Philadelphia Floodplains –
Regulations and Processes for Development

Josh Lippert, CFM
Floodplain Manager
1% chance flood
0.2% chance flood
Quick Stats

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

4,706 BUILDINGS IN THE FLOODPLAIN

Repetitive Loss Properties

NFIP Policies by Zip Code


Mapping

Active Permits

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

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

Flood-prone areas are managed by restricting development in the floodway, but allowing development in the floodway fringe.

Rural areas produce flood causing runoff at a slower rate than do urban areas.

The ground water table is connected to rivers but experiences a delayed response to flood waters. Ground water rises in a flood event.
BACKGROUND

National Flood Insurance Program
National Flood Insurance Program (NFIP)

- Created by the National Flood Insurance Act of 1968

- Participation is **voluntary**
  - Adopt and enforce regulations
  - Eligible for flood insurance

- **Benefits** of participation:
  - Flood insurance
  - Grants and loans
  - Disaster assistance
  - Federally-backed mortgages
Buildings principally over water cannot get insurance through NFIP.
NFIP Role: Federal and State

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

- **State**
  - State program oversight
  - Establish development/building standards
  - Provide technical assistance to local communities/agencies
  - Evaluate and document floodplain management activities
Local Officials and Floodplain Administrators

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

- Reviewing the last 5 years of building permits issued in the floodplains as well as a tour to identify non-permitted development in the floodplains
- Over **100 possible violations were discovered and additional documentation is required for full compliance with the regulations**
- Violations may lead to the City being placed on **Probation**, FEMA will report back shortly
- Probation may result in a $50 surcharge to policy holders (approx. 4,200 policy holders)
Ordinance Non-Compliance

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

• **Serious ramifications:**
  – Suspension of NFIP eligibility
  – No mortgages or home equity loans in floodplain areas
  – No renewals of existing flood insurance policies
  – Loss of most forms of Disaster Assistance
  – No federal grants or loans
  – Loss of subsidized insurance for Pre-FIRM structures
FLOOD HAZARD INFORMATION
FEMA Flood Map Service Center

Link to map

FIRMette: Download and associated to application

FIRM Panel #
FIRM Date

Insert your address here
Zones regulated by the City of Philadelphia

Cross section

Zone AE/floodway

Zone AE

0.2%
Zones regulated by the City of Philadelphia

0.2%

Coastal Flood Hazard Zone AE
(Delaware River + Schuylkill River below Passyunk Ave)
- Are subject to flooding by the base or 1% annual chance flood, and waves less than 3 feet

Shoreline
Regulatory FIRMette

Link to map

Property address

To regulatory FIRM Panels

Effective FIRM Panels

Select FIRM panel based on this number and view
Regulatory FIRMette

Make a FIRMette

PDF of FIRMette
CODES + REGULATIONS
Codes + Regulations

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

Preface: Bill No. 11045

Chapter 14: Zoning and Planning

### 14.01. Purpose.

### 14.02. Citation and Title.

### 14.03. Authority.

1. Authority:
2. Construction of Authority.

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**DEPARTMENT OF LICENSING AND INSPECTIONS**

**CODE BULLETIN**

No. 1-1002

**DEVELOPMENT IN SPECIAL FLOOD HAZARD AREAS**

**PERMIT DOCUMENT REQUIREMENTS**

**PURPOSE:**

This approval of this Code Bulletin is to establish the required documentation to be prepared for approval of permits to develop in Special Flood Hazard Areas (SFHA).

**DISCUSSION:**

This Department of Licenses and Inspections enforces the National Flood Insurance Program flood zone criteria regulations, which require SFHAs to be identified and designated for flood zone regulations. In the event of a disaster, SFHAs are designated to identify flood prone areas and to establish requirements for development in these areas. The Code Bulletin establishes the requirements for permits to develop in SFHAs, including the need for a Certifcat of Occupancy for any development in flood prone areas (SFHAs).

**SCOPE:**

This Code Bulletin is to address specific recommendations made by FEMA in the 2018 CUV.

FEMA recommendations are the City of Philadelphia's voluntary flood zone provisions are consistent with the Federal Emergency Management Agency's floodplain management regulations. Generally, a CUV should include a discussion of the community's flood zone regulations and the requirements for permits and inspections.

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**IBC Appendix G - Flood-Resistant Construction**

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

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
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<tbody>
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<td>G101 Administration</td>
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<tr>
<td>G102 Applicability</td>
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<tr>
<td>G103 Powers and Duties</td>
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<tr>
<td>G104 Permits</td>
<td></td>
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<td>G105 Variances</td>
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<tr>
<td>G201 Definitions</td>
<td></td>
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<tr>
<td>G301 Subdivisions</td>
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<tr>
<td>G401 Site Improvement</td>
<td></td>
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</table>

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**FEMA**

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General

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

• Pre-FIRM 1978 and before
• Post-FIRM 1979 and after
  – 1979-2012 12” Freeboard (BFE+12” for Design Flood Elevation (DFE))
  – 2012-present 18” Freeboard
Zoning

- Prohibited in SFHA – Hospitals, group living uses housing the elderly or disabled persons with limited mobility, detention or correctional facilities, new or substantially improved manufactured homes
- Floodway – special regulations
- Residential vs. non-residential
- Fill
Zoning – not in code but in building standards

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

- **NON-RESIDENTIAL** – not mentioned above

- **NON-RESIDENTIAL (required to have 24” freeboard)** - Healthcare facilities having surgery or emergency treatment facilities; Fire, rescue, ambulance, and police stations and emergency vehicle garages, designated emergency structures (hurricane, earthquake, etc.); Designed emergency preparedness, communication, and operation centers and other facilities required for emergency response; Power generating stations and other public utility facilities required in an emergency; Ancillary structures (communication towers, fuel storage tanks, cooling towers, electrical substation structures, fire water storage tanks or other structures housing or supporting; water, or other fire-suppression material or equipment); Aviation control towers, air traffic control center, and emergency aircraft hangars; Water storage facilities and pump structures required to maintain water pressure for fire suppression; Buildings and other structures having critical national defense functions *(ASCE 24: Table 1-1)*
CODES + REGULATIONS
Existing Structures – renovations/alterations
Substantial Improvements

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

1979 and after

- 1979 – 2012 then 12” freeboard
- 2013 - present then 18” freeboard

Figure 4-1. Make the SI/SD determination (overview)
Substantial Improvements
Market Value

• Market Value – based on Office of Public Property Assessments
  – Market Value minus Taxable Land = Existing Market Value (structure only)
  – You may challenge the Existing Market Value through a professional Market Value Appraisal of the building (see details before conducting)
Substantial Improvements Cost Estimate

- **Estimated Cost of Construction Value**
  - Materials and labor, including the estimated value of donated or discounted materials and owner or volunteer labor
  - Site preparation related to the improvement or repair (e.g., foundation excavation or filling in basements)
  - Demolition and construction debris disposal
  - Labor and other costs associated with demolishing, moving, or altering building components to accommodate improvements, additions, and making repairs
  - 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)
  - Costs associated with elevating a structure when the proposed elevation is lower than the BFE
  - Construction management and supervision
  - Contractor’s overhead and profit
  - Sales taxes on materials
Substantial Improvements Cost Estimate

– Structural elements and exterior finishes, including:
  • Foundations (e.g., spread or continuous foundation footings, perimeter walls, chainwalls, pilings, columns, posts, etc.)
  • Monolithic or other types of concrete slabs
  • Bearing walls, tie beams, trusses
  • Joists, beams, subflooring, framing, ceilings
  • Interior non-bearing walls
  • Exterior finishes (e.g., brick, stucco, siding, painting, and trim)
  • Windows and exterior doors
  • Roofing, gutters, and downspouts
  • Hardware
  • Attached decks and porches
Substantial Improvements
Cost Estimate

– Interior finish elements, including:
  • Floor finishes (e.g., hardwood, ceramic, vinyl, linoleum, stone, and wall-to-wall carpet over subflooring)
  • Bathroom tiling and fixtures
  • Wall finishes (e.g., drywall, paint, stucco, plaster, paneling, and marble)
  • Built-in cabinets (e.g., kitchen, utility, entertainment, storage, and bathroom)
  • Interior doors
  • Interior finish carpentry
  • Built-in bookcases and furniture
  • Hardware
  • Insulation
Substantial Improvements Cost Estimate

— Utility and service equipment, including:

• Heating, ventilation, and air conditioning (HVAC) equipment
• Plumbing fixtures and piping
• Electrical wiring, outlets, and switches
• Light fixtures and ceiling fans
• Security systems
• Built-in appliances
• Central vacuum systems
• Water filtration, conditioning, and recirculation systems
CODES + REGULATIONS
Post-FIRM & and all other development
General Categories for All Development

- Design Information
  - Floodway
  - Residential
  - Non-Residential
  - Below-grade Parking
  - Historic
  - Accessory Structures
  - Utilities
  - Storage
  - Fill
  - Demolition
  - Seasonal/Temporary
Floodway

– No Rise Certificate
– Hydrologic and Hydraulic Study
– Other local, state and federal permits
A Zones

– Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.
Residential

– Lowest floor elevation (including basement, crawlspace, or enclosed floor) is 18” above BFE
– Enclosed areas below BFE + 18” (no areas below grade on all sides allowed)
  • If yes, then use only as parking, access, and incidental storage
  • Openings (see A8 and/or A9 on Elevation Certificate)
  • Flood resistant materials must be used

• Non-conversion clause on Certificate of Occupancy for space below BFE+18”
Residential – townhouse example

**DIAGRAM 7**

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

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

- **C2.a**
- **C2.b**
- **C2.g**
- **A8.b-c**

**GRADE**

NEXT HIGHER FLOOR

WALKOUT LEVEL (ENCLOSURE)

OPENINGS

- **Garage**
- **Storage room**
- **Garage**

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

- **Foyer**
- **All stairs open underneath**
Lowest floor elevation (including basement, crawlspace, or enclosed floor) is 18” above BFE or dry floodproofed up to 18” above BFE.

Enclosed areas below BFE + 18”
- If yes, then use only as parking, access, and incidental storage – can be wet floodproofed.
- Openings (see A8 and/or A9 on Elevation Certificate).
- Flood resistant materials must be used.

Dry floodproofing
- Floodproofing Certificate.
- Flood Emergency Operation Plan.
- Inspection and Maintenance Plan.
Multi-Family/Mixed-Use

- 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

<table>
<thead>
<tr>
<th>Description</th>
<th>Residential</th>
<th>Non-Residential</th>
<th>Mixed-Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Floodproofed enclosure below the BFE (in areas other than a basement)</td>
<td>Allowed for parking, storage, and building access</td>
<td>Allowed for parking, storage, and building access</td>
<td>Allowed for parking, storage, and building access</td>
</tr>
<tr>
<td>Below-grade areas (basements)</td>
<td>Prohibited</td>
<td>Allowed if dry floodproofed</td>
<td>Allowed for non-residential portions, if dry floodproofed</td>
</tr>
<tr>
<td>Below-ground parking</td>
<td>Prohibited</td>
<td>Allowed, if dry floodproofed</td>
<td>Allowed for non-residential portions, if dry floodproofed</td>
</tr>
<tr>
<td>Dry floodproofed areas below the BFE</td>
<td>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)</td>
<td>Allowed for all areas</td>
<td>Allowed for non-residential portions</td>
</tr>
<tr>
<td>Mechanical, Electrical, and Plumbing Systems</td>
<td>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</td>
<td>Designed and/or located to prevent water from entering or accumulating within the components; can be within a dry floodproofed area</td>
<td>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</td>
</tr>
</tbody>
</table>
Below-Grade Parking

– Only for non-residential structures
– Must be dry floodproofed
  • Floodproofing Certificate
  • Flood Emergency Operation Plan
  • Inspection and Maintenance Plan
Historic Designation

– Analysis that elevating and/or floodproofing would remove it from historic designation status
  • If yes, then variance is authorized
– However, mechanicals and flood resistant materials shall be used where historic status is not undermined
Accessory Structure

• All shall be anchored, withstand the hydrostatic & hydrodynamic loads as well as not become buoyant
• Fully enclosed structures must have flood openings and flood resistant materials
• HVAC + fuel systems must be at BFE + 18”
• Electrical below BFE + 18”, supplied by branch circuits and GFCI protection
• Retaining Walls- unless fill is placed, compacted and sloped to minimize shifting, slumping and erosion during the rise and fall of flood water.
Machinery/Equipment

- Mechanical
- Fuel Systems
- Electrical
- Water supply
- Conveyance
- Plumbing
- In general, BFE + 18” unless designed to submersible or dry floodproofed
Elevators

- Hydraulic vs. Traction
- For shafts that go below BFE + 18”
  - Float switch
Storage

• Goods and materials
• Less than 180 days
• Non-hazardous materials
Fill

- If less than 12”, in-place dry density is not less than 90% of the max. dry density at optimum moisture content determined in accordance with ASTM D 1557.
- Less than 180 days
- If over 12”, then GEOTECHNICAL REPORT (see Section 1803 of IBC)
Seasonal/Temporary

• Less than 180 consecutive days
• Structures shall be anchored, withstand the hydrostatic & hydrodynamic loads as well as not become buoyant
• Fully enclosed shall have flood openings
• For recreational vehicles, trailers, or general vehicles – licensed and road ready
CERTIFICATES

Elevation
Floodproofing
Elevation Certificate

- Link to EC
Elevation Certificate

• Official record that shows new buildings and substantial improvements in all identified Special Flood Hazard Areas (SFHAs) are properly elevated

• Required 3 times through process (new construction, substantial improvements, and additions):
  – Zoning Application
  – Building Under Construction (lowest floor installation)
  – Finished Construction – to receive a Certificate of Occupancy

• Common Mistakes:
  – Must fill out completely, and where an items does not apply input “N/A”
  – Datum should be NGVD 29, since Philadelphia floodplain maps follow that datum
  – Building Diagram #
  – Building Elevation Information (specifically machinery/equipment)
  – Comments section should be used to describe machinery/equipment
  – One for each row of townhouses (note: one for each resident may apply)
# Floodproofing Certificate

**Link to Certificate**

### Paperwork and Disclosure Notice

Public reporting burden for this data collection is estimated to average 2.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1500 E Street SW, Washington, DC 20572. NOT TO BE USED TO REPORT COMPLAINTS TO THIS ADDRESS.

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

### Privacy Act Statement

**Authority:** Title 44 CFR § 61.7 and 61.8.

**Principal Purpose(s):** The information is being collected for the primary purpose of estimating the risk of flood damage to buildings and for purposes of the Flood Insurance Program.

**Routine Uses:** The identity of the Individual(s) to whom this information is disclosed is used to determine eligibility for the flood insurance program.

**Disclosure:** The information provided will be used to determine eligibility for the flood insurance program. The information will be used to determine eligibility for the flood insurance program.

### Purpose of the Floodproofing Certificate

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

A floodproofed building is a building that has been designed and constructed to be watertight (substantially impermeable to floodwaters) below the BFE and with structural components having the capacity of resisting hydrostatic and hydrodynamic loads and effects of surges. Before a floodproofed building is designed, numerous planning considerations, including local zoning, building codes, flood risk, and the building's elevation, must be addressed to ensure that floodproofing will be a viable floodplain management measure.

The minimum NFIP requirement is to floodproof a building to the BFE. However, when it is rated for flood insurance one-foot above the floodproofed elevation. Therefore, a building has to be floodproofed to one foot above the NFIP to receive the same favorable flood insurance rates as a building elevated to the BFE.

Floodproofing Certificate

• Official record that show non-residential, new buildings and substantial improvements in all identified Special Flood Hazard Areas (SFHAs) are properly floodproofed

• A floodproofed building is a building that has been designed and constructed to be watertight (substantially impermeable to floodwaters) below the BFE and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy

• Note the “Floodproofed Certification” clause in Section III

• Other items:
  – Flood Emergency Operation Plan
  – Inspection and Maintenance Plan
  – Written Certification: all portions of the structure below the BFE that will render it watertight or substantially impermeable to the passage of water and must perform in accordance with Title 44 Code of Federal Regulations (44 CFR 60.3 (c)(3))
  – Photographs
RESOURCES
FEMA Technical Bulletins

Below-Grade Parking Requirements for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program

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

Openings in Foundation Walls and Walls of Enclosures

Wet Floodproofing Requirements for Structures Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program

Non-Residential Floodproofing — Requirements and Certification for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program

Substantial Improvement/Substantial Damage Desk Reference

Protecting Building Utility Systems From Flood Damage


FEMA P-348, Edition 2 / February 2017
Why Apply for a LOMC?

- Most Common Reasons:
  - Remove the mandatory flood insurance requirement
  - To adjust flood insurance rate information
  - To better understand the flood risk associated with a structure or property

- Other Reasons:
  - To support a floodplain development permit application
  - To understand the effects of proposed development in the floodplain
  - To reflect the effects of recent development in the floodplain
  - To determine whether the floodplain ordinance requirements apply
Letter of Map Amendment (LOMA)

- is an official amendment, by letter, to an effective National Flood Insurance Program (NFIP) map. A LOMA establishes a property's location in relation to the Special Flood Hazard Area (SFHA). LOMAs are usually issued because a property has been inadvertently mapped as being in the floodplain, but is actually on natural high ground above the base flood elevation.
Letter of Map Revision (LOMR-F)

- is FEMA's modification of the Special Flood Hazard Area (SFHA) shown on the Flood Insurance Rate Map (FIRM) based on the placement of fill outside the existing regulatory floodway.
is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective Base Flood Elevations (BFEs), or the Special Flood Hazard Area (SFHA). The letter does not revise an effective NFIP map, it indicates whether the project, if built as proposed, would be recognized by FEMA. FEMA charges a fee for processing a CLOMR to recover the costs associated with the review. Building permits cannot be issued based on a CLOMR, because a CLOMR does not change the NFIP map.

**Documentation for a CLOMR**

- Community concurrence
- Applicable forms within the MT-2 application
- Hydrologic and hydraulic data and modeling
- Topographic data
- Work maps
- Annotated FIRM panel(s) and FIS tables and/or profiles showing nature and extent of revised floodplain boundaries, floodway boundaries, and BFEs
- Public notice
- Property owner notification
- Processing fee
- ESA Compliance
Letter of Map Revision (LOMR)

- is FEMA's modification to an effective Flood Insurance Rate Map (FIRM), or Flood Boundary and Floodway Map (FBFM), or both. LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective Base Flood Elevations (BFEs), or the Special Flood Hazard Area (SFHA). The LOMR officially revises the Flood Insurance Rate Map (FIRM) or Flood Boundary and Floodway Map (FBFM), and sometimes the Flood Insurance Study (FIS) report, and when appropriate, includes a description of the modifications. The LOMR is generally accompanied by an annotated copy of the affected portions of the FIRM, FBFM, or FIS report.

Documentation for a LOMR

- Community concurrence
- Applicable forms within the MT-2 application
- Hydrologic and hydraulic data and modeling of completed development
- Topographic data
- Work maps
- Annotated FIRM panel(s) and FIS tables and/or profiles showing nature and extent of revised floodplain boundaries, floodway boundaries, and/or BFEs
- Public notice
- Property owner notification
- Processing fee
- If fill in floodway, “no-rise” analysis or CLOMR
Things to Consider

• Proforma for development projects
  – Insurance requirement if in mapped SFHA (with mortgage)
  – Increased cost of compliance

• Future sea level rise + severe storms
UPCOMING INITIATIVES
Upcoming Initiatives

• Revised Flood Protection Form
• Flood regulations Resource Guide
• Continued trainings
• Regulation and Code Updates
• Improved floodplain website
• Community Rating System
• Flood Risk Management Taskforce
THANK YOU

Josh Lippert, APA, ASLA, CFM
Floodplain Manager
For project inquiries/questions related to floodplain development:
Joshua.Lippert@phila.gov or 215-686-2423