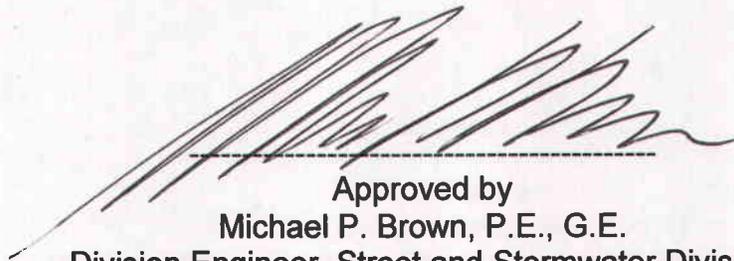


# FLOOD CLEARANCE PROCEDURE MANUAL

Prepared by  
Stormwater Group  
Bureau of Engineering  
Department of Public Works

September, 2014



Approved by  
Michael P. Brown, P.E., G.E.  
Division Engineer, Street and Stormwater Division



**CITY OF LOS ANGELES**



# TABLE OF CONTENTS

1. CHAPTER 1	OVERVIEW OF NATIONAL FLOOD INSURANCE PROGRAM
2. CHAPTER 2	DEFINITIONS AND TERMINOLOGY
3. CHAPTER 3	FUNCTIONS OF STORMWATER GROUP AND DISTRICT OFFICES
4. CHAPTER 4	FLOOD ZONE REVIEW PROCESS
5. CHAPTER 5	SUBSTANTIAL IMPROVEMENTS DETERMINATION
6. CHAPTER 6	FLOOD ZONE CLEARANCE REQUIREMENTS
7. CHAPTER 7	ELEVATION CERTIFICATE REVIEW
8. CHAPTER 8	SPECIAL CASES (under construction)
9. APPENDIX A	CITY ORDINANCE
10. APPENDIX B	TECHNICAL BULLETINS
11. APPENDIX C	CODES OF FEDERAL REGULATIONS- CHAPTER 44
12. APPENDIX D	MAP MAINTENANCE PROCEDURE
13. APPENDIX E	CORRESPONDENCE WITH FEMA

# **CHAPTER 1**

## **OVERVIEW OF NATIONAL FLOOD INSURANCE PROGRAM**

### **1. BACKGROUND**

In 1968, the U.S. Congress passed the National Flood Insurance Act which established the National Flood Insurance Program (NFIP). The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act on 1973, and later, the Flood Insurance Reform Act of 1994. The NFIP is a federal program administered by the Federal Emergency Management Agency (FEMA) with the purpose of reducing the future flood losses. The mechanism to accomplish this goal requires that communities participating in the program commit to the adoption and enforcement of minimum floodplain management standards. There is no Federal law that requires a community to join the Program and the community participation is voluntary. Homeowners in participating communities could purchase flood insurance at a reduced rate to protect themselves from flood losses.

### **2. CITY AS A PARTICIPATING COMMUNITY**

The City of Los Angeles adopted Ordinance 154405 for Flood Hazard Management Specific Plan on September 17, 1980 and officially joined the NFIP on December 2, 1980. Ordinance 163913 was adopted on July 26, 1988 to amend the initial Specific Plan for Flood Hazard Management. The latest regulation for the City's flood hazard management is the adoption of Ordinance 172081 on July 3, 1998. Since 1980, the City has established the development requirements in the flood hazard areas to address and to guide the communities in dealing with prevention of flood damages in special flood hazard areas. Through the assessment of the potential flood hazards and the current flood control system, the Ordinance sets the goals, objectives, and policies for community development.

The adoption of the City Ordinance 172081 establishes the legal basis to enforce specific flood requirements for development in flood-prone areas. The City Ordinance authorized the City Engineer to maintain the "LAFlood Hazard Map" that not only includes the Special Flood Hazard Area (SFHA) as shown on the flood insurance rate maps (FIRM) and subsequent updates by FEMA, but also other special flood hazard areas designated by the City Engineer. Ordinance 172081 mandates that all new and substantial improvements within the SFH shall comply with the City ordinance requirements to ensure that the permitted structure is reasonably safe from flood hazard.

The Community Rating System (CRS) was implemented in 1990 by FEMA as a program for recognizing and encouraging community floodplain management activities that exceed the minimum NFIP standards. The National Flood Insurance Reform Act of 1994 codified the CRS in the NFIP. Under the CRS, flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet the three goals of the CRS:

- 1) Reduce flood loss
- 2) Facilitate accurate insurance rating
- 3) Promote the awareness of flood insurance

Because the City has developed more stringent flood requirements than those required by FEMA, the City's Community Rating has been raised, which allows the homeowners to purchase the flood insurance at a substantial discount. The City's current CRS classification is 7, which provides for a 15% insurance premium reduction for all City residents within SFHA, and 5% discount for all other City residents.

### **3. Purpose of the Procedure Manual**

As a participant in the NFIP/CRS, the City has taken on a variety of activities according to the CRS Coordinator's Manual. One of the key activities is to review development within the SFHA and comply with the requirements as outlined in the City's Ordinance. The purpose of this procedure manual is to guide BOE staff and our customers through the process of obtaining Flood Clearance required for construction projects within the private properties that required development permits from the Department of Building and Safety. It also covers the Elevation Certificate approval that requires BOE sign off prior to the issuance of Certificates of Occupancy by Department of Building and Safety.

## CHAPTER 2 DEFINITIONS AND TERMINOLOGY

**Alluvial Fan Flooding:** Flooding occurring on the surface of an alluvial fan or similar landform which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport, and deposition; and unpredictable flowpaths. Alluvial fan flooding is depicted on a Flood Insurance Rate Map (FIRM) as Zone AO, with a flood depth and velocity

**Accessory structures,** also referred to as **appurtenant structures.** An accessory structure is a structure which is on the same parcel of property as a principal structure and the use of which is incidental to the use of the principal structure. For example a residential structure may have a detached garage or storage shed for garden tools as accessory structures. Other examples of accessory structures include gazebos, picnic pavilions, boathouses, small pole barns, storage sheds, and similar buildings.

**Base Flood:** the flood having a one percent chance of being equaled or exceeded in any given year. This is the regulatory standard also referred to as the "100-year flood." The base flood is the national standard used by the NFIP and all Federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development.

**Base Flood Depth (BFD)--**The depth shown on the Flood Insurance Rate Map for Zone AO that indicates the depth of water above highest adjacent grade resulting from a flood that has a one percent chance of equaling or exceeding that level in any given year.

**Base Flood Elevation (BFE):** the computed elevation to which floodwater is anticipated to rise during the base flood. BFEs are shown on Flood Insurance Rate Maps (FIRMs) and on the flood profiles.

**Basement:** Any area of the building, including any sunken room or sunken portion of a room, having its floor below ground level (subgrade) on all sides.

**Breakway Wall:** a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

**Coastal High Hazard Area:** an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. The coastal high hazard area is identified as Zone V on Flood Insurance Rate Maps (FIRMs). Special floodplain management requirements apply in V Zones including the requirement that all buildings be elevated on piles or columns.

**Community--**A political entity that has the authority to adopt and enforce floodplain ordinances for the area under its jurisdiction.

**Community Rating System (CRS)--**A program developed by FEMA to provide incentives for those communities in the Regular Program that have gone beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding.

**Conditional Letter of Map Revision (CLOMR):** 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.

**Crawlspace Foundation:** commonly used in some parts of the nation to elevate the lowest floors of residential buildings located in Special Flood Hazard Areas (SFHAs) above the Base Flood Elevation (BFE).

**Elevation Certificate:**an official record that shows new buildings and substantial improvements in all identified Special Flood Hazard Areas are properly elevated. This elevation information is needed to show compliance with the floodplain management requirements.

**Flood Insurance Rate Map (FIRM):** The official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community. DFIRM is the digital version of the FIRM.

**Flood Insurance Study FIS:** a compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. When a flood study is completed for the NFIP, the information and maps are assembled into an FIS. The FIS report contains detailed flood elevation data in flood profiles and data tables.

**Floodplain--**Any land area susceptible to being inundated by flood waters from any source.

**Flood Zone:** the area that will be inundated by the Base Flood.

**Floodproofing:** any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

**Floodproofing Certificate:** Documentation of certification by a registered professional engineer or architect that the design and methods of construction of a nonresidential building are in accordance with accepted practices for meeting the floodproofing requirements in the community's floodplain management.

**Floodway (FW):** A "Regulatory Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

**Letter of Map Amendment (LOMA):** is an official amendment, by letter, to an effective NFIP map. A LOMA establishes a property's location in relation to the Special Flood Hazard Area. 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 Change (LOMC):** a general term used to refer to several types of FEMA map change that can be accomplished by following FEMA guidance. They include Letter of Map Amendment (LOMA), Letter of Map Revision (LOMR), and Letter of Map Revision based on Fill (LOMR-F).

**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, or the Special Flood Hazard Area. The LOMR officially revises the Flood Insurance Rate Map or Flood Boundary and Floodway Map, and sometimes the Flood Insurance Study report, and when appropriate, includes a description of the modifications.

**Letter of Map RevisionBased on Fill (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.

**Lowest Floor:** is the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Sec. 60.3 of the Code of Federal Regulations.

**Post-FIRM Buildings:**are new construction and those built after the effective date of the first Flood Insurance Rate Map for a community.

**Pre-FIRM Buildings:** are those built before the effective date of the first Flood Insurance Rate Map (FIRM) for a community. This means they were built before detailed flood hazard data and flood elevations were provided to the community and usually before the community enacted comprehensive regulations on floodplain regulation.

**Repetitive Loss Property (RLP):** is the property for which two or more claims of more than \$1,000 have been paid by the NFIP within any 10-year period since 1978 (e.g. two or more claims during the periods 1978-1987, 1979-1988, etc.)

**Special Flood Hazard Area (SFHA):** is the land area covered by the floodwaters of the base flood. The SFHA is mapped on the FIRM and NFIP's floodplain management regulations must be enforced. The SFHA includes Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE, and V.

## **CHAPTER 3**

### **FUNCTIONS OF DISTRICT OFFICE AND STORM WATER GROUP**

#### **1. PURPOSE**

The purpose of this chapter is to outline the responsibilities of the District Offices (DOs) and the Stormwater Group (SWG) in handling NFIP/CRS activities. SWG handles various Community Rating System activities recommended by FEMA as described in NFIP/ CRS Coordinator's Manual. SWG will establish and update flood clearance procedures and requirements. SWG will handle flood clearance cases where BFE is not established and serves as consultant to District Offices when complicated flood clearance issues arise. This determination may change as DOs improve their ability in review more complicated cases.

It is the intent of this procedure manual to train and empower the DOs to handle all flood clearance review within Privately Financed Program. SWG will continue to provide support and handle the review of hydrologic/hydraulic analysis as well as the review of LOMR application packages.

#### **2. DISTRICT OFFICES**

All applications for flood clearance should be filed at the DOs. The DOs are responsible for:

1. Determining whether the improvement being applied for permit is in SFHA, or in RLP/High Risk areas. If the improvement is not in SFHA, high risk area, or RLP, the DOs will inform DBS and remove the clearance requirements.
2. Approve without requirement for new/substantial improvements in "Zone A-contained in channel". No fee will be charged for the clearance. Notify Phuoc Le or SWG supervisor to update and correct the data accuracy concerns.
3. If the improvement is in high risk area or in an RLP (including Mandeville Canyon), the DOs will conduct field investigation and review the proposed project to ensure the improvement does not worsen the existing flooding problem.
4. If the applicant request for non-substantial improvement determination, the DO will follow the guidelines set in Chapter 5, titled "Substantial Improvements Determination". If the improvement is non-substantial, the DO will sign off the project. Scan and save documents to the Web Tracking application per Attachment No. 3-1. If the improvement is substantial, the DO will proceed with flood clearance review per Chapter 4.
5. If the applicant submits a LOMC, condition/conditions set in the LOMC will be included in the requirements. DO to check <http://boemaps.eng.ci.la.ca.us/index01.cfm> for existing LOMA/LOMR.
6. Reviewing and setting requirements for substantial residential improvements in Zone A with BFE established by DFIRM. Additional fees will be collected.
7. For other cases, the District Offices can refer the applicant to the SWG for clearance until staff is trained.

8. Scanning and saving the signed-off project file to the Web Tracking Application per Attachment No.3-1.
9. Reviewing EC when construction is complete to determine whether the construction has complied with set requirements. See Chapter 7 for details.
10. Scan and save the completed EC to the Web Tracking Application per Attachment No. 3-1. Post EC on Map Note immediately.
11. Refer to Attachment No. 3-2 “Flood Clearance Procedure”.

### **3. STORMWATER GROUP**

The SWG is responsible for all other NFIP/CRS activities not indicated above; that includes reviewing and setting requirements for new/substantial improvements in zone A without BFE, alluvial fan and floodway areas, and other cases referred by DOs.

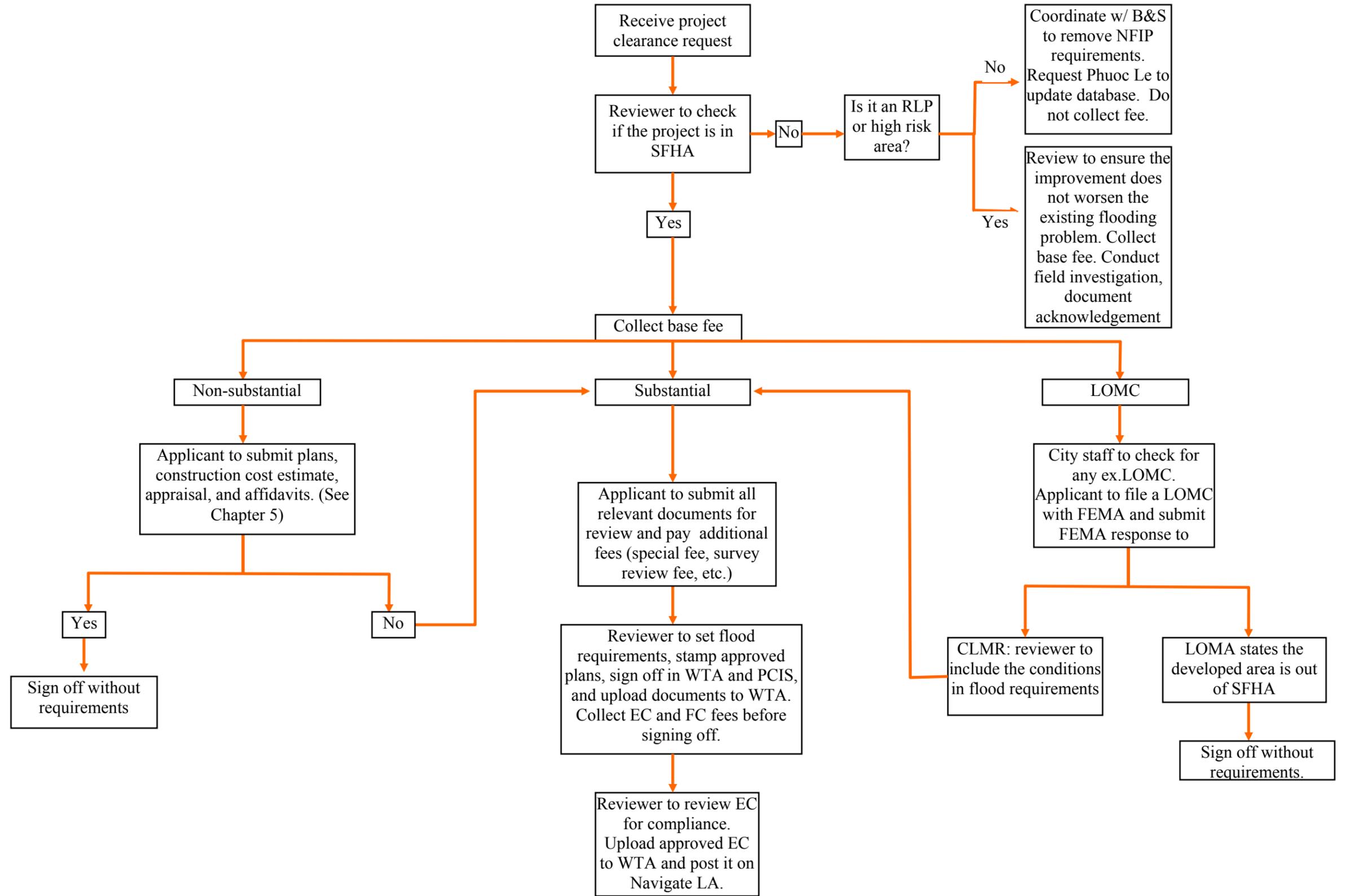
## **ATTACHMENT NO.3-1**

### **RECORD KEEPING FOR APPROVED FLOOD CLEARANCE PROJECTS**

The followings are guidelines for archiving essential documents related to flood clearance of a proposed construction:

1. Prior to a proposed project flood clearance, with or without requirements, the project engineer will create a folder for the project for supervisor review.
2. The following documents shall be organized in the folder for supervisor review.:
  - a. Building Permit, Clearance Summary Sheet, and payment receipt
  - b. For non substantial projects: documents to support the claim of non-substantial improvement such as construction estimate, improvement appraisal, affidavits of owner and contractor.
  - c. For Zone A containing in Channel: information to substantiate the findings such as flood map for Flood LA
  - d. For substantial improvement: Plans (topographic map with improvement layout, architectural/civil plans that shows elevations of the lowest level, etc.), Flood Proofing Certificate (FC), Covenant Agreement (CA), Maintenance and Operation Plans, Emergency Plans, and any documents from FEMA (CLOMR, LOMA, etc.)
  - e. A proposed condition for approval
3. After supervisor review and approval, the project engineer can proceed with sign-off. After sign-off, the project engineer is required to make a copy of the approval stamp, and a print of the PCIS screen capture.
4. In order to ensure adequate information is kept for FEMA auditing, the supervisor is required to review proper record keeping/documentation practice with each project engineer at the initial learning period of record keeping and documentation. The project engineer is requested to submit the folder to the supervisor for review of completeness for record keeping before uploading all documents to the Web Tracking Application. The recommended duration of this review period is 3 months, but it can be shortened or extended based on supervisor's determination.

FLOOD CLEARANCE FLOW CHART



WTA: Web Tracking Application.

## CHAPTER 4 FLOOD ZONE REVIEW PROCESS

### 1. PURPOSE:

This chapter will provide step-by-step process of flood zone review. It will guide employees on proper protocols to standardize process and reduce administrative error in reviewing the project. The chapter will also formulate procedures of record keeping.

### 2. PROCEDURE

- a) In order to start the review process, the applicant needs to contact the appropriate office for an appointment by:

-Calling:

- Central District Office: (213) 482-7030
- Harbor District Office: (310) 732-4677
- Valley District Office: (818) 374-5090
- West LA District Office: (310) 575-8644
- Stormwater Group: (213) 485-4820

-Or emailing NFIP website at [eng.nfip@lacity.org](mailto:eng.nfip@lacity.org)

-Or Walk-in

- b) Determine if flood zone clearance is required: At the first discussion with applicant, the reviewer is responsible for informing the applicant of:

-Any existing LOMA/LOMR in the City's Website:

<http://boemaps.eng.ci.la.ca.us/floodgis/>

-Flood zone classification of the site, or this is RLP/High Risk Areas. If the project is incorrectly shown for flood clearance review, the reviewer shall coordinate with B&S to correct its database and to remove the flood clearance requirement from the permit. See Chapter 3.

-Applicant's options in compliance with the City flood zone requirements. A copy of Attachment No. 4-1 shall be made available to the applicant.

-Applicable fees.

-Work order to be open if the project is determined to be a complicated case. Generally, a complicated case will require submittals of hydraulic and hydrology analysis, scouring depth analysis, hydrostatic and/or hydrodynamic analysis. Consult with supervisor and Susan Shu before open the work order.

- c) If the site is RLP or High Risk Areas identified by BOE staff. BOE staff is required to conduct field investigation to ensure the proposed improvement does not cause negative impact to current condition and recommend possible mitigation measures that the home owner can take to minimize the flood hazard. An acknowledgement of potential flood hazard maybe required from the applicant prior to clearance. Base fee is required. Refer to attachment 4-2 for a sample of acknowledgement. BOE staff is required to log the field investigation in the RLP database. The database is in MS Access format now and will be converting into

web application. In the interim, please contact Cindy Pham regarding RLP investigation database.

- d) If flood zone clearance is required, the reviewer shall request that the following documents be submitted before setting flood compliance conditions for the case (depending on the nature of the project):
  - Building and Safety Permit Application
  - Receipt of pertinent fee/fees
  - Two sets of plans
  - Construction cost estimate, property appraisal, affidavits (if applicant opts for non-substantial option). See Chapter 5 Substantial Improvement Determination for details.
  - Topography map of the site with proposed improvement if in zone AO.
  
- e) As soon as the reviewer receives information from the applicant, he/she shall record the project to the Web Tracking Application at: <http://boemaps.eng.ci.la.ca.us/fzc>. The reviewer is responsible for recording all available information and communication with the applicant to the Web Tracking Application.
  
- f) Through out the review process, the reviewer is responsible for updating the project record at the Web Tracking Application. Each meeting or phone call with applicant shall also be recorded and a hard copy of the meeting summary shall be provided to the applicant
  
- g) Before approving the project, the reviewer shall:
  - Make sure that all applicable fees have been paid
  - Review operation manual and Covenant Agreement/Waiver of Damage if applicable
  - Review operation manual and record covenant agreement /waiver damage
  - Verify that an electronic copy of the approved plans has been submitted. Save the file into Web Tracking Application for future use. Floodproofing Certificate, if required shall be included in the final plans.

When approve the project, the reviewer shall:

- Stamp on the hard copy of the plan and all applicable sheets
- Sign off the project in the Web Tracking Application with conditions noted.
- Sign off the project in the PCIS with conditions noted (Building and Safety record keeping program).
- Scan and save copies of relevant documents to Web Tracking Application.
- Hard copy of the case shall be stored at a designated location.

- h) When the construction is completed and an EC is submitted for approval, the reviewer shall review the EC to verify that the construction has in fact complied with the requirements. The reviewer will stamp the approved EC and post on Navigate LA Map note. For complicated EC, group manager will be consulted. The group manager is responsible to make the final decision and issue policy guidance for EC review process if applicable. Refer to Chapter 7 for details.

**ATTACHMENT NO.4-1  
DOCUMENTS YOU SHOULD HAVE BEFORE MAKING YOUR  
APPOINTMENT FOR FLOOD ZONE CLEARANCE**

<b>SCOPE OF PROJECT</b>	<b>SUBSTANTIAL IMPROVEMENT</b>	<b>LESS THAN A SUBSTANTIAL IMPROVEMENT</b>
	<ol style="list-style-type: none"> <li>1) Two (2) sets of plans, including floor plans, site plans, cross-section/elevation views. Plans must be signed and stamped by a licensed civil engineer or architect.</li> <li>2) Topographic survey with footprint of proposed structure on existing site (undisturbed project site) stamped, dated and signed by licensed surveyor if Base Flood Elevation (BFE) is not known. Survey must reference 1988 Datum Reference and City Benchmark Map with ID number.</li> <li>3) Site plan or survey should show proposed structure with elevation information of lowest finish floor and adjacent grounds. If Base Flood Elevation (BFE) is unknown, it will be determined from the highest grade adjacent to the improvement, plus the flood depth expected. The minimum finish floor elevation will be the BFE plus one foot for freeboard.</li> <li>4) Plans must show waterproofing for materials susceptible to water damage below the minimum required finish floor elevation (FFE). Metal, concrete, cement and masonry are considered to be waterproof. Floodproofing certificate will be included in the approved plan for non-residential projects.</li> <li>5) Plans must also show flood venting at ground level based on the ratio of one square inch of venting per one square foot of additional improved space of building. The bottom of the vent must be within 12 inches from ground level.</li> <li>6) If existing walls are to be removed as part of the improvement, the existing floor must be raised where the addition joins the existing structure.</li> <li>7) Any additional information such as documentation or calculations confirming that new or improved structure will withstand potential flooding such as (but not limited to): <ul style="list-style-type: none"> <li>- hydraulic and hydrologic calculations</li> <li>- FEMA-established calculations for hydrostatic, hydrodynamic and buoyancy forces</li> <li>- Written correspondence from any government agency confirming approval of improvement within an agency easement.</li> <li>- Structural plans and calculations wet-stamped and signed with original signature of a licensed civil or structural engineer.</li> </ul> </li> </ol>	<p>If you contend that your improvements are less than 50% of the appraised value of the existing structure, you will need to bring the following documents to your appointment for verification.</p> <ol style="list-style-type: none"> <li>1) Recent appraisal of existing structure by certified appraiser dating from no more than twelve months ago. County Assessors tax records may be used in lieu of an appraisal report.</li> <li>2) Cost estimate from contractor, with breakdowns for labor, material, profit and overhead. (Material costs must be further broken down by <u>unit cost</u> and <u>quantity</u> of each type of material).</li> </ol> <p>Organizing costs and receipts in an easy-to-read format will facilitate the review of your case. Should your case require extensive time to review, you may need to pay an additional \$1000.</p>
<b>WITHIN FLOODPLAIN?</b>	<b>LETTER OF MAP AMENDMENT (LOMA)</b>	<b>COMMERCIAL PROJECTS WITH SUBGRADE STRUCTURES</b>
	<p>If you believe that your project does not sit within a floodplain, you must file a Letter of Map Amendment (LOMA) with FEMA, which approves your petition. Issuance of a LOMA eliminates the Federal flood insurance purchase requirement for Federal or federally backed financing, but not necessarily for private mortgage lenders.</p> <p>Your first step is to file a Conditional Letter of Map Amendment (CLOMA). Please review FEMA's website at <a href="http://www.fema.gov/plan/prevent/fhm/hm_main.shtm">www.fema.gov/plan/prevent/fhm/hm_main.shtm</a> before making your appointment.</p>	<p>In addition to the documents listed on the left, you must submit an emergency plan for flooding and a covenant agreement attached to the property.</p>
	<b>LETTER OF MAP REVISION (LOMR)</b>	
		<p>If you believe that the floodplain boundary is incorrect and wish to request a re-drawing of the boundary, you must file a LOMR with FEMA (or a Letter of Map Revision – Fill [LOMR-F] for a revision based on increased elevation of property due to certified fill). The LOMR application should include, but is not limited to, calculations specified on the application. The Stormwater Engineer can guide you in preparing the LOMR, if necessary. However, please review <a href="http://www.fema.gov/plan/prevent/fhm/hm_main.shtm">www.fema.gov/plan/prevent/fhm/hm_main.shtm</a> before making an appointment.</p>

ATTACHMENT 4-2

CITY OF LOS ANGELES  
CALIFORNIA



ANTONIO R. VILLARAIGOSA  
MAYOR

BOARD OF PUBLIC WORKS  
MEMBERS

CYNTHIA M. RUIZ  
PRESIDENT

VALERIE LYNN SHAW  
VICE PRESIDENT

PAULA A. DANIELS  
PRESIDENT PRO TEMPORE

ERNESTO CÁRDENAS  
COMMISSIONER

JULIE GUTMAN  
COMMISSIONER

JAMES A. GIBSON  
EXECUTIVE OFFICER

DEPARTMENT OF  
PUBLIC WORKS

BUREAU OF  
ENGINEERING

GARY LEE MOORE, P.E.  
CITY ENGINEER

1149 S. BROADWAY ST., SUITE 700  
LOS ANGELES, CA 90015

<http://eng.lacity.org>

Date

Address

Attn: Name, title

SUBJECT: NFIP Clearance – Address

REFERENCE: PCIS Permit Numbers

Dear Mr. XXX:

This letter is to inform you that the above referenced Permits will be cleared for NFIP compliance by the City. However, City would like to advise you that there is still a risk of flooding due to your project location within the floodplain and the design elevation above the Base Flood Elevation for all project elements is recommended.

If you have any questions regarding this matter, please contact (plan checker's name and phone number)

Sincerely,

Acknowledgement Signature by

-----

Name, title

Representative for Tesoro Refining & Marketing Co.

cc: file

Stormwater Group Manager BOE

AN EQUAL EMPLOYMENT OPPORTUNITY EMPLOYER

Recyclable and made from recycled waste. 

## CHAPTER 5

### SUBSTANTIAL IMPROVEMENT DETERMINATION GUIDELINES

**Attention:** At the time of permit application, Department of Building and Safety will determine if the improvement is in Special Flood Hazard Area (SFHA) and whether the estimated ratio of the improvement over market value is 40% or greater. If that is the case, the applicant will be referred to Bureau of Engineering for detailed evaluation of substantial improvement. See Attachment No. 5-1 through 5-5. The purpose of this document is to provide BOE staff with guidelines in determining whether an improvement is considered substantial.

#### 1. **Definition of Substantial Improvement**

-When an improvement equals or exceeds 50 percent of the market value of the existing structure before the start of the construction, then the improvement is determined to be substantial. All substantial improvement must comply with FEMA's regulations for improvement in Special Flood Hazard Areas.

$$\frac{\text{Total Cost of Improvement for the last 3 years}}{\text{Market Value of the structure}} \geq 50\% \rightarrow \text{Substantial Improvement}$$

#### 2. **Total Cost of Improvement**

-Construction estimate for previous improvements can be obtained through Department of Building and Safety.

-The cost estimate of the proposed improvement must be submitted to the City along with the affidavits from the homeowner and the contractor/engineer/architect. A sample of the construction cost estimate and Affidavit Forms are attached<sup>1</sup>. See Attachment No. 5-1, -2, and -3.

-The cost estimate for the proposed improvements shall be prepared within a year from the date of the complete and correct submittals of plans, cost estimate, and appraisal.

#### **-Items must include in the cost estimate are:**

- a. All structural elements:
  - Spread or continuous foundation footings and pilings
  - Monolithic or other types of concrete slab
  - Bearing walls, tie beams, and trusses
  - Floors and ceilings
  - Attached decks and porches
  - Interior partition walls
  - exterior wall finishes (brick, stucco, siding) including painting and moldings
  - windows and doors
  - reshingling or retiling of a roof
  - Hardware
- b. All interior finishing elements, including:
  - Tiling, linoleum, stone, or carpet over subflooring

---

<sup>1</sup> Affidavit Forms are handouts from the Substantial Improvement and Substantial Damage Training provided by the training material from FEMA and State DWR.

- Bathroom tiling and fixtures
- Wall finishes (dry wall, painting, stucco, plaster, paneling, marble, etc.)
- Built-in bookcases, cabinets, and furniture.
- Hardware
- c. All utilities and service equipment:
  - HVAC equipment
  - Plumbing and electrical services
  - Light fixtures and ceiling fans
  - Security systems
  - Built-in kitchen appliances
  - Central vacuum systems
  - Water filtration, conditioning, or recirculation systems
- d. Cost to demolish storm-damage building components
- e. Labor and other costs associated with moving and altering undamaged building components to accommodate improvements or additions
- f. Overhead and profits (insurance, worker compensation, etc.)

**-Items to be excluded are:**

- a. Plans and specifications
- b. Survey costs
- c. Permit fees
- d. Post-storm debris removal and clean up
- e. Cost to correct existing violation<sup>2</sup>
- f. Items not considered real property such as throw rugs, furniture, stoves not built-in, refrigerators, etc.
- g. Outside improvement such as:
  - Landscaping
  - Sidewalks
  - Fences
  - Yard lights
  - Swimming pools
  - Screened pool enclosures
  - Detached structures (including garages, sheds, and gazebos)
  - Landscape irrigation systems

**Market Value Of Structure:** Only the existing structure value will be considered in the determination of the nature of the improvement.

-The following are acceptable estimates of market value:

- An independent appraisal prepared and signed by a license appraiser: The appraisal shall include items highlighted on Attachment No. 5-4. The depreciated value of improvement shall not include exterior improvement such as detached garage, carport, swimming pool, pool enclosure, landscaping, paving, etc.

---

<sup>2</sup>This can be excluded only if: -a regulatory official was informed and knew the extent of the code related to deficiencies, and the deficiencies were in existence prior to the improvement.

Note to Staff: the Depreciated Cost of Improvements is to be used for determination of substantial improvement.

- The value of the structure taken from NFIP claims data.
  - The appraisal shall be prepared within a year from the date of the complete and correct submittals of plans, cost estimate, and appraisal.

ATTACHMENT NO. 5-1

SAMPLE OF CONSTRUCTION COST ESTIMATE

Item #	Jobs	Unit	Quantity	Unti Cost	Material Cost	Labor Cost	Subtotal	Total
1	Electrical	LS			\$2,644.00	\$5,164	\$7,808.00	\$7,808.00
	-Wire	LT	3000	\$0.35	\$1,050.00			
	-Outlet, circuits	Each	6	\$95.00	\$570.00			
	-Switches	Each	16	\$13.00	\$208.00			
	-Plugs	Each	22	\$8.00	\$176.00			
	-Recessed lights	Each	20	\$32.00	\$640.00			
2	Windows	Each	10	\$240.00	\$2,400.00	\$2,500	\$4,900.00	\$4,900.00
3	Doors (interior)	Each			\$1,200.00	\$1,800	\$3,000.00	\$3,000.00
	-32"	Each	8	\$118.00	\$944.00	\$1,300	\$2,244.00	
	-38"	Each	2	\$128.00	\$256.00	\$500	\$756.00	
4	Slab foundation (4")	SQFt	1000	\$10.00	\$10,000.00	\$5,000	\$15,000.00	\$15,000.00
5	Drywall	Each	85	\$9.45	\$803.25	\$2,320	\$3,123.25	\$3,123.25
6	Taping/Platering	Each	25	\$7.50	\$187.50	\$2,767	\$2,954.50	\$2,954.50
7	Stucco				\$1,920.00	\$4,900	\$6,820.00	\$6,820.00
	-Scratch base coat	SQFt	1200	\$0.50	\$600.00	\$1,800	\$2,400.00	
	-Brown coat	SQFt	1200	\$0.65	\$780.00	\$1,800	\$2,580.00	
	-Color coat stucco	SQFt	1200	\$0.45	\$540.00	\$1,300	\$1,840.00	
8	Roof, Composition Shingles	SQFt	1300	\$1.85	\$2,405.00	\$2,695	\$5,100.00	\$5,100.00
9	Woodfloor	SQFt	900	\$1.45	\$1,305.00	\$1,800	\$3,105.00	\$3,105.00
10	Master Bathroom	Each	1		\$2,540.00	\$6,000	\$8,540.00	\$8,540.00
	-Vanity	Each	1	\$300.00	\$300.00			
	-Sink	Each	2	\$35.00	\$70.00			
	-Counter top and faucets	Each	1	\$300.00	\$300.00			
	-Jacuzzi spout filler	Each	1	\$280.00	\$280.00			
	-Jacuzzi	Each	1	\$895.00	\$895.00			
	-Toilet	Each	1	\$250.00	\$250.00			
	-Towels bar & papper toilet holder	Each	1	\$80.00	\$80.00			
	-Shower enclosure and mirror	Each	1	\$365.00	\$365.00			
11	Overhead	LS						\$2,000.00
12	Profit	LS						\$5,000.00
	<b>Total cost of improvement</b>							<b>\$67,350.75</b>

**ATTACHMENT NO.5-2**

**Owner  
IMPROVEMENT/REPAIR AFFIDAVIT**

Building Permit #: \_\_\_\_\_

Contractor/Architect/Civil Engineer Name: \_\_\_\_\_

License #: \_\_\_\_\_

Owner Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

I hereby attest to the fact that the construction plans and documents submitted by my Contractor/Architect/Civil Engineer for the **Substantial Improvement/Damage Evaluation** are all of **the improvements/repairs** that will be done to the existing building and that all additions, improvements, or repairs on the subject building are included in the construction plans and documents herewith. **No other repairs or reconstruction or additions or remodeling have been made to the subject building that are not included in the attached construction plans and documents.**

I understand that I am subject to enforcement action and/or fines if inspection of the property reveals that I have made improvements or repairs not **included in the attached construction plans and documents** or that I have included non-conforming or illegal structures/additions, to the existing structure without having presented construction plans for such additions. I understand that any permit issued by the City of Los Angeles pursuant to this affidavit does not authorize the reconstruction, repair or maintenance of any illegal additions, fences, sheds or non-conforming uses or structures on the subject property.

STATE OF CALIFORNIA

COUNTY OF \_\_\_\_\_

Before me this day personally appear \_\_\_\_\_

Who, being duly sworn deposes and says that he had read, understands, and agrees to comply with all the aforementioned conditions.

\_\_\_\_\_  
Signature Owner

\_\_\_\_\_  
Co-Owner

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_  
A.D., 200\_\_\_\_ .

\_\_\_\_\_  
Notary Public State of California

My commission expires \_\_\_\_\_

**ATTACHMENT NO.5-3**

**Contractor/Architect/Civil Engineer  
IMPROVEMENT/REPAIR AFFIDAVIT**

Building Permit #: \_\_\_\_\_

Contractor/Architect/Civil Engineer Name: \_\_\_\_\_

License #: \_\_\_\_\_

Owner Name: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

I hereby attest to the fact that I, or a member of my staff, personally inspected the above mentioned property and produced the attached construction plans and documents for all of the improvements, repairs, reconstruction and/or remodeling which are hereby submitted for a **Substantial Improvement/Damage Evaluation**. These improvements/repairs are all of the **improvements/repairs** to this structure, and that all additions, improvements, or repairs proposed on the subject building are included in the construction plans and documents herewith.

I understand that I am subject to enforcement action and/or fines if inspection of the property reveals that I have made improvements or repairs **notincluded in the attached construction plans and documents** to the existing structure without having presented plans for such additions. I understand that any permit issued by the City of Los Angeles pursuant to this affidavit does not authorize the reconstruction, repair or maintenance of any illegal additions, fences, sheds or non-conforming uses or structures on the subject property.

STATE OF CALIFORNIA

COUNTY OF \_\_\_\_\_

Before me this day personally appear \_\_\_\_\_

Who, being duly sworn deposes and says that he had read, understands, and agrees to comply with all the aforementioned conditions.

\_\_\_\_\_  
Signature Contractor/Architect/Engineer

\_\_\_\_\_  
Date

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_  
A.D., 200\_\_\_\_ .

\_\_\_\_\_  
Notary Public State of California

My commission expires \_\_\_\_\_

**ATTACHMENT NO.5-4**

**APPRAISAL SUMMARY SHEET**

Owner:  
Address:  
File No.:

In accordance with your request, I have personally inspected and appraised the real property at:  
(Address of the property)

The purpose of this appraisal is to develop an opinion of the market value of the subject property, as improved. The property rights appraised are the fee simple interest in the site and improvements.

In my opinion, for the purpose of substantial improvement, the estimated market value of the depreciated cost of improvements as of August 14, 2007 is:

\$142,000  
One Hundred forty-two Thousand Dollars

The attached report contains the description, analysis, and supportive data for the conclusions, final estimate of value, descriptive photographs, limiting conditions and appropriate certifications.

Appraiser's Signature:  
License No:  
Expiration Date:





**ATTACHMENT NO. 5-5**

**INFORMATION BULLETIN / PUBLIC - BUILDING CODE**

REFERENCE NO.: See Below

Effective: 10-09-80

DOCUMENT NO. **P/BC 2002-064**

Revised: 09-19-06

Previously Issued As: MGD 63

---

**FLOOD HAZARD MANAGEMENT  
SPECIFIC PLAN GUIDELINES**

(Code Sections: L.A. Ordinance 172,081; Los Angeles Building Code Appendix Chapter 31)

The Flood Hazard Specific Plan (Ordinance No. 172,081, effective July 3, 1998) qualifies the City to be in the Regular Status classification of the National Flood Insurance Program. This Plan and the Los Angeles Building Code Appendix Chapter 31 qualify property owners for greater coverage limits and generally lower flood insurance premium rates. This Information Bulletin, as required by Section 6.D of the Specific Plan, establishes standards necessary to carry out the provisions and intent of the Specific Plan.

**A. DEFINITIONS:**

For the purpose of this Bulletin, the following terms are defined as follows:

BOE: City of Los Angeles Department of Public Works, Bureau of Engineering

Elevation Certificate: The Elevation Certificate is an important administrative tool to provide elevation information necessary to ensure compliance with the National Flood Insurance Program (NFIP). The Elevation Certificate may be downloaded from the FEMA website at <http://www.fema.gov/business/nfip/elvinst.shtm>

FEMA: Federal Emergency Management Agency

FHSP: Flood Hazard Specific Plan, Ordinance No. 172,081.

Flood-Proofing: Any combination of structural and non-structural additions, changes or adjustments to structures which prevent flood-related damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

Flood Proofing Certificate: The Flood Proofing Certificate is an administrative tool to document design information necessary to ensure compliance with the National Flood Insurance Program (NFIP). The Flood Proofing Certificate may be downloaded from the FEMA website at: [http://www.fema.gov/plan/prevent/fhm/dl\\_fpc.shtm](http://www.fema.gov/plan/prevent/fhm/dl_fpc.shtm)

LADBS: City of Los Angeles Department of Building and Safety

Los Angeles Flood Hazard Map. (LAFHM): The official maps for the City of Los Angeles showing the boundaries of hazard areas. See <http://zimas.lacity.org/> to determine whether a specific parcel is located in the LAFHM.

Market Value: The value of the structure which alterations are proposed, including depreciation. This definition is not to be construed to mean the replacement cost. Market Value may be estimated by LADBS as the "Assessed Improvement Value" found in the Los Angeles City zoning information web site: <http://zimas.lacity.org/>

Substantial Improvement or Substantial Damage: Any reconstruction, rehabilitation, addition or other improvement of a structure, the cost of which equals or exceeds 50% of the Market Value of the structure before the start of construction of the improvement. This term includes structures which

---

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities. For efficient handling of information internally and in the internet, conversion to this new format of code related and administrative information bulletins including MGD and RGA that were previously issued will also allow flexibility and timely distribution of information to the public.

have incurred substantial damage, regardless of the actual repair work performed.

**B. APPLICATION:**

The following regulations (FEMA Publication 213 and Ord. 172,081) apply to all public and private development in the designated special flood hazard area mapped by the City Engineer.

1. No improvements of any kind are permitted in areas designated as Floodways (Ordinance 172,081, Section 5.C.2).
2. Projects other than new buildings and Substantial Improvements may be approved without conditions if the Permit Valuation is less than 50% of the Market Value. Documentation to support Market Value shall be attached to the building permit.
3. If the project cost is over 40% of the Market Value, then the Market Value shall be verified and approved by the BOE.
4. Market Value is verified by the BOE using appraisal reports prepared by an appraiser certified in the state of California.
5. Building permits for new buildings or alterations with Permit Valuation in excess of 50% of the building Market Value are considered "Substantial Improvements" and shall fully comply with the requirements of the FHSP.
6. Requests for Modification of Building Ordinances for variations to this specific plan shall be processed with concurrence from the National Flood Insurance Coordinator, Department of Public Works. Ordinance 172,081, Section 9.A.2.

**C. CONSTRUCTION LIMITATIONS:**

The Flood Hazard Specific Plan and FEMA require specific construction limitations based on the location of the development in the special hazard areas (Ordinance 172,081, Section 5). Developments located in more than one special hazard area (i.e. floodway, floodprone and mudflow) shall comply with the requirements in each of the applicable hazard areas. The table below shows the group responsible for review and approval for various development phases.



Table 1 - City Agency Responsibilities			
City Group	Description of Work		
	New Buildings	Additions, Alterations, Reconstructions, and Repair	Non-building structures (except fences) and Grading (not associated with building construction and greater than 50 cubic yards)
Los Angeles Department of Public Works, Bureau of Engineering, "BOE"	<ul style="list-style-type: none"> <li>Review and approve building and site designs for compliance with FHSP and FEMA requirements.</li> <li>Communicate to LADBS required forces on structures and buildings.</li> </ul>	<ul style="list-style-type: none"> <li>Determine Market Value of structure and whether work is Significant Improvement.</li> <li>If Significant Improvement, then see requirements for New Buildings.</li> <li>If not Significant Improvement, then may approve without conditions..</li> </ul>	<ul style="list-style-type: none"> <li>See requirements for New Buildings.</li> <li>Review site plan to verify that site drainage will not create a flood hazard or affect existing flood prevention systems.</li> </ul>
LADBS Building Plan Check	<ul style="list-style-type: none"> <li>Identify projects located within the FHSP area and refer to BOE for plan approval.</li> <li>Review structural strength (hydrologic forces) based on criteria set by BOE.</li> </ul>	<ul style="list-style-type: none"> <li>Identify project located within the FHSP area.</li> <li>If permit valuation is greater than 40% of Market Value, then refer to BOE for refined Significant Improvement calculation.</li> <li>If project is Significant Improvement, then review structural strength (hydrologic forces) based on criteria set by BOE.</li> <li>Document all approvals without conditions showing calculations when permit valuation is less than 40% of the Market Value.</li> </ul>	<ul style="list-style-type: none"> <li>See requirements for New Buildings.</li> </ul>

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities. For efficient handling of information internally and in the internet, conversion to this new format of code related and administrative information bulletins including MGD and RGA that were previously issued will also allow flexibility and timely distribution of information to the public.



Table 1 - City Agency Responsibilities			
City Group	Description of Work		
	New Buildings	Additions, Alterations, Reconstructions, and Repair	Non-building structures (except fences) and Grading (not associated with building construction and greater than 50 cubic yards)
LADBS Grading Section	Review and approve Geologic Reports for on-site slope stability, foundations, on-site mudflow, and site drainage.	Same as the requirements for New Buildings.	Same as the requirements for New Buildings.
LADBS Inspection	<ul style="list-style-type: none"> <li>• Accept only BOE reviewed and approved Elevation and Flood Proofing Certificates submitted by property owner and keep copy on file.</li> <li>• Require elevation of Lowest Finished Floor to be verified by a surveyor.</li> <li>• Verify construction per plans approved by BOE.</li> </ul>	Same as the requirements for New Buildings.	Same as the requirements for New Buildings.

The following is a list of the required documents needed for approval by each city agency.

1. Los Angeles Department of Public Works, Bureau of Engineering, ("BOE")
  - a. Site plans, licensed survey maps, LADBS geology reports, Significant Improvement calculation, and other documentation necessary to verify compliance with the FHSP and FEMA construction requirements.
  - b. Itemized construction cost estimates prepared by the engineer or architect of additions, alterations, repairs, rehabilitations, and reconstructions to complete a Significant Improvement determination for existing buildings.
  - c. Appraisal Report prepared by an appraiser certified in the State of California.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities. For efficient handling of information internally and in the internet, conversion to this new format of code related and administrative information bulletins including MGD and RGA that were previously issued will also allow flexibility and timely distribution of information to the public.



- d. Reports by civil engineers or geologists to establish structural design requirements for components of the building and site to withstand hydro-geologic forces pursuant to the FHSP Section 5.C.1 (b), Section 5.C.4 (c), and Section 5.C.6 (a). (For properties located within mudflow areas, mudprone areas, and flood-related erosion hazard areas to determine the extent of the exposure, determine remedies, and to determine that the proposed project will not aggravate existing hazards.)
2. LADBS Grading Section - Reports prepared by licensed geologists or soils engineer pursuant to the FHSP Section 5.C.4(c) and 5.C.6 (a) . for properties located within mudflow areas, mudprone areas, and flood-related erosion hazard areas to determine the extent of the exposure, determine remedies and to determine that the proposed project will not aggravate existing hazards.
3. LADBS Structural Plan Check
  - a. Structural design drawings and calculations based on loads established by the Department of Public Works.
  - b. Building and grading permit applications with designs complying with the FHSP approved by the BOE.
4. LADBS Building Inspection - A Flood Proofing Certificate or an Elevation Certificate with a licensed survey map to approve the top of foundations.

**D. REPORTING:**

The Department is required to submit to the Federal Emergency Management Agency, FEMA, copies of the following:

1. A report of the number of permits approved and waivers applied for and granted in areas of special hazard.
2. Copies of all Flood Proofing Certificates and Elevation Certificates for all projects completing final inspections.
3. In order for the inspectors to prepare the biannual report to FEMA, the following is required to be given to the Building Inspector prior to the final inspection of the building (Ordinance 172,081, Section 6.D.6.):
  - a. The Elevation Certificate as reviewed and approved by the City's NFIP Coordinator, used to verify the elevation of the finished floor is as required on the approved plans. Los Angeles Building Code Appendix Section 3109
  - b. Three copies of the completed certificate (Elevation Certificate or Flood Proofing Certificate) to be placed in the following to be shown to the FEMA Auditor:
    - i. Building Inspector's field pack,
    - ii. Microfilmed records with the completed Certificate of Occupancy, and
    - iii. Assistant Inspection Bureau Chief's office.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities. For efficient handling of information internally and in the internet, conversion to this new format of code-related and administrative information bulletins including MGD and RGA that were previously issued will also allow flexibility and timely distribution of information to the public.

## CHAPTER 6 FLOOD ZONE CLEARANCE REQUIREMENTS

### 1. OBJECTIVE

The purpose of this chapter is to set the minimum requirements for substantial/new construction in different flood zones. Additional requirements can be added for specific case with the approval from the Group Manager.

### 2. OVERVIEW

Flood zone designation of a site shall be determined by the Digital Flood Insurance Rate Maps (DFIRMs) issued on September 26, 2008. The effective DFIRMs delineates the City of Los Angeles into three main areas:

**-Special Flood Hazard Areas (SFHAs):** are defined as the areas that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30.

**-Moderate Flood Hazard Areas:** are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year). They are designated as flood Zone X (shaded) the DFIRMs.

**-Minimal Flood Hazard Areas:** are the areas outside the SFHAs and higher than the elevation of the 0.2-percent-annual-chance flood. These areas are labeled Zone X (unshaded) on the DFIRMs.

All substantial and new constructions in SFHAs shall comply with the requirements established under Ordinance 172081. Currently, there are no flood compliance requirements for construction in the Moderate and Minimum Flood Hazard areas with the exception of critical facilities, such as hospitals, fire stations, etc.

The remainder of this Chapter will address the methods to determine the base flood elevation (BFE) and the minimum flood compliance requirements for different flood zones in SFHA.

### 3. ZONES AE, AH, AND A1-A30 (CODES: AE, AH, A1-A30)

- a. BFE has been determined on DFIRMs.
- b. The LFFE for all new constructions or substantial improvements shall be the BFE specified on the FIRM plus one foot (1 ft) freeboard as indicated in Ordinance 172081.
- c. Non-Residential buildings are allowed to have the lowest floor elevation lower than LFFE. In that case, Floodproofing certificated (FC) shall be required and shall be signed by a licensed architect/engineer. The FC shall be included in the

approved plan. Floodproofing is not allowed for residential structures. The emergency operation plan will be submitted for approval before the project can be signed off. Covenant Agreement/Waiver of Damage maybe required

- d. Residential buildings are required to raise the lowest floor elevation to or above the LFFE.
- e. The lowest floor of the building can be raised by the following methods:
  - Elevate on fill. LOMA-F is not required under NFIP guidelines. However, aCLOMR is required if an encroachment into a floodway is proposed that will change the base floodelevation or boundaries.
  - Elevate on piles, posts, piers or columns.
  - Elevate on walls or crawlspace: openings are required for venting floodwater. Openings must meet four criteria or shall be designed by a licensed engineer or Architect:
    - There must be a minimum of two openings on different sides of each enclosed area. If a building has more than one enclosed area, each area must have openings on exterior walls to allow floodwater to directly enter.
    - The total area of all openings must be at least 1square inch for each 1 square foot of enclosed area.
    - The bottom of each opening can be no more than 1 foot above the adjacent grade.
    - Any louvers, screens, or other opening covers must not block or impede the automatic flow of floodwaters into and out of the enclosed area.

#### **4. ZONE AO (CODE AO)**

- a. BFE in zone AO is the highest adjacent natural grade on perimeter of building plus the Base Flood Depth (BFD) specified in feet on the Digital Flood Insurance Rate Map. The LFFE shall be the BFE plus one foot (1 ft) freeboard per the City Ordinance.
- b. All new construction or substantial improvement shall have the lowest floor, including the basement, elevated to or above the LFFE.
- c. Conditions in 3c, 3d, and 3e apply.

#### **5. ZONE A WITHOUT BFE (APPROXIMATE ZONE A AREA)**

- a. When the BFE is not available, the applicant is required to hire an engineer to determine the BFE at the site. A copy of the hydrology and hydraulic calculation determining the BFE (water surface level when the site is inundated by 100 year storm) is submitted to the City for review and approval. The LFFE shall be the BFE plus one foot (1 ft) freeboard.
- b. Conditions in 3c, 3d, and 3e apply.

#### **6. ZONE VE AND V1-30**

The existence and extent of flooding, coastal high hazard and/or flood related erosion must be considered in the planning, site visiting, design and construction of public

and private development. Full considerations must be given to the fact that development in coastal high hazard and/or flood-related erosion areas may create a potential for loss of life and personal injuries, loss to public and private property and exposure to coastal high-hazard and/or flood-related erosion hazards.

Each permit shall have sufficient information to determine whether the proposed project will be safe from hazards or aggravate existing coastal hazards. Each application shall further provide the elevation of the lowest floor.

When the proposed project is found to be in the path of coastal high-hazard, require the project to be relocated or protective measures be taken so as to not aggravate the hazard or shift the hazard to another location.

All new construction and substantial improvement shall be elevated on adequately anchored pilings or columns and securely anchored to such piles or columns so that the lowest portion of the structural members of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood level. A Registered Civil Engineer, Structural Engineer or Architect shall certify that the structure is securely anchored in order to withstand velocity waters and hurricane wave wash.

All new construction shall be located landward of the reach of mean high tides.

It is prohibited to use fill for structural support in zone V1-V30, V or VE.

All new construction shall have the space below the Lowest Floor free of obstructions or constructed with breakaway walls. Such enclosed space shall not be used for human habitation and will be usable solely for parking of vehicles, building access, or storage.

The placement of manufactured homes will comply with the lowest floor elevation requirement set by the Bureau of Engineering. Building Code requirements will be established and enforced by the California State Housing and Community Development (HCD). At the completion of the construction, HCD will review the EC for compliance. A copy of the EC will be sent to the Bureau of Engineering for record keeping.

## **7. FLOODWAY**

Per Ordinance 172081: no new structures, construction, add-on construction, reconstruction, rehabilitation or other improvements to existing structures shall be permitted within floodway. However, FEMA planner has indicated that the NFIP allows new or significant improvement in the floodway if the proposed project will not increase in flood level during the 100-yr storm events. City Attorney also indicated that, as a grand-father situation, the City may not deny building permit for the improvement of existing structures. In such cases, the following guidelines need to be followed:

1. For residential building, any new or substantial improvement must comply with minimum National Flood Insurance Program requirements. That means no increase in flood level during 100-yr storm event. The LFFE must be above BFE per City Ordinance. If the BFE is not available, hydraulic/hydrology reports must be provided by a licensed civil engineer.
2. The City may require waiver of damages to relieve its liability for such permit to be issued.
3. EC is required.

## **8. ALLUVIAL FAN AREAS**

In addition to complying with applicable requirements for pertinent flood zone type, the following calculations must be submitted for review and approval of structures in alluvial fan areas:

- Scouring depth.
- Hydrostatic vertical force (buoyancy)
- Hydrostatic lateral force
- Debris impact force
- Foundation plans showing pile depths and calculated scouring depths

## **9. ZONE X (SHADED AND UNSHADED) ADJACENT TO SFHA NOT "CONTAINED IN CHANNEL"(refer to TB 10-01)**

New and improvement in the Zona X, but near SFHA shall comply with both of the following criteria:

1. A minimum horizontal set back of 20 feet - The adjacent grade at the closest point of the structure to the SFHA's boundary shall be at or above the BFE plus one foot freeboard.
2. The lowest floor of the basement shall be no more than 5 feet below the BFE.

Unless both conditions are met, hydrostatic force on the basement and buoyancy force on the structure must be considered in the design of the improvement. The calculation should refer to TB3-93 and shall be certified by a licensed civil or structural engineer.

## **CHAPTER 7 ELEVATION CERTIFICATE REVIEW**

### **1. PURPOSE**

The Elevation Certificate (EC) is an instrument in determining whether a new/substantial improvement has been constructed in compliance with flood requirements stated on the permit. A Certificate of Occupancy will not be issued by the Department of Building and Safety (DBS) until an EC is received and reviewed by BOE. FEMA's NFIP program provides CRS credit for the City to keep records of completed ECs. This Chapter will discuss the current procedure for reviewing the EC.

### **2. PROCEDURE**

The City of Los Angeles requires Elevation Certificates (EC) for all new or substantially improved structures in the Special Flood Hazard Area (SFHA), as described in the City's Flood Hazard Specific Plan Ordinance No. 172081.

- a. When a property owner applies for a building permit for a new structure, remodeling an existing structure, or rebuilding a damaged structure, the DBS plan checker will review the parcel information. If the Digital Flood Insurance Rate Map (DFIRM) identifies the parcel as being within a SFHA, the plan checker will give the building permit applicant a check list identifying the steps required for flood hazard clearance and EC approval.
- b. At the time the permit is approved for flood hazard clearance, the Bureau of Engineering/Stormwater Group (BOE/SWG) NFIP Section staff will record the Base Flood Elevation, required Finished Floor Elevation and other requirements (flood proofing, elevated electrical and mechanical equipment, etc.) on the approval stamp (see the stamp below) and check the appropriate boxes of required items (EC and Others). This information will also be recorded in DBS' computerized Plan Checking and Inspection System (PCIS) to ensure that the permit applicant will submit the EC for review after the construction work has been completed.

**CITY OF LOS ANGELES**  
Bureau of Engineering  
National Flood Insurance Program

PCIS Application No.: \_\_\_\_\_  
 Flood Zone \_\_\_\_\_ Base Flood Elevation \_\_\_\_\_ NGVD29 \_\_\_\_\_ NAVD88 \_\_\_\_\_  
 Substantial Improvement: Y  N  (No Further Requirements)  
 Construction Subject to Flood Hazard Mitigation  
 Highest Adjacent Grade \_\_\_\_\_ ft Minimum Finish Floor Elevation \_\_\_\_\_ ft  
 Basement Allowed Y  N   
 Flood Proofing Material required up to \_\_\_\_\_ ft  
 Venting \_\_\_\_\_ Sq. inch (bottom of openings within one foot above adjacent grade)  
 Other Requirements: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Required Documents for Certificate of Occupancy:  
 \_\_\_\_\_ EC (Elevation Certificate)  
 \_\_\_\_\_ FC (Flood Proofing Certificate)  
 \_\_\_\_\_ Others: \_\_\_\_\_

Approval by: \_\_\_\_\_ Office: \_\_\_\_\_ Date: \_\_\_\_\_

- c. When the construction has been completed, the applicant will submit the EC to the BOE/SWG staff for review and approval. The BOE/SWG staff will verify that the EC is filled out correctly and in compliance with the flood requirements as given on the stamp of the approved plans. If the EC is filled out incorrectly, it will be returned to the applicant for corrections. The approved EC will be stamped and signed by the BOE/SWG staff. Approvals of the Certificate of Occupancy are not given by DBS until the EC is approved by BOE/SWG as being complete and correct.
- d. The approved EC is scanned and posted onto the City’s BOE Internet website for anyone to view. They are also posted into an intranet web application for internal use, through Map Notes, to be associated with that parcel for future reference.
- e. Some ECs that were submitted in the past and contained errors have been corrected by the BOE/SWG staff using the EC correction form. The correction form is stored with the original EC and is scanned with the original EC as one document.

**3. REVIEW GUIDELINES**

This Section provides guidelines for reviewing an EC. The reviewer may require additional information/verification as the situation calls for. **Section C must be filled out for all SFHAs.** All items of relevant sections must be filled out; non-applicable items shall be marked as N/A.

- a. Section A: Verifying that:
  - Required information has been provided,
  - The building diagram was selected correctly, and
  - The flood vents are sufficiently provided, if required.
- b. Section B: Verifying that required information has been provided correctly.

- c. Section C: Verifying that:
  - All required information has been provided,
  - The lowest finished floor is at or above the BFE plus 1 foot, and
  - The lowest elevation of the machinery and equipment are at or above the BFE plus 1 foot.
  
- d. Section D: for the EC to be valid, this section has to be stamped and signed by a licensed civil engineer or a licensed land surveyor. Description and comments of any equipment indicated in Section C must be provided in this Section.
  
- e. Section E: Verifying that all required information has been provided correctly.

|

**APPENDIX A**  
**CITY ORDINANCE**

[http://clkrep.lacity.org/onlinedocs/1998/98-1023\\_ORD\\_172081\\_07-03-1998.pdf](http://clkrep.lacity.org/onlinedocs/1998/98-1023_ORD_172081_07-03-1998.pdf)

**APPENDIX B**  
**TECHNICAL BULLETINES**

<http://www.fema.gov/plan/prevent/floodplain/techbul.shtm>

**APPENDIX C**  
**CODES OF FEDERAL REGULATIONS**

[http://www.access.gpo.gov/nara/cfr/waisidx\\_02/44cfrv1\\_02.html](http://www.access.gpo.gov/nara/cfr/waisidx_02/44cfrv1_02.html)

## **APPENDIX D**

# **MAP MAINTENANCE PROCEDURE**

Flood Insurance Rate Maps are maintained and updated as follow:

Official DFIRM data are obtained from FEMA. Approved LOMRs and LOMAs are then added and updated to corresponding DFIRM layers using ArcGIS software by a City's GIS specialist. These updated data are then posted onto the City's NavigateLA website.



# APPENDIXE

## CORRESPONDENCE WITH FEMA

**From:** Susan Shu  
**To:** Cynthia McKenzie  
**CC:** Bing Sun; Cindy Pham; Jeff Napier; Mahendra Amin; Mohammad Al-jamal;...  
**Date:** 11/2/2009 12:12 PM  
**Subject:** RE: Elevation Certificate did not meet minimum BFE - Carmona Av

thanks very much, you are right, raise the entire structure is not practical at this time.

We will DO:

1. require the resident to use waterproof coating up to LFE per City Ordinance.
  2. We will send an engineer to perform field visit and provide specific recommendation for home owner to implement to mitigate flooding problem
  3. We will review the possibility of issue a variance.
- thanks for your help

>>> "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov> 11/2/2009 11:40 AM >>>

Not really. If possible, having drainage paths that direct the flow away from the house could be used in place of shields. Or, the paths and sand bags on site. Waterproof coating to reduce seepage. If the construction was undervalued by the applicant, you can require more mitigation. If a city error, you may want to offer more advise - have staff do a field visit, and make practical recommendations regarding protection from flooding.

Why don't you investigate the situation and then decide a plan that makes sense in terms of providing flood protection, but stops short of having the entire structure raised. The elevation would be nice, but probably not practical, right?

-----Original Message-----

From: Susan Shu [mailto:Susan.Shu@lacity.org]  
Sent: Monday, November 02, 2009 11:27 AM  
To: Cynthia McKenzie  
Subject: RE: Elevation Certificate did not meet minimum BFE

Sorry, not AE

it is AO-1, so it is 1-ft below BFE per NFIP and 2-ft below the City's Ordinance.

Would this change any of the recommendation you have?

>>> "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov> 11/2/2009 11:16 AM  
>>> >>>

So this is an AE zone? If the difference between LFE & BFE is 1', the City would need to issue a variance, and include some mitigation measures, such as ensuring the machinery and equipment are elevated or protected. If on a crawl space foundation, vents should be installed. Other ideas are to install shield brackets that would provide protection against rising water. Type of construction and actual depth of flooding need to be known before a plan could be agreed upon.

-----Original Message-----

From: Susan Shu [mailto:Susan.Shu@lacity.org]  
Sent: Monday, November 02, 2009 10:57 AM  
To: Cynthia McKenzie  
Subject: RE: Elevation Certificate did not meet minimum BFE

I do not have the details.

The 1st fl was built before 1980, and the 2nd fl addition is considered

as substantial.

Let's say BFE is 100 ft, but the existing 1st floor LFE is only 99ft

>>> "McKenzie, Cynthia" <[cynthia.mckenzie@dhs.gov](mailto:cynthia.mckenzie@dhs.gov)> 11/2/2009 10:26 AM

>>> >>>

The 2nd floor is not independent of the first? What is the BFE and LFE of the lower floor?

-----Original Message-----

From: Susan Shu [<mailto:Susan.Shu@lacity.org>]

Sent: Monday, November 02, 2009 8:56 AM

To: Cynthia McKenzie

Subject: RE: Elevation Certificate did not meet minimum BFE

yes

it is 2nf fl addition, the first floor was existing.

>>> "McKenzie, Cynthia" <[cynthia.mckenzie@dhs.gov](mailto:cynthia.mckenzie@dhs.gov)> 11/2/2009 8:52 AM >>>

This was a substantial improvement?

-----Original Message-----

From: Susan Shu [<mailto:Susan.Shu@lacity.org>]

Sent: Thursday, October 29, 2009 10:50 AM

To: Cynthia McKenzie

Cc: Cindy Pham; Jeff Napier; Michael Martin

Subject: Elevation Certificate did not meet minimum BFE

We had a case that the 2nd floor addition has completed, but the LFFE did not meet BFE.

We are trying to help the resident, and are wondering if you have any suggestions in resolve the case.

thanks

**From:** "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov>  
**To:** "Cindy Pham" <Cindy.Pham@lacity.org>  
**Date:** 10/26/2009 7:20 AM  
**Subject:** RE: Uninsurable Structure  
**Attachments:** 03gr.pdf

A LOMR-F is never required by NFIP guidelines. It's a tool used by many communities for floodplain mgt purposes, and does enable individuals to remove flood insurance requirements. A CLOMR is required if an encroachment into a floodway is proposed that will change the base flood boundaries.

The attached excerpt from the Flood Insurance Manual lists eligible and ineligible coverages. If you have any specific questions not covered on the pages, please let me know.

=====

Cynthia McKenzie  
National Flood Insurance Program  
DHS/FEMA  
1111 Broadway, Suite 1200  
Oakland, CA 94607-4052  
510-627-7190  
510-627-7147 (fax)

-----Original Message-----

**From:** Cindy Pham [mailto:Cindy.Pham@lacity.org]  
**Sent:** Thursday, October 22, 2009 2:00 PM  
**To:** McKenzie, Cynthia  
**Subject:** Uninsurable Structure

Hi Cynthia,

In attached email to Susan Shu regrading the oil refinery at Tesoro you mentioned that the structure is not subject to minimum NFIP compliance because it does not include any flood insurable structures. Do you have a list of insurable structure or any guidelines to determine if a structure is insurable?

Also, does the homeowner need to fill out a LOMR-F every time he uses fill to meet the lowest floor elevation required? Are there any documents/guidelines that set the criteria when the community can approve the fill without asking the applicant to provide a LOMR-F?

Thank you for your help.

---

Cindy Pham  
Street and Stormwater Program  
Bureau of Engineering  
Department of Public Works

**From:** "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov>  
**To:** "Susan Shu" <Susan.Shu@lacity.org>  
**Date:** 9/28/2009 11:08 AM  
**Subject:** RE: Floodway Issues at 14300 Sunset Blvd.

-----Original Message-----

From: Susan Shu [mailto:Susan.Shu@lacity.org]  
Sent: Monday, September 28, 2009 10:48 AM  
To: Cynthia McKenzie  
Subject: RE: Floodway Issues at 14300 Sunset Blvd.

thanks for your reply. But there is something that bothers me.

The current project scope is to demolish the old one-story building, and construction a brand new 2-story building on site, same size of the foot print as before with minor relocation. But double (or triple) the square footage.

My thought are:

1. If they demolish the old building in floodway, why do we (the City or NFIP) allow them to reconstruct a new one in the floodway?. I agree that it doesn't make sense from a floodplain management sense, but strict interpretation of the rules allows floodway encroachment as long as there is no rise in the water surface elevation due to the encroachment. If the new building exceeds its original footprint or is not exact, you could ask for a no-rise certification as well.
2. If they do major remodeling, Significant Improvement, (the applicant is talking about major renovation with a 2nd-floor to be added that would double or triple the existing interior square footage). do we, the City and/or FEMA, require them to comply with today's standards? if so, that means no significant Improvement allowed.?? The project would have to be treated as new construction for floodplain mgt. purposes, so the entire building would need to be elevated and designed with venting and water resistant materials below the BFE.
3. If they elevate the proposed new building in the floodway, their foundation must be floodproofing and withstand the velocity of the floods, Do we allow floodproofing for residential building?? The foundation must be water resistant, so the normal design standards for venting and water resistant materials would apply.

please give me a call so we can discuss this in detail. I'll be in until 2:30 if this doesn't make sense.

thanks

>>> "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov> 9/28/2009 9:31 AM >>>  
Hi Susan,

I don't remember responding to this yet. There are 2 options for floodway construction, assuming the City follows minimum NFIP regulation regarding floodway management. The first option is to require an engineer to certify that the proposed construction does not cause any rise (0.000) in the floodway. The second would be to replace the existing building within the same footprint as the original, but the building would need to be elevated at the site. I guess a third option would be to request a floodway revision, but that seems unlikely considering the scope of the project.

-----Original Message-----

From: Susan Shu [mailto:Susan.Shu@lacity.org]  
Sent: Wednesday, September 16, 2009 7:29 AM  
To: Cynthia McKenzie  
Cc: Michael Brown  
Subject: Fwd: Floodway Issues at 14300 Sunset Blvd.

Hi, Cynthia,

I have attached the applicant email, along with my reply for your reference.

I'd like to seek your input on this case. I do not think FEMA/NFIP allows the new construction in the floodway, especially for residential single family home also, there are several lots under the same condition, I am sure if one gets approved others will follow.

thanks for your help in advance

**From:** Susan Shu  
**To:** Cynthia McKenzie  
**CC:** Cindy Pham; Siavosh (Sia) Poursabahian  
**Date:** 10/13/2009 7:53 AM  
**Subject:** RE: Tesoro Los Angeles Refinery - Plan Check Clearance within a flood zone

thanks for your quick reply

>>> "McKenzie, Cynthia" <[cynthia.mckenzie@dhs.gov](mailto:cynthia.mckenzie@dhs.gov)> 10/13/2009 7:17 AM >>>  
Hello Susan,

Unless I'm missing something, I do not believe that the proposed project is subject to minimum NFIP compliance for buildings. The project does not appear to include any flood insurable structures, and as the project is not within a floodway, there is no need to do an encroachment analysis.

You may want to craft a letter or memo that advises the applicant that although the construction is not subject to your flood ordinance requirements, there is a risk of flooding due to its location within the floodplain and that the city advises elevation above the BFE of all project elements, and keep a signed acknowledgement in your permit files.

=====  
Cynthia McKenzie  
National Flood Insurance Program  
DHS/FEMA  
1111 Broadway, Suite 1200  
Oakland, CA 94607-4052  
510-627-7190  
510-627-7147 (fax)

-----Original Message-----

From: Susan Shu [<mailto:Susan.Shu@lacity.org>]  
Sent: Tuesday, October 13, 2009 6:52 AM  
To: Cynthia McKenzie  
Cc: Siavosh (Sia) Poursabahian  
Subject: RE: Tesoro Los Angeles Refinery - Plan Check Clearance within a flood zone

Cynthia,

here is the detail description along with the plans for the proposed permit application.  
Could you let us know if the NFIP requirements are necessary for this project?

thanks

>>> "McKenzie, Cynthia" <[cynthia.mckenzie@dhs.gov](mailto:cynthia.mckenzie@dhs.gov)> 9/22/2009 4:05 PM >>>  
Do you have some plans I could look at tomorrow night before the meeting? I'm not clear on exactly what the proposal is.

---

From: Susan Shu [<mailto:Susan.Shu@lacity.org>]  
Sent: Tue 9/22/2009 8:10 AM  
To: Cynthia McKenzie  
Cc: Lawrence Cuaresma; Siavosh (Sia) Poursabahian

Subject: RE: Tesoro Los Angeles Refinery - Plan Check Clearance within a flood zone

It was my understanding that the permit application is just for equipment pedestals.

I'd assume either we raise the height of the foundation to meet requirement or use submersible equipment.

Let us know if there is any other options  
thanks

>>> "McKenzie, Cynthia" <[cynthia.mckenzie@dhs.gov](mailto:cynthia.mckenzie@dhs.gov)> 9/21/2009 2:55 PM >>>

Hello Susan,  
There are no provisions to waive NFIP requirements for a refinery that I'm aware of. It may be that the refinery is capable of being dry floodproofed or have components that are water resistant. Is the proposed construction housing equipment only? I'm sure the equipment would need to be water resistant. There may be a way of working this, but I'll check and see if there have been similar cases elsewhere.

---

From: Susan Shu [<mailto:Susan.Shu@lacity.org>]  
Sent: Mon 9/21/2009 11:22 AM  
To: Cynthia McKenzie  
Cc: Lawrence Cuaresma; Siavosh (Sia) Poursabastian  
Subject: Tesoro Los Angeles Refinery - Plan Check Clearance within a flood zone

Cynthia,

The applicant, a refinery, is asking to be waived from flood hazard requirements. The City intends to inform them that the City will not, can not grant a waiver.

However, the applicant insists they are building foundation for equipments, there is no hazard to life. So I need more information to defend the City.

I'd like to find out if FEMA provides waiver for refinery or industrial property? especially in the Louisiana coastal area where floods is a major problem?

I'd think the City maybe willing to consider a waiver for the requirements that exceeds the FEMA's regulation (the extra 1-ft freeboard), but not the NFIP minimum requirements unless there is any exception in NFIP for industrial properties that I am not aware of.

thanks for your help in advance. Give me a call if it is easier to explain

Susan 213-485-4493

BOARD OF PUBLIC WORKS  
MEMBERS

CYNTHIA M. RUIZ  
PRESIDENT

VALERIE LYNNE SHAW  
VICE PRESIDENT

PAULA A. DANIELS  
PRESIDENT PRO TEMPORE

ERNESTO CÁRDENAS  
COMMISSIONER

JULIE GUTMAN  
COMMISSIONER

JAMES A. GIBSON  
EXECUTIVE OFFICER

CITY OF LOS ANGELES  
CALIFORNIA



ANTONIO R. VILLARAIGOSA  
MAYOR

DEPARTMENT OF  
PUBLIC WORKS

BUREAU OF  
ENGINEERING

GARY LEE MOORE, P.E.  
CITY ENGINEER

1149 S. BROADWAY ST., SUITE 700  
LOS ANGELES, CA 90015

<http://eng.lacity.org>

October 27, 2009

Tesoro Refining & Marketing Co.

Attn: William Hudak, Project Manager

2101 East Pacific Coast Highway  
Wilmington, California 90748

SUBJECT: NFIP Clearance – 2101 East Pacific Coast Highway

REFERENCE: PCIS Permit Numbers 09020-30000-01826 through 09020-30000-01832 (a total of 7 permits)

Dear Mr Hudak:

This letter is to inform you that the above referenced Permits will be cleared for National Flood Insurance Program compliance by the City. However, the City advises you that there is still a risk of flooding due to your project location within the floodplain and we recommend that your design elevation be above the Base Flood Elevation for all of your project elements.

If you have any questions regarding this matter, please contact Grant Su at (310)-732-4687.

Sincerely,

Lawrence G. Cuaresma  
District Engineer  
Harbor District

Acknowledgement Signature by

William Hudak, Project Manager  
Representative for Tesoro Refining & Marketing Co.

cc: Susan Shu, BOE  
Evan Jorgensen, Fluor – 1500 Hughes Way, Long Beach, CA. 92810

RECEIVED  
NOV 03 2009  
STREET/STORMWATER  
DIVISION

**From:** "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov>  
**To:** "Susan Shu" <Susan.Shu@lacity.org>, "Cynthia McKenzie" <cynthia.mckenzie...  
**CC:** <dmarkens@iso.com>, "Mark Casey" <Mark.Casey@lacity.org>, "Rod Tashima" ...  
**Date:** 12/26/2007 10:41 PM  
**Subject:** RE: substantial improvements

Consistency of determination and reasonableness of method is most critical, so it seems based on your information below that you could fulfill the consistency standard. If you can assure yourselves that the method of making the determination is reasonable and can support that as a basis, it can be used. The problem, generally, with using a non-itemized approach is the lack of assessment based upon the quality of replacement materials and the condition of the building prior to improvements.

Market valuation from the assessor's office can be used if there is an adjustment factor that accounts for any regulated propositions that cause the assessment to be more political than accurate.

Please let me know if you need further clarification.  
Cynthia

---

From: Susan Shu [mailto:Susan.Shu@lacity.org]  
Sent: Thu 12/20/2007 1:22 PM  
To: Cynthia McKenzie  
Cc: dmarkens@iso.com; Mark Casey; Rod Tashima; Ed Perez  
Subject: substantial improvements

Cynthia,

I have a question regarding the construction estimates that would determine if the improvements should comply with NFIP requirements.

The training manual - 2007 Flood management and duties of the local administrator, Tag Substantial improvement, page 4, indicates several Estimation Methods, one of them is the Building Inspection Departments.

Another training manual - 2007 Substantial Improvement and Substantial damage. There is a handout, titled Building valuation for projects involving Structural Non-Conformities for City of Del Mar, it contains "building valuation worksheet", and it requires itemized approach to calculate construction estimate. I was told by staff that this is the FEMA required approach for estimate.

In the City of LA, Department of building and safety (DBS) is responsible for building inspection, and they have their policy in doing construction estimates, Not itemized approach, and the City's permit fee is charged based on the estimates.

Can the City use DBS estimate to determine whether the improvement is substantial or not? even though it did not use itemized approach??

Also, can the City use County tax assessor's information to determine market value? or an independent appraisal report is required??

thanks for your help

**From:** "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov>  
**To:** "Susan Shu" <Susan.Shu@lacity.org>  
**Date:** 7/3/2007 6:35 AM  
**Subject:** RE: QUESTIONS - HARBOR

Sheila Norlin with the map mod team is the western supervisor for mapping. She's probably the best place to start.

Sheila Norlin  
(703) 317-3054  
snorlin@mbakercorp.com

-----Original Message-----

From: Susan Shu [mailto: Susan.Shu@lacity.org]  
Sent: Monday, July 02, 2007 3:34 PM  
To: Cynthia McKenzie  
Cc: Lawrence Hsu; Rod Tashima  
Subject: RE: QUESTIONS - HARBOR

Who can we contact for details in processing the LOMR for reclaimed land??

thanks

>>> "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov> 7/2/2007 8:09 AM >>>  
I spoke to Ray Lenaburg, his feeling is that you should require the LOMR.

-----Original Message-----

From: Susan Shu [mailto: Susan.Shu@lacity.org]  
Sent: Sunday, June 24, 2007 11:17 PM  
To: McKenzie, Cynthia  
Cc: 103317.ENGPO4.ENG@lacity.org; Lawrence Hsu  
Subject: RE: QUESTIONS - HARBOR

The area is inside the breakwater, so there is no waive action.  
The FIRM is either X zone for the land area, or AO zone for the water area.  
PORT has constructed berth there for loading/unloading goods, and constantly reconstruct, and relocate the berth.

We have been asking PORT to do a LOMR to cover the entire area, within breakwater, but when I start reading the instruction, I can see the complications. The PORT will continue to reclaim land, as long as USACE permit can be obtained. so Please let me know if LOMR is necessary.

thanks very much for your help  
Susan S. Shu, PE, PMP  
Stormwater Program  
Bureau of Engineering  
213-485-4493  
susan.shu@lacity.org

1149 S. Broadway, 8th Floor  
Los Angeles, CA 90015

FAX: 213-485-4839

>>> "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov> 06/24/07 10:54 PM >>>  
How the below helps.  
Cynthia

---

From: Susan Shu [mailto:Susan.Shu@lacity.org]  
Sent: Fri 6/22/2007 12:09 PM  
To: Cynthia McKenzie; Rod Tashima  
Cc: Lawrence Hsu; Mohammad Al-jamal  
Subject: RE: QUESTIONS - HARBOR

Cynthia, thanks very much for your reply. I still have more questions.

This is a Port of LA project, they want to build a permanent administration building for their tenants. They got permit from Army Corp few years ago, to expand by land reclaiming and dredging, now they are submitting the building plan to the City's Department of Building and safety for plan checking and building permit.

According to the existing FIRM, this area is zoned "AO" with BFE = 6-ft. Per proposed building plan, the proposed administration building will have a BFE (do you mean LFE, if BFE, are we talking about wave action?) of about 17 ft, and will be supported by pile system.

My questions are:

1. If the BFE is much higher than the required, can we approved the project and meet NFIP requirement? Yes, unless you have knowledge that leads you to believe the elevation is not correct. Do we need to know HOW they raised the elevation?? Unless you have specific requirements for elevating buildings, which I understood you did not. Can we just to make sure they are above the min. BFE, and leave the safety/stability concern to Licensed Structural Engineers and geotech engineer to make the call and issue building permit as well as certificate of occupancy after final inspection? Yes, that would be reasonable. We will require Elev. Cert. for record.

Just FYI, the City's Dept. of Building and safety (DBS) had given grading permit to the PORT few years ago, for the construction of reclaimed land, and testing data were required as part of the inspection process for the fill. so, the fill is a structured fill (may not be certified, depend on the certification criteria). Now, in order to issue building permit for the improvement on the reclaimed land created by fill, DBS also request soil boring data, and requested calculation for pile structure design, DBS also requested test pile to be installed to identify actual support force, before finalize the design plan approval.

2. If LOMR is required before the City can comply with FEMA requirement for this project - LA PORT tenant administration building , what is the procedure and form to be filled out. The current info online required

legal description, etc., there is no legal description for the reclaimed land, what would be the procedure to file a LOMR? There is no COUNTY recordation requirement for the newly reclaimed land, since it is not part of the state map act requirement to reclaim land and to develop the area?? I'm not sure how we would map this. I think it would be significant if the reclaimed land was abutting a V zone, but as it's an AO zone, I don't know if its necessary. I'll have to ask and get back to you, but I'm pretty sure a LOMR would not be required by us.

I try to be practical, but I want to make sure the City comply with FEMA's NFIP requirements thanks for your help.

>>> "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov> 6/21/2007 3:14 PM >>>  
see below,

-----Original Message-----

From: Rod Tashima [mailto:Rod.Tashima@lacity.org]  
Sent: Wednesday, June 13, 2007 4:42 PM  
To: McKenzie, Cynthia  
Cc: Lawrence Hsu; Mohammad Al-jamal; Susan Shu  
Subject: QUESTIONS - HARBOR

Cynthia,

We have a couple questions we'd like to run by you. If a building is raised above flooding by piles or something similar, is there a special criteria or different review they need to go through or are they automatically ok if the plans are signed & stamped by an engineer? You can accept the engineer's certification as is. Not all communities have the resources to review analyses, so it's always been considered reasonable to accept. - What if the area there in is still in need of remapping/LOMR? If there is a need for remapping due to a physical change to the floodplain, the engineering analysis would need to be provided in support of the map change under Section 65.3 of the NFIP regulations, but there would otherwise not be a LOMR requirement on our part - I assume that would be the City's requirement. Would FEMA want them bound by that also or are they ok just based on the project?

Also, if the Port of LA expanded or changed the configuration of their berths and harbor lands by land reclaiming and dredging under the review of the Army Corps, would the fill they used automatically be considered "certified?" I'll have to get back to you on this one.

Please reply back to all of us as I will be gone after today until 7/5 so Susan & Larry may continue they're discussion w/ the Port of LA.  
Thanks!

Rod Tashima, P.E.  
Stormwater Group - Advanced Planning/NFIP Bureau of Engineering - City of L.A.  
213-485-4559 work  
213-485-4838 fax

**From:** "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov>  
**To:** "Susan Shu" <Susan.Shu@lacity.org>  
**Date:** 7/2/2007 8:05 AM  
**Subject:** RE: QUESTIONS - HARBOR

I spoke to Ray Lenaburg, his feeling is that you should require the LOMR.

-----Original Message-----

**From:** Susan Shu [mailto: Susan.Shu@lacity.org]  
**Sent:** Sunday, June 24, 2007 11:17 PM  
**To:** McKenzie, Cynthia  
**Cc:** 103317.ENGPO4.ENG@lacity.org; Lawrence Hsu  
**Subject:** RE: QUESTIONS - HARBOR

The area is inside the breakwater, so there is no waive action.  
The FIRM is either X zone for the land area, or AO zone for the water area.  
PORT has constructed berth there for loading/unloading goods, and constantly reconstruct, and relocate the berth.

We have been asking PORT to do a LOMR to cover the entire area, within breakwater, but when I start reading the instruction, I can see the complications. The PORT will continue to reclaim land, as long as USACE permit can be obtained. so Please let me know if LOMR is necessary.

thanks very much for your help  
Susan S. Shu, PE, PMP  
Stormwater Program  
Bureau of Engineering  
213-485-4493  
susan.shu@lacity.org

1149 S. Broadway, 8th Floor  
Los Angeles, CA 90015  
FAX: 213-485-4839

>>> "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov> 06/24/07 10:54 PM >>>  
How the below helps.  
Cynthia

---

**From:** Susan Shu [mailto: Susan.Shu@lacity.org]  
**Sent:** Fri 6/22/2007 12:09 PM  
**To:** Cynthia McKenzie; Rod Tashima  
**Cc:** Lawrence Hsu; Mohammad Al-jamal  
**Subject:** RE: QUESTIONS - HARBOR

Cynthia, thanks very much for your reply. I still have more questions.

This is a Port of LA project, they want to build a permanent administration building for their tenants. They got permit from Army Corp few years ago, to expand by land reclaiming and dredging, now they

are submitting the building plan to the City's Department of Building and safety for plan checking and building permit.

According to the existing FIRM, this area is zoned "AO" with BFE = 6-ft. Per proposed building plan, the proposed administration building will have a BFE (do you mean LFE, if BFE, are we talking about wave action?) of about 17 ft, and will be supported by pile system.

My questions are:

1. If the BFE is much higher than the required, can we approved the project and meet NFIP requirement? Yes, unless you have knowledge that leads you to believe the elevation is not correct. Do we need to know HOW they raised the elevation?? Unless you have specific requirements for elevating buildings, which I understood you did not. Can we just to make sure they are above the min. BFE, and leave the safety/stability concern to Licensed Structural Engineers and geotech engineer to make the call and issue building permit as well as certificate of occupancy after final inspection? Yes, that would be reasonable. We will require Elev. Cert. for record.

Just FYI, the City's Dept. of Building and safety (DBS) had given grading permit to the PORT few years ago, for the construction of reclaimed land, and testing data were required as part of the inspection process for the fill. so, the fill is a structured fill (may not be certified, depend on the certification criteria). Now, in order to issue building permit for the improvement on the reclaimed land created by fill, DBS also request soil boring data, and requested calculation for pile structure design, DBS also requested test pile to be installed to identify actual support force, before finalize the design plan approval.

2. If LOMR is required before the City can comply with FEMA requirement for this project - LA PORT tenant administration building , what is the procedure and form to be filled out. The current info online required legal description, etc., there is no legal description for the reclaimed land, what would be the procedure to file a LOMR? There is no COUNTY recordation requirement for the newly reclaimed land, since it is not part of the state map act requirement to reclaim land and to develop the area?? I'm not sure how we would map this. I think it would be significant if the reclaimed land was abutting a V zone, but as it's an AO zone, I don't know if its necessary. I'll have to ask and get back to you, but I'm pretty sure a LOMR would not be required by us.

I try to be practical, but I want to make sure the City comply with FEMA's NFIP requirements thanks for your help.

>>> "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov> 6/21/2007 3:14 PM >>>  
see below,

-----Original Message-----

From: Rod Tashima [mailto:Rod.Tashima@lacity.org]  
Sent: Wednesday, June 13, 2007 4:42 PM  
To: McKenzie, Cynthia

Cc: Lawrence Hsu; Mohammad Al-jamal; Susan Shu  
Subject: QUESTIONS - HARBOR

Cynthia,

We have a couple questions we'd like to run by you. If a building is raised above flooding by piles or something similar, is there a special criteria or different review they need to go through or are they automatically ok if the plans are signed & stamped by an engineer? You can accept the engineer's certification as is. Not all communities have the resources to review analyses, so it's always been considered reasonable to accept. - What if the area there is still in need of remapping/LOMR? If there is a need for remapping due to a physical change to the floodplain, the engineering analysis would need to be provided in support of the map change under Section 65.3 of the NFIP regulations, but there would otherwise not be a LOMR requirement on our part - I assume that would be the City's requirement. Would FEMA want them bound by that also or are they ok just based on the project?

Also, if the Port of LA expanded or changed the configuration of their berths and harbor lands by land reclaiming and dredging under the review of the Army Corps, would the fill they used automatically be considered "certified?" I'll have to get back to you on this one.

Please reply back to all of us as I will be gone after today until 7/5 so Susan & Larry may continue they're discussion w/ the Port of LA.  
Thanks!

Rod Tashima, P.E.  
Stormwater Group - Advanced Planning/NFIP Bureau of Engineering - City of L.A.  
213-485-4559 work  
213-485-4838 fax

**From:** "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov>  
**To:** "Mohammad Al-jamal" <Mohammad.Al-jamal@lacity.org>, "Cynthia McKenzie" <...>  
**CC:** "Susan Shu" <Susan.Shu@lacity.org>  
**Date:** 3/19/2007 8:45 AM  
**Subject:** RE: LOMR

It wasn't the map that looked odd, rather that there wasn't more of a description of the changes and why they were made the way they were. I'm assuming, by the shape of the revised floodplain, that there is some higher ground that prevents the floodwaters flowing over the area east of Mariposa, but they state that the LOMR is being issued not on a project but topography and other analyses. I've just not seen LOMRs done this way. It may be common. However, the community reminder on page 2 of the LOMR talks about the possibility of higher standards and is intended as a signal that a community certainly has the right to impose higher standards.

Once the map is changed to X or C zone, there are no further regulatory requirements for construction, including basements, unless the City adopts higher standards.

-----Original Message-----

**From:** Mohammad Al-jamal [mailto: Mohammad.Al-jamal@lacity.org]  
**Sent:** Monday, March 19, 2007 8:20 AM  
**To:** Cynthia McKenzie; Rod Tashima  
**Cc:** Susan Shu  
**Subject:** RE: LOMR

What about if the new developments is including a subterranean parking structure beneath residential building?

>>> Rod Tashima 3/19/2007 8:07 AM >>>

So the area changed is now considered C zone? Does that sound correct? What about it looks odd to you I'm wondering?

Rod

>>> "McKenzie, Cynthia" <cynthia.mckenzie@dhs.gov> 3/19/2007 6:22 AM >>>

Looks to me like they narrowed the AO zone. I'm guessing the development is East of Mariposa Ave. The LOMR officially changes the map so it applies to existing and future developments. Sort of an oddly written LOMR!

-----Original Message-----

**From:** Rod Tashima [mailto: Rod.Tashima@lacity.org]  
**Sent:** Wednesday, March 14, 2007 5:38 PM  
**To:** McKenzie, Cynthia  
**Cc:** Susan Shu  
**Subject:** LOMR

Cynthia,

Could you please look at this LOMR and tell me how you interpret it as far as the zone designation? Thanks! Does this only apply to existing conditions or also to any improvements the developer wants to do?