structure for which the start of construction commenced before the effective date of the first floodplain ordinance, or standard adopted by the authority having jurisdiction

Fill - material such as soil, gravel, or crushed stone that is placed in an area to increase ground elevations

Flood-Damage Resistant Material - any construction material capable of withstanding direct and prolonged contact with floodwaters, without sustaining any damage that requires more than cosmetic repair

Flood Hazard Area - area subject to flooding during the design flood

Flood Hazard Map - map delineating flood hazard areas adopted by the authority having jurisdiction

Flood Hazard Study - study that serves as the technical basis for a flood hazard map

Flood Insurance Rate Map (FIRM) - official map of a community on which the Federal Insurance and Mitigation Administration (FEMA) has delineated both special flood hazard areas and the risk premium zones applicable to the community

Floodplain - any land area, including watercourse, susceptible to partial or complete inundation by water from any source

Floodway - channel and that portion of the floodplain reserved to convey the base flood without cumulatively increasing the water surface elevation more than a designated height

Highest Adjacent Grade - highest elevation of the natural or regraded ground surface, or structural fill, at the location of a structure

Historic Structure - any structure that meets one of the following criteria: (1) listed individually in the National Register of Historic Places; (2) certified by the Secretary of the Interior as meeting the requirements for individual listing in the National Register; (3) certified or preliminary determination by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; (4) individually listed on a state inventory of historic places, in stated with historic preservation programs that have been approved by the Secretary of the Interior; or (5) individually listed on a local inventory of historic places in communities with historic programs certified by an approved state program or by the Secretary of the Interior

NGVD - North American Vertical Datum

Nonresidential - any building or structure or portion thereof that is not classified in residential

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.

Residential - (1) buildings and structures and portions thereof where people live or that are used for sleeping purposes on a transient or non-transient basis; (2) residential structures, including but not limited to one- and two-family dwellings, townhouses, condominiums, multifamily dwellings, apartments, congregate residencies, boarding houses, lodging houses, rooming houses, hotels, motels, apartment buildings, convents, monasteries, dormitories, fraternity houses, sorority houses, vacation time-share properties; and (3) institutional facilities where people are cared for or live on a 24-hours basis in a supervised environment, including but not limited to board and care facilities, assisted living facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug centers, convalescent facilities, hospitals, nursing homes, mental hospitals, detoxification facilities, prisons, jails, reformatories, detention centers, correctional centers, and prerelease center.

Special Flood Hazard Area (SFHA) - land in the floodplain subject to a 1% or greater chance of flooding in an given year; area delineated on the Flood Insurance Rate Map (FIRM) as Zone A, AE, and Floodway

Structure - any building or other structure, including gas and liquid storage tanks

Substantial Improvement - any reconstruction, rehabilitation, addition, or other improvement to a structure, the cost of which equals or exceeds 50% of its pre-improvement market value, or equals or exceeds a smaller percentage established by the authority having jurisdiction

Wet Floodproofing - floodproofing method that relies on the use of flood-damage resistant materials and construction techniques to minimize flood damages to area below the DFE or a structure internally allowed to flood

APPENDIX F - **SAMPLE**

City Datum to NGVD 29 Conversion Table

(Subtract conversion factor below from NGVD 29 elevation for City Datum elevation)

