

<p style="text-align: center;">DEPARTMENT OF LICENSES AND INSPECTIONS</p> <p style="text-align: center;">CODE BULLETIN</p> <p style="text-align: right;">No. B-1701</p>	<p style="text-align: center;">CODE OF GENERAL ORDINANCES OF THE CITY OF PHILADELPHIA</p> <hr/> <p style="text-align: center;">TITLE 4 — BUILDING CONSTRUCTION AND OCCUPANCY CODE</p> <p style="text-align: center;">TITLE 14- ZONING AND PLANNING</p>
<p>SUBJECT OF BULLETIN:</p> <p style="text-align: center;">SUBSTANTIAL IMPROVEMENT (INCLUDING ADDITIONS) OF STRUCTURES LOCATED IN SPECIAL FLOOD HAZARD AREAS</p>	<p>REFERENCE CODE SECTION(S):</p> <p style="text-align: center;">B1612.1 R105.3.1.1 A-802.2.1.3 14-704(4)</p>
<p style="text-align: center;">ISSUED BY</p>	<p>ISSUE DATE</p> <p style="text-align: center;">March 1, 2017</p>
<p>NAME(S): Michael E. Fink</p>	<p>REVISION DATE</p>
<p>TITLE: Chief Code Official, Department of Licenses and Inspections</p>	<p style="text-align: center;">PAGE 1 OF 8</p>

PURPOSE:

The purpose of this Code Bulletin is to establish a process for assessing building permit applications related to alterations, additions and/or repairs of structures within the Special Flood Hazard Area (SFHA), located in the floodway or the floodplain and impacted by the base flood. "Base Flood" is also referred to as "100-Year Flood" or "One Percent Annual Chance Flood." Such information is found in the Flood Insurance Study (FIS) and accompanying Flood Insurance Rate Map (FIRM) issued by the Federal Emergency Management Agency (FEMA) or the most recent revision thereof.

DISCUSSION:

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 flooding. 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.

The potential for flooding is a safety risk to buildings that is addressed in our building and zoning codes. Like protection against fire, the Department is responsible for enforcing code provisions that reduce building safety risks.

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.

In Philadelphia, approximately 1% of the parcels within the city and 8% of the total acreage of the city are located in flood hazard areas. Many of these parcels contain buildings erected prior to the enactment of current flood protection code provisions. Such buildings may remain without compliance with such code provisions, as building codes are not retro-active. These existing structures are commonly referred

to as “pre-FIRM structures” for which the “start of construction” commenced before the effective date of the Flood Insurance Rate Map (FIRM).

Application of current building code standards apply when any existing structure undergoes an alteration. In the case of structures located in the Special Flood Hazard Area, floodplain development code provisions for new construction apply when the existing structure undergoes a “substantial improvement.” At that point, the codes require that the structure be elevated above the base flood or, in the case of non-residential buildings, flood-proofed to a level above the base flood.

APPLICABLE TERMS AND EXCEPTIONS:

Floodplain Development Standards

The Philadelphia Code includes special restrictions and regulations which apply to Special Flood Hazard Areas, more fully defined by the Flood Insurance Study and Flood Insurance Rate Maps of the U.S. Department of Homeland Security Federal Emergency Management Agency (FEMA). Relative provisions are found in the Administrative Code, Chapter 16 and Appendix G of the adopted International Building Code and the Zoning Code. Combined, these provisions make up the floodplain development standards for the City of Philadelphia, which is determined by FEMA to meet the NFIP.

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.

- 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.

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 Horizontal Additions

When a horizontal addition that increases the square footage of a structure is found to be a substantial improvement (i.e. the cost exceeds 50% of the value of the structure), the addition must be elevated or flood-proofed in compliance with current standards. However, in non-coastal floodplains, like Philadelphia, the existing building itself is not required to be brought into compliance if:

- (1) no substantial improvements are made to the existing structure and
- (2) the common wall of the existing structure is retained (except for a doorway).

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.

DIRECTION:

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 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. 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 the contract for the work or 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.
 - c. Sealing existing crawl space vents below the base flood elevation.

B. 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 Information*" form completed and signed by the responsible design professional, along with a copy of the contracts for all work.

Where the project is ultimately determined not to be a substantial improvement of the existing structure, item #2 of Section A shall apply.

C. 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. The applicant is free to submit the documentation detailed in Section D in support of a position that the determination of substantial improvement is incorrect.

D. Documentation required to challenge the Department's determination of substantial improvement:

1. Applications for permits to perform work on existing buildings that are located in the SFHA where a substantial improvement determination is challenged by 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 all labor and materials. If the work will be done by a contractor, the contractor's overhead and profit must be included. If the work will be done by the owner or volunteers, market rates must be used to estimate the cost of materials and the value of labor.
3. A market value appraisal of the building is to be prepared by a professional appraiser according to standard practices of the profession. The Department will review the appraisal to determine that it accurately describes the building and does not include the value of the land, accessory buildings, and landscaping.
4. 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

E. Additions

An addition is an improvement that increase the square footage of a structure. These include horizontal additions added to the front, side or rear of a structure and vertical additions added on top of a structure. Floodplain development standards for new construction apply to an addition that is considered to be a substantial improvement to a structure.

Horizontal additions that are determined to be a substantial improvement of a structure shall comply with the requirements for new construction. Such applications shall require review and approval of the Philadelphia City Planning Commission staff and submittal of a pre-construction Elevation Certificate as published by FEMA. See the “Exception for Horizontal Additions” section above concerning the impact of the horizontal addition on the existing structure.

Vertical additions shall be included in the estimated cost of all improvements to the existing structure for analysis of a substantial improvement determination.

F. 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.

G. Appeals

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

APPENDIX A
“Flood Protection Information” Form



CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS

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

**FLOOD PROTECTION
INFORMATION**

FOR BUILDING PERMIT APPLICATION
To be completed by the design professional responsible for the
project and submitted with the building permit application for
any property located in a Special Flood Hazard area.

ADDRESS: _____ DATE: _____

TYPE OF CONSTRUCTION PROJECT:

☐ New Construction ☐ Vertical Addition ☐ Horizontal Addition ☐ Alteration

APPLICATION BASED UPON: ☐ IBC and Appendix G ☐ IRC ☐ IEBC

FIRM PANEL #: _____ EFFECTIVE DATE OF FIRM: _____

Attach copy of FIRMette (FIRMette can be found at <https://msc.fema.gov/portal>)

PROJECT PROPOSES THE FOLLOWING (check all that apply):

- ☐ Residential Building(s)
- ☐ Non-Residential Building(s) – a commercial or non-habitation building or a mixed-use building that does not qualify as a fully residential building (i.e. businesses, churches, schools, garages, recreational buildings, mercantile buildings, industrial buildings, warehouses, nursing homes, bed and breakfasts and hotels and motels)
- ☐ Earth Disturbance/Placement of Fill ☐ Alteration of Watercourse ☐ Floodway Encroachment
- ☐ Temporary Structures ☐ Storage Tank(s) ☐ Accessory Structure(s) (200 sq. ft. or less)

GENERAL SPECIAL FLOOD HAZARD INFORMATION SUBMITTED/CONFIRMED

1. Pre-Construction Elevation Certificate submitted (current FEMA Form 81-31) ☐ Yes ☐ No
Complete Sections A, B, C (“construction Drawings”) and D (also Sections E and F if in Zone A)
2. DFE established as 18 inches above BFE per Zoning Code, Section 14-704(4) ☐ Yes ☐ No
3. DFE consistent with the site’s location on the applicable FIRM (IBC Section 1612.5) ☐ Yes ☐ No
4. Mechanical and electrical systems elevated to or above the DFE ☐ Yes ☐ No
5. Water and sewer designed to allow minimum infiltration from flood waters, or prevent it entirely ☐ Yes ☐ No
6. Materials below the DFE are resistant to prolonged water exposure ☐ Yes ☐ No
7. Ramps and stairways designed to resist flood-related loads and (in the event design flood conditions are met) will break away without causing damage to the main structure ☐ Yes ☐ No ☐ N/A
8. All areas below the DFE are designed for use consistent with Zoning Code, Section 14-704(4) ☐ Yes ☐ No
9. Waterfront setback of 50 ft. maintained per zoning Code, Section 14-704(5) ☐ Yes ☐ No

RESIDENTIAL ☐ N/A

Number of dwelling units in each building: _____ Number of buildings: _____

1. Crawlspace equipped with flood openings 1 square inch per 1 square foot of area ☐ Yes ☐ No ☐ N/A
2. Areas of crawlspace below adjacent grade creating a basement ☐ Yes ☐ No ☐ N/A
3. Details submitted for enclosures below the BFE (IBC Section 1612.5) ☐ Yes ☐ No ☐ N/A
(Include Engineered Opening Certifications or manufacturer’s documentation)
4. Fill is properly stabilized, sloped, and compacted
5. Breakaway walls utilized reflect design sufficient to resist 10 psf of force, but not to exceed 20 psf
6. Garages evaluated against requirements of ASCE 24 Section 9.3 ☐ Yes ☐ No ☐ N/A
7. Chimneys or fireplaces evaluated against requirements of ASCE 24 Section 9.4
8. Swimming pools evaluated against the requirements of ASCE 24 Section 9.5 ☐ Yes ☐ No ☐ N/A

APPENDIX A
“Flood Protection Information” Form (continued)

FLOOD PROTECTION INFORMATION – BUILDING PERMIT APPLICATION

PAGE 2 OF 2

NON-RESIDENTIAL ☐ N/A

1. Details submitted for enclosures below the BFE (IBC Section 1612.5) ☐ Yes ☐ No ☐ N/A
(Include Engineered Opening Certifications or manufacturer's documentation); or
2. Documentation of dry floodproofing (IBC Section 1612.5 and ASCE 24) ☐ Yes ☐ No ☐ N/A

EARTH DISTURBANCE, PLACEMENT OF FILL, ALTERATION OF WATERCOURSE AND/OR FLOODWAY ENCROACHMENT ☐ N/A

1. Documentation that floodway encroachments will not increase flood levels ☐ Yes ☐ No ☐ N/A
(IBC Appendix G, Section G103.5)
2. Notifications provided to adjacent communities, State, FEMA for watercourse alterations ☐ Yes ☐ No ☐ N/A
(IBC Appendix G, Section G105.7)
3. Engineering analysis submitted for capacity of altered watercourse ☐ Yes ☐ No ☐ N/A
(IBC Appendix G, Section G103.6.1)
4. Hydrologic and Hydraulic analysis submitted ☐ Yes ☐ No
5. Appropriate geotechnical (soils) information submitted ☐ Yes ☐ No

TEMPORARY STRUCTURES, ACCESSORY STRUCTURES, STORAGE TANKS, FENCES AND RETAINING WALLS ☐ N/A

1. Temporary and/or accessory structures properly anchored ☐ Yes ☐ No ☐ N/A
(IBC Appendix G, Sections G801 and G901)
2. Solid fences located in the floodway (IBC Appendix G, Section G801.2) ☐ Yes ☐ No
3. Engineering analysis of retaining walls submitted (IBC Appendix G, Section G801.4) ☐ Yes ☐ No ☐ N/A
4. Underground tanks anchored to prevent flotation, collapse or lateral movement ☐ Yes ☐ No ☐ N/A
(IBC Appendix G, Section G701.2)
5. Above ground tanks elevated to or above DFE (IBC Appendix G, Section G701.2) ☐ Yes ☐ No ☐ N/A

ALTERATION ☐ N/A ESTIMATED COST OF CONSTRUCTION \$ _____

1. The building has undergone substantial damage from a fire, flood, etc. ☐ Yes ☐ No ☐ N/A
2. The building is undergoing substantial improvement, including but not limited to vertical additions, decks connected directly to the structure, general alterations, etc. ☐ Yes ☐ No ☐ N/A
3. The work proposed is in excess of 50% of the market value of the structure prior to any damage or improvement
☐ Yes ☐ No ☐ N/A

ALTERATION (FOR INTERNAL USE ONLY)

Market Value of Structure \$ _____ % of Market Value for Construction Costs _____ %

The work proposed is in excess of 50% of the market value of the structure ☐ Yes ☐ No

APPLY SEAL HERE

DESIGN PROFESSIONAL:

I hereby affirm that all statements are correct and complete to the best of my knowledge and that the construction plans, where submitted, are consistent with these statements.

NAME: _____

ADDRESS: _____

SIGNATURE: _____