Guide to Floodplain Development
Agenda

- Floodplain Guide
- Get a Zoning Permit
- Get a Building Permit
- Get Construction Inspections
- Policy Changes or Clarifications
Floodplain Guide – Where to find

Section 1: Flowcharts
Illustration of permitting steps required for:
- Alterations
- Floodway Encroachments
- Construction requiring a FEMA Map Change
- All other Construction in SFHA
- Federal and State Approvals Only

Section 2: Process Steps
Submission requirements for:
- Zoning Permit
- Building Permit
- Construction Inspections
- FEMA Community Letter of Acknowledgement or PA DEP Consistency Letter
Section 3: Supplemental Information
Additional submission requirements if your project includes or requires:

- An Engineering Analysis
- Fill to Elevate above regulatory BFE
- Watercourse Alteration

Appendix A: Resources
Tools to assist in determining level of impact of your project, including:

- Substantial Improvement
- FIRM Applicability
- Regulatory Floodway
- Waterfront Setback
- FEMA LOMC
- State approvals
Use the Table of Contents to navigate directly to a section or page.

Links provided within the flowcharts to navigate to relevant sections of the Guide

Click on hyperlinks within the text to navigate to relevant external resources
Get a Zoning Permit

When is a Zoning Permit required for floodplain development?

- Any work (development) or change in use that occurs within the Special Flood Hazard Areas (SFHA) within property lines.
  - DEVELOPMENT. Any man-made change to improved or unimproved real estate, including but not limited to, buildings or other structures, temporary structures, temporary or permanent storage of materials, mining, dredging, filling, grading, paving, excavations, operations and other land-disturbing activities.

- Standard exceptions under the Zoning Code, Chapter 3 of the Philadelphia Administrative Code, regulation or code Bulletins may not apply to floodplain development.
  - L&I does NOT require a Zoning Permit for grading or alteration constituting substantial improvement, unless required by other sections of the Code.
Get a Zoning Permit (cont.)

What is required for my submission?

- Site Plan - additional requirements for work in the floodplain may apply:
  - Floodplain boundaries, including floodways, SFHA designations BFE elevations and all datum info.
  - Lowest floor elevation for new construction and substantially improved (if known) structures.
  - Site topography (existing and proposed).
  - Waterfront Setback related “top-of-bank” delineation prepared by PA licensed surveyor
    - This will apply to all development is within 75 ft of a body of water

- Flood Protection Form – Zoning - captures basic information and is intended to bring awareness of additional requirements that will apply throughout development.

- Engineering Analysis implications
  - NOT required to be submitted with the zoning permit application but commitment on plans required
  - Designer must perform an analysis to determine effect on BFE
Get a Building Permit

When is a Building Permit required for floodplain development?

- Essentially applies to ANY “man-made” change to a site
- Per 2018 International Building Code (IBC) Appendix G, “development” is defined as:
  - DEVELOPMENT. Any man-made change to improved or unimproved real estate, including but not limited to, buildings or other structures, temporary structures, temporary or permanent storage of materials, mining, dredging, filling, grading, paving, excavations, operations and other land-disturbing activities.
- Standard exceptions under Chapter 3 of the Philadelphia Administrative Code, regulation or code Bulletins may not apply to floodplain development
  - For example, a project for less than 5,000 sqft. of earth disturbance is usually exempt from Permitting. BUT, If such earth disturbance is in a special flood hazard area, then a Permit IS required
What is required for my submission?

- Must comply with standard building permit application requirements and may require additional documentation specific to floodplain regulations, including:
  - Site Plan, including floodplain boundaries, topography, and elevations with clear datum information
  - Flood Protection Scoping Meeting Summary Form
  - Flood Protection Form – General or Existing Building
  - FEMA Elevation Certificate
    - See Section C1 of Elevation Certificate and checkbox for “Construction Drawings”
  - Floodproofing Certification for engineered flood vent openings
  - Engineering Analysis Report, signed and sealed by a Commonwealth PA Professional Engineer
  - Copies of all FEMA, US Federal Agency (usually US Army Corps of Engineers), and Commonwealth of PA (usually PA Dept. of Environmental Protection) approvals.
Get Construction Inspections

What documentation is required?

- Two construction milestones require the submission of a FEMA Elevation Certificate
  - Completion of the lowest floor (including basement)
    - See Section C1 of Elevation Certificate and checkbox for “Building Under Construction”
  - Prior to final inspection
    - See Section C1 of Elevation Certificate and checkbox for “Finished Construction”

- Floodproofing Certificate
  - Dry-floodproofing requires a FEMA Floodproofing Certificate for non-residential structures
  - Wet floodproofed areas require certification of engineered flood vent openings

- Final FEMA Letter of Map Change (i.e. LOMR-F or LOMR)
  - No CO or TCO will be issued until all required documents are provided.
### RESIDENTIAL VS NON-RESIDENTIAL

<table>
<thead>
<tr>
<th>Category</th>
<th>Effective until April 1 (FEMA Technical Bulletin 0)</th>
<th>Effective after April 1 (44 CFR )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>A building designated for habitation. Ancillary areas of residential buildings that serve only residents are residential ancillary areas.</td>
<td>A noncommercial building designed for habitation by one or more families or a mixed-use building that qualifies as a single-family, two-to-four family, or other residential building.</td>
</tr>
<tr>
<td>Other Residential</td>
<td>N/A</td>
<td>A residential building that is designed for use as a residential space for 5 or more families or a mixed-use building in which the total floor area devoted to non-residential uses is less than 25 percent of the total floor area within the building.</td>
</tr>
<tr>
<td>Non-Residential</td>
<td>A building that has a commercial or other nonresidential use.</td>
<td>A commercial or mixed-use building where the primary use is commercial or non-habitational</td>
</tr>
<tr>
<td>Mixed Use</td>
<td>A building that has both residential and commercial or other non-residential uses. The term does not include multi-family residential buildings that have ancillary areas but no non-residential uses</td>
<td>A building that has both residential and non-residential uses.</td>
</tr>
<tr>
<td>Ancillary</td>
<td>A common area such as a lobby, foyer, office used by building management, exercise space and meeting room.</td>
<td>N/A</td>
</tr>
</tbody>
</table>
What effect do the new FEMA 44 CFR Regulations have on a project?

- Previously, “ancillary areas” would be considered as part of the “Residential” use and therefore prohibited from using dry-floodproofing – they would be required to be elevated above BFE.
- New definitions remove the “ancillary area” definition and introduce a new term “Other Residential” building.
  - Any building where the total area of non-residential uses is less than 25% of the total building area is now considered an “Other Residential” building.
  - The definition for “Residential” now includes buildings classified as “Other Residential” buildings.
  - This effectively classifies any “Mixed-Use” building as an entirely “Residential” building if the non-residential use makes up less than 25% of total floor area.
    - A non-ancillary non-residential area of the building previously allowed to use dry-floodproofing measures would now be prohibiting from doing so if the structures is defined as an “Other Residential” building under the new definition.
Policy Changes or Clarifications (cont.)

ENGINEERING ANALYSIS REQUIREMENTS

- Engineering Analysis is required for the following situations:
  - Development within regulatory floodway – shown on the FEMA FIRM through hatching
  - Cumulative development within riverine flood hazard areas w/ no regulatory floodway
    - Very rare but is identified on the FIRM with a cross-section that has no floodway identified
  - Development in costal areas that affects dune like structures (i.e. seawalls, closed piers)
    - Delaware River is a coastal floodplain and any project that alters structures that define LiMWA lines required analysis
  - Watercourse alterations
  - As required by the ZBA or BBS
- Detailed information on submission requirements are contained within the Supplemental Information section of the Floodplain Management Guide
Policy Changes or Clarifications (cont.)

COASTAL FLOODPLAIN (i.e. NOT RIVERINE)

- Identified on FIRM through a LiMWA line and/or transects instead of cross sections
- Area seaward of LIMWA line and landward of any ‘V’ Zone is Coastal A Zone
- Area seaward of any ‘V’ Zone is Coastal High Hazard
- ASCE 24-14 regulate Coastal A Zones and Coastal High Hazard Zones effectively the same
  - This is an “above code” regulation that exists within any Community which adopts ASCE 24-14.
- In Philadelphia, most of the Costal A Zones occur along the Delaware River due to the LiMWA line
- Important Coastal Zone-specific regulations:
  - New construction is prohibited seaward of Mean High Tide based on NOAA tidal data
  - Structural fill is prohibited, and non-structural fill is limited to minor grading
  - PA DEP Waterway Obstructions and Encroachments Permit is required.
Policy Changes or Clarifications (cont.)

COASTAL FLOODPLAIN (i.e. NOT RIVERINE) (cont.)
Policy Changes or Clarifications (cont.)

FLOODPLAIN WITHOUT REGULATORY FLOODWAY

- Regulatory Floodway is highly regulated area that experience moving water during post-flood drainage
  - Only applicable to riverine flood hazards such as rivers and streams and are NOT tidal waters
- Development within a Regulatory Floodway requires Engineering Analysis to confirm “NO RISE”
- Development in a riverine floodplain with NO regulatory floodway is subject to modified requirements:
  - Provisions of the Zoning Code relating to a regulatory floodway do not apply.
  - PA DEP Waterway Obstructions and Encroachments Permit is required.
  - NO RISE analysis is changed to SOME RISE not to exceed 1.00 ft
    - This analysis is required to be based on cumulative development but, until such that the City amasses required records, L&I is only verifying development proposed under the applicatio
Policy Changes or Clarifications (cont.)

FLOODPLAIN WITHOUT REGULATORY FLOODWAY (cont.)

Image on left displays riverine with no floodway while image on right displays hatched floodway.
Policy Changes or Clarifications (cont.)

WATERFRONT SETBACK

- Established per Philadelphia Zoning Code Section 14-704(5) to protect drainage of bodies of water
- Development in the Waterfront Setback is subject to specific submission and code requirements:
  - A site plan identifying the limits of the 50’ zone is required with building and zoning permit applications.
  - Where development occurs within 75 feet of the Top-of-Bank, the Site Plan must be prepared by a Commonwealth of PA Professional Land Surveyor.
- The Zoning Code includes prohibits on structures, parking lots, and storage within the setback.
- If within a floodplain with no regulatory floodway (riverine or coastal), a PA DEP permit is required
- See Appendix A of the Guide for more information.
Policy Changes or Clarifications (cont.)

WATERFRONT SETBACK (cont.)
SUBSTANTIAL IMPROVEMENT (SI) AND SUBSTANTIAL DAMAGE (SD)

- Pre-Firm (constructed before June 15, 1979) buildings must be brought into full compliance with current floodplain requirements if the total cost of improvement exceeds 50% of the fair market value.
  - Market Value utilizes the OPA assessment, including taxable and exempt improvement values.
  - Alternate assessments may be submitted to the BBS for evaluation and decision.
- Certain costs and work are excluded from substantial improvement determination, including:
  - Work to buildings identified as ‘Historic’ intended to preserve the designated portions
  - Work required to correct a violation that will bring the building into compliance
  - See L&I Code Bulletin A-1702R for additional excluded costs
- SI includes all work occurring in a building under an open project or concurrent ‘open’ projects. L&I considers a project to ‘closed’ upon issuance of CO of a parent building permit.
Policy Changes or Clarifications (cont.)

COMMUNITY ACKNOWLEDGEMENT FORM (FEMA)

- Required for FEMA MT-1 and MT-2 Application approval
  - Community Official determines compliance with local floodplain management regulations and concurs project is “reasonably safe from flooding”
  - May be initiated through a Floodplain Scoping Meeting request or email to flooplainmanager@phila.gov

- Submission requirements to ensure Community Official review:
  - Building Permit Application materials necessary to conform compliance with floodplain regulations, which may include engineering analysis, elevations, and floodproofing specifications.
  - As-built drawings (LOMR and LOMR-F only)
  - Proof of notice to adjacent property owner, where required by 44 CFR
  - Evidence that existing structures within impacted area are reasonably safe
Policy Changes or Clarifications (cont.)

COMMUNITY ACKNOWLEDGEMENT FORM (FEMA) (cont.)

- Review FEMA MT-1 and MT-2 Applications requirements:
  - MT-1 Application Forms and Instructions
  - MT-2 Application Forms and Instructions
  - UPDATED without notice and most recent Application requirements will apply
FLOODPLAIN CONSISTENCY LETTER (PA DEP)

- Applicable when any PA DEP Permit Application occurs within a FEMA recognized floodplain, including:
  - Watercourse alterations and pier or wharf construction (i.e. “waterway encroachments”)  
  - City funded or sponsored development within the floodplain
- PA DEP local Floodplain Administrator to affirm project is consistent with local floodplain regulations
- A request for a consistency letter may be initiated through a floodplain scoping meeting.
  - A Preliminary Plan Review Application will be required to conduct analysis and confirm compliance.
- L&I Consistency Letter Submission requirements:
  - Zoning Permit must be issued to ensure compliance with local zoning code
  - Building Permit Application materials necessary to conform compliance with floodplain regulations including, but not limited to, engineering analysis, elevations, and floodproofing specifications.
    - May also require a FEMA LOMR be secured before Consistency Letter can be issued
FEMA Letter of Map Change (LOMC) required under several scenarios per 44 CFR:

○ Development within a regulatory floodway where engineering analysis shows rise in BFE greater than 0.00 FT

○ Cumulative development within a riverine floodplain without a floodway where engineering analysis shows rise in BFE greater than 1.00 FT

○ Corrected or new map data required to be incorporated into development project design

○ Hydrological and/or hydraulic changes to floodplain warranting revised analysis of floodplain
  ■ Large scale regrading or deforestation or changing the course of a river or channel

○ Any changes to FEMA FIRM recognized boundary conditions
  ■ Changing location of LiMWA line, large scale topography changes, etc.
Policy Changes or Clarifications (cont.)

FEMA LETTER OF MAP CHANGE (LOMC) EFFECT ON PERMITTING PROCESS (cont.)

● If LOMC indicates that development causes increase in flooding or flood damage potential
  ○ Typically results in BFE rise or expansion of boundary conditions thus encompassing more properties
  ○ All development within the areas affected by the LOMC must comply with the increased hazards
    ■ Building Permit Plan Review will enforce the increased hazards as outlined in the FEMA LOMC approvals

● Conditional LOMC FEMA Approvals (i.e. CLOMR or CLOMR-F) required prior to Building Permit submission
  ○ Pre-Scoping Meeting required to establish LOMC requirements/determinations

● FINAL LOMC FEMA Approvals (i.e. LOMR or LOMR-F) required prior to issuance of CO or Temporary CO

...
Policy Changes or Clarifications (cont.)

FEMA LETTER OF MAP CHANGE (LOMC) EFFECT ON PERMITTING PROCESS (cont.)

- **Zoning**: Obtain Zoning Permit in compliance with a-TD04(8)(a).
- **Building**:
  - Pre-scoping Meeting
  - Obtain Building on Site Permit
  - Construction
  - Construction and Issuance of CD

- **FEMA Approach**:
  - Complete CLA request for LOMR or LOMR-I
  - Obtain LOMR or LOMR-I
  - CLA request for LOMR or LOMR-I
  - Obtain LOMR or LOMR-I

- If conditions are made NOE, the initial conditions must be enforced during the building permit review per Federal law.
- If conditions are made BETTER, the BETTER conditions can be enforced during the building permit review, but the developer proceeds at their own risk.
- A final LOMR must be issued before either a TOC or CD will be issued.
Thank You