



OFFICE OF THE CITY ADMINISTRATOR

Gavin Newsom, Mayor
Edwin M. Lee, City Administrator

July 11, 2008

Gregor P. Blackburn
Chief, Floodplain Management & Insurance Branch
Mitigation Division
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, California 94607

Re: San Francisco's floodplain management ordinance and
construction on or rehabilitation of existing piers in V-Zones

Dear Gregor:

This letter follows the introduction of floodplain management legislation, which will be heard by the Land Use Committee of the Board of Supervisors of the City and County of San Francisco (San Francisco) on July 21, 2008, passage of which is necessary before San Francisco may join the National Flood Insurance Program (NFIP). As previously discussed with you, the interim controls contained in this measure, if passed, will remain in place until the Federal Emergency Management Agency (FEMA) has published its Flood Insurance Rate Map (FIRM) for San Francisco. A copy of the legislation is included for your reference.

Following publication of the final FIRM, San Francisco will adopt permanent controls for floodplain management. In keeping with our earlier consultation with FEMA over the content of the draft interim control legislation, we wish to apprise FEMA of San Francisco's intended course for an additional variance in the permanent floodplain management controls to address the requirements for new construction and substantial improvements to structures on piers in coastal high hazard areas (V-Zones).

San Francisco's starting point is the December 6, 1985 FEMA memorandum, a copy of which is also attached for your reference, which indicates that construction on piers in V-Zones can be allowed as long as the pier and the structures on the pier can withstand the effects of the 100-year storm. As we understand it, the V-Zone requirements – specifically, the requirement that prohibits construction seaward of mean high tide in a V-Zone – in the NFIP regulations were developed primarily to address the construction of residences and other insurable structures on sandy barrier islands found on the East and Gulf Coasts. We do not believe that these requirements are appropriate for the San Francisco waterfront, which includes piers designed for adverse marine conditions, and where landside improvements are protected by breakwaters, seawalls and wharf structures.

Under the circumstances, San Francisco believes that engineering solutions can be developed to ensure that new and rehabilitated structures constructed in or over the water can be constructed to withstand a 100-year flood, so long as (a) the pier deck of the structure is above the 100-year flood elevation; and (b) companion engineering analysis of a proposed new or rehabilitated structure demonstrates its ability to withstand lateral forces generated by a 100-year flood. Over the next several months, Port engineers will be refining their technical analysis of the engineering standards to be incorporated into the permanent legislation. Before proceeding further along this path, however, we would like your concurrence with this approach. I will call you next week to schedule a time to discuss this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Linda Yeung', written over a circular stamp or seal.

Linda Yeung
Deputy City Administrator

Enclosures: Floodplain management ordinance
FEMA memorandum dated December 6, 1985

cc: Mayor Gavin Newsom
Edwin Lee, City Administrator
Monique Moyer, Executive Director, Port of San Francisco
John Roddy, City Attorney's Office

1 [Establishment of floodplain management programs and designation of floodplain
2 administrator.]

3 **Ordinance establishing a floodplain management program by adding Article XX,**
4 **sections 2A.280 - 2A.285 to the San Francisco Administrative Code; designating the**
5 **City Administrator as the floodplain administrator; and providing requirements for**
6 **designating floodplains and for construction and development in floodplains.**

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8 Note: All sections are new.

9 Be it ordained by the People of the City and County of San Francisco:

10 Section 1. Environmental Findings. The Planning Department has determined that the
11 actions contemplated in this Ordinance are in compliance with the California Environmental
12 Quality Act (California Public Resources Code sections 21000 et seq.). Said determination is
13 on file with the Clerk of the Board of Supervisors in File No. _____ and is
14 incorporated herein by reference.

15 Section 2. The San Francisco Administrative Code is hereby amended by adding
16 Article XX, Sections 2A.280 – 2A.285, to read as follows:

17 Sec. 2A.280. FINDINGS AND PURPOSE

18 a. The Federal Emergency Management Agency (FEMA) is in the process of
19 preparing a Flood Insurance Rate Map (FIRM) for the City and County of San Francisco. The
20 map will provide flood risk information for flood insurance and floodplain management
21 purposes under the National Flood Insurance Program (NFIP). FEMA has stated that it
22 anticipates publishing the final FIRM in early 2009.

23 b. Under the NFIP, the Federal government provides financial backing to enable
24 residents and businesses in the community to obtain affordable flood insurance in exchange
25 for the adoption of floodplain management regulations by the community participating in the

1 program. Participation in the NFIP will enable businesses and residents within flood prone
2 areas to obtain certain forms of loans and disaster assistance.

3 c. To join the NFIP, the City must adopt a Floodplain Management Ordinance that
4 would require new structures, substantial improvements and substantial damage repairs in
5 designated flood prone areas be protected against flood damage at the time of initial
6 construction, and prohibit certain uses that would increase flood hazards.

7 d. The City's joining the NFIP and adopting floodplain regulations at this time will
8 provide all City residents the opportunity to obtain flood insurance that will cover damages
9 resulting from storm-caused flooding.

10 e. The floodplain management regulations in this ordinance are consistent with the
11 NFIP requirements for communities, such as San Francisco, for which FEMA is in the process
12 of preparing but has not completed a final FIRM. When FEMA issues a final FIRM
13 designating special flood hazard areas in San Francisco, NFIP regulations require that the
14 adopted floodplain management program be reviewed and modified by authorized community
15 representatives as necessary to ensure consistency with NFIP requirements applicable to
16 communities for which FEMA has published a final FIRM.

17 f. FEMA's publication of a final FIRM for San Francisco may affect new development in
18 San Francisco, especially renovation and reuse of finger piers. This Board finds that new
19 construction on the San Francisco waterfront is an important local and state concern. The
20 San Francisco waterfront, transferred by the State of California to San Francisco in 1969, is a
21 valuable public trust asset of the State that provides special maritime, navigational,
22 recreational, cultural and historical benefits to the people of the region and the State. New
23 development, including rehabilitation of historic structures, on land that is seaward of the
24 reach of mean high tide can be reasonably safe from flooding, provided that adequate building
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1 controls are in place. In 1997, the Port of San Francisco adopted a Waterfront Land Use Plan
2 to guide development and use of the Port's waterfront property consistent with its trust
3 obligations, and in 2006 the Port created a Capital Plan identifying public facilities necessary
4 to maintaining a viable San Francisco waterfront. This Board urges the Port of San Francisco
5 and FEMA to develop, before publication of final FIRM, long-term floodplain management
6 controls that both address any flooding hazard risks and allow the City to implement the
7 Waterfront Land Use Plan and the Capital Plan, as they may be amended, and achieve the
8 goals of that Plan, including the preservation of historic piers.

9 g. The floodplain management regulations adopted by this ordinance were developed
10 by the City Administrator, in consultation with the Department of Building Inspection, the
11 Planning Department, the Department of Public Works, the Public Utilities Commission, the
12 Port of San Francisco, the San Francisco International Airport, the San Francisco
13 Redevelopment Agency and the City Attorney's Office.

14 h. The City and County of San Francisco adopts the following floodplain management
15 regulations under its authority to adopt regulations designed to promote the public health,
16 safety, and general welfare of its residents granted by Article II, sections 5 and 7 of the
17 California Constitution. Such regulations are intended to remain in effect until FEMA adopts a
18 final FIRM, at which time the City and FEMA will need to review and revise these regulations
19 under federal requirements consistent with the purposes of this ordinance.

20 i. The purpose of this ordinance is to promote the public health, safety, and general
21 welfare, and minimize public and private losses due to flood conditions in specific areas by
22 imposing provisions designed to:

- 23 1. Protect human life and health;
- 24 2. Minimize expenditure of public money for costly flood control projects;

3. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. Minimize prolonged business interruptions;
5. Minimize damage to public facilities and utilities such as water and gas mains; electric, telephone and sewer lines; and streets and bridges located in areas of special flood hazard;
6. Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future blighted areas caused by flood damage;
7. Ensure that potential buyers are notified that property is in an area of special flood hazard; and
8. Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

Sec. 2A.281. DEFINITIONS

a. "Area of special flood hazard" means the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year.

b. "Base flood" means a flood that has a one percent chance of being equaled or exceeded in any given year (also called the "100 year flood").

c. "Building" - see "Structure."

d. "Flood" or "flooding" means:

1. A general and temporary condition of partial or complete inundation of normally dry land areas from: the overflow of inland or tidal waters; the unusual and rapid accumulation or runoff of surface waters from any source; or mudslides (i.e., mudflows) which are proximately caused by flooding.

1 2. The collapse or subsidence of land along the shore of a lake or other body of
2 water as a result of erosion or undermining caused by waves or currents of water exceeding
3 anticipated cyclical levels or suddenly caused by an unusual and unforeseeable event which
4 results in flooding as defined in this definition.

5 e. "Floodplain or flood prone area" means any land area designated by the City
6 Administrator as susceptible to being inundated by 100-year flood.

7 f. "Floodplain Administrator" is the City Administrator.

8 g. "Floodplain management" means the operation of a program of corrective and
9 preventive measures for reducing flood damage and preserving and enhancing, where
10 possible, natural resources in the floodplain, including but not limited to emergency
11 preparedness plans, flood control works, floodplain management regulations, and open space
12 plans.

13 h. "Floodplain management regulations" means this ordinance and other zoning
14 ordinances, subdivision regulations, building codes, health regulations, special purpose
15 ordinances (such as grading and erosion control) and other application of police power which
16 control development in flood prone areas. This term includes applicable federal, state or local
17 regulations that provide standards for preventing and reducing flood loss and damage.

18 i. "Functionally dependent use" means a use that cannot perform its intended purpose
19 unless it is located or carried out in close proximity to water. The term includes, but is not
20 limited to, docking facilities, port facilities that are necessary for the loading and unloading of
21 cargo or passengers, and ship building and ship repair facilities,

22 j. "Historic structure" means any structure that is
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1 1. Listed individually in the National Register of Historic Places or preliminarily
2 determined by the Secretary of the Interior as meeting the requirements for individual listing
3 on the National Register;

4 2. Certified or preliminarily determined by the Secretary of the Interior as
5 contributing to the historical significance of a registered historic district or a district
6 preliminarily determined by the Secretary to qualify as a registered historic district;

7 3. Individually listed on a state inventory of historic places in states with historic
8 preservation programs which have been approved by the Secretary of Interior; or

9 4. Individually listed on a local inventory of historic places in communities with
10 historic preservation programs, including, but not limited to those structures that have been
11 certified either by an approved state program as determined by the Secretary of the Interior or
12 directly by the Secretary of the Interior in states with approved programs.

13 5. Determined to be an historic resource in accordance with the City and
14 County of San Francisco Planning Department's CEQA Review Procedures for Historic
15 Resources.

16 6. In an historic district that is listed in the National Register of Historic Places.

17 k. "New construction" means structures for which the "start of construction"
18 commenced on or after the effective date of floodplain management regulations adopted
19 pursuant to this ordinance, and includes any substantial improvements to such structures.

20 l. "One hundred year flood" or "100 year flood" means a flood that has a one percent
21 chance of being equaled or exceeded in any given year.

22 m. "Start of construction" includes substantial improvement and other proposed new
23 development and means the date the building permit was issued, provided the actual start of
24 construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement
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1 was within 180 days from the date of the permit. The actual start means either the first
2 placement of permanent construction of a structure on a site, such as the pouring of slab or
3 footings, the installation of piles, the construction of columns, or any work beyond the stage of
4 excavation. Permanent construction does not include land preparation, such as clearing,
5 grading, and filling; nor does it include the installation of streets and/or walkways; nor does it
6 include excavation for a basement, footings, piers, or foundations or the erection of temporary
7 forms; nor does it include the installation on the property of accessory buildings, such as
8 garages or sheds not occupied as dwelling units or not part of the main structure. For a
9 substantial improvement, the actual start of construction means the first alteration of any wall,
10 ceiling, floor, or other structural part of a building, whether or not that alteration affects the
11 external dimensions of the building.

12 n. "Structure" means a walled and roofed building that is principally above ground; this
13 includes a gas or liquid storage tank or a manufactured home.

14 o. "Substantial damage" means damage of any origin sustained by a structure
15 whereby the cost of restoring the structure to its before damaged condition would equal or
16 exceed 50 percent of the market value of the structure before the damage occurred. The term
17 does not include any alteration of or exterior addition to a damaged "historic structure,"
18 provided that the alteration or addition will not preclude the structure's continued designation
19 as a "historic structure."

20 p. "Substantial improvement" means any reconstruction, rehabilitation, addition, or
21 other proposed new development of a structure, the cost of which equals or exceeds 50
22 percent of the market value of the structure before the "start of construction" of the
23 improvement. This term includes structures that have incurred "substantial damage",
24 regardless of the actual repair work performed. The term does not, however, include either:
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1 1. Any project for improvement of a structure to correct existing violations or
2 state or local health, sanitary, or safety code specifications which have been identified by the
3 local code enforcement official and which are the minimum necessary to assure safe living
4 conditions, or

5 2. Any alteration of, or attached exterior addition to, an "historic structure,"
6 provided that the alteration or addition will not preclude the structure's continued designation
7 as an "historic structure."

8 Sec. 2A.282. ADMINISTRATION

9 a. FLOODPLAIN ADMINISTRATOR. The City Administrator shall be the Floodplain
10 Administrator, as defined by federal and state floodplain management laws and regulations,
11 and for purposes of the City's participation in the National Flood Insurance Program
12 administered by the United States Department of Homeland Security. The duties and
13 responsibilities of the Floodplain Administrator shall include, but not be limited to providing
14 oversight and guidance for the administration of floodplain management requirements and
15 policies; designating flood prone areas within City jurisdiction by obtaining, reviewing, and
16 reasonably using appropriate base flood data available from federal, state or other sources;
17 maintaining and updating flood prone area maps in a form sufficient for public review and use;
18 and providing floodplain management reports and information as required by applicable
19 federal, state and local requirements. The City Administrator may delegate some or all of
20 these duties and responsibilities to appropriate City staff.

21 b. As provided by Appendix D to the San Francisco Charter and in accordance with
22 Chapter 1A of the San Francisco Building Code, the Department of Building Inspection is
23 responsible for reviewing all development permit applications to determine whether the permit
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1 requirements of this ordinance have been satisfied, whether all other required state and
2 federal permits have been obtained; and whether the site is reasonably safe from flooding.

3 c. As provided by Section 4.114 of the San Francisco Charter, the San Francisco Port
4 Commission, acting by and through its Chief Harbor Engineer, is responsible for reviewing all
5 development permit applications for buildings and structures within the Port Commission's
6 jurisdiction to determine whether the permit requirements of this ordinance have been
7 satisfied, whether all other required state and federal permits have been obtained; and
8 whether the site is reasonably safe from flooding. All building standards for construction in
9 Port areas designated by the City Administrator as flood prone shall be consistent with the
10 requirements of this ordinance and applicable federal and state floodplain management
11 regulations, and shall become effective when such building standards are adopted by the Port
12 Commission.

13 d. All building standards for construction on City-owned property located outside the
14 boundaries of the City and in areas designated by FEMA as flood prone shall be consistent
15 with the requirements of this ordinance and applicable federal and state floodplain
16 management regulations. Each City department with jurisdiction over the operations and
17 maintenance of such property shall determine whether the building standards requirements of
18 this ordinance have been satisfied, whether all other required state and federal permits have
19 been obtained; and whether the site is reasonably safe from flooding.

20 Sec. 2A.283. PROVISIONS FOR FLOOD HAZARD REDUCTION

21 a. Permits. A permit or other applicable approval shall be obtained for all proposed
22 construction of buildings and structures located within a floodplain or flood prone area
23 designated as such by the City Administrator, and shall be issued in accordance with
24 applicable procedures for authorizing such construction within the appropriate City
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1 departments' jurisdiction. No building, structure or land shall be constructed, located,
2 extended, converted, or altered within a floodplain or flood prone area without full compliance
3 with the requirements of this ordinance and other applicable regulations.

4 b. Standards Of Construction.

5 1. If a proposed building site is in a flood-prone area, all new construction and
6 substantial improvements shall:

7 A. Be designed (or modified) and adequately anchored to prevent
8 flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and
9 hydrostatic loads, including the effects of buoyancy.

10 B. Be constructed:

11 i. With materials and utility equipment resistant to flood damage;

12 ii. Using methods and practices that minimize flood damage;

13 C. With electrical, heating, ventilation, plumbing and air conditioning
14 equipment and other service facilities that are designed and/or located so as to prevent water
15 from entering or accumulating within the components during conditions of flooding.

16 2. The Chief Harbor Engineer of the Port of San Francisco and the Floodplain
17 Administrator shall consult and coordinate with FEMA to create appropriate building standards
18 for developing any finger piers located in flood prone areas in Port jurisdiction, before
19 publication of FEMA's final FIRM for San Francisco. No later than October 1, 2008, the
20 Floodplain Administrator shall provide a report to the Board of Supervisors regarding the
21 creation of such building standards.

22 c. Standards For Subdivisions. If a subdivision proposal is in a flood-prone area, any
23 such proposals shall be reviewed to assure that:

1 1. All such proposals are consistent with the need to minimize flood damage
2 within the flood prone area;

3 2. All public utilities and facilities such as sewer, gas, electrical, and water
4 systems are located and constructed to minimize or eliminate flood damage; and

5 3. Adequate drainage is provided to reduce exposure to flood hazards.

6 d. Standards For Utilities. All new and replacement water supply and sanitary sewage
7 systems shall be designed to minimize or eliminate:

8 1. Infiltration of flood waters into the systems, and

9 2. Discharge from the systems into floodwaters.

10 e. Variances.

11 1. A variance from the standards provided by the section may be granted by the
12 appropriate approval authority for a parcel of property with physical characteristics so unusual
13 that complying with the requirements of this ordinance would create an exceptional hardship
14 to the applicant or the surrounding property owners. Variances shall be issued upon a
15 determination that the variance is the minimum necessary, considering the flood hazard, to
16 afford relief. Variance determinations shall include a showing of good and sufficient cause
17 that:

18 A. Failure to grant the variance would result in exceptional hardship to
19 the applicant; and

20 B. The granting of a variance will not result in increased flood heights,
21 additional threats to public safety, or extraordinary public expense, create a nuisance, cause
22 fraud and victimization of the public, or conflict with existing local laws or ordinances.

23 2. Notwithstanding subsection 2A.284(e)(1) above, variances may be issued for
24 new construction, substantial improvement, and other proposed new development to be
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1 erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with
2 existing structures constructed below the base flood level.

3 3. Notwithstanding subsection 2A.284(e)(1) above, variances shall be issued
4 for:

5 A. The repair or rehabilitation of, or exterior addition to, historic structures
6 upon a determination that the proposed repair, rehabilitation or addition will not preclude the
7 structure's continued designation as an historic structure.

8 B. New construction, substantial improvement, and other proposed new
9 development necessary for the conduct of a functionally dependent use, provided that the
10 structure or building is protected by methods that minimize flood damages, and that issuance
11 of the variance does not result in additional threats to public safety or create a public
12 nuisance.

13 Section 2A.284. LIABILITY. The degree of flood protection required by this ordinance
14 is considered reasonable for regulatory purposes and is based on scientific and engineering
15 considerations. This ordinance shall not create liability on the part of the City and County of
16 San Francisco, any officer or employee thereof, the State of California, or the Federal
17 Insurance Administration, Federal Emergency Management Agency, for any flood damages
18 that result from reliance on this ordinance or any administrative decision made hereunder.

19 Section 2A.285. SEVERABILITY. This ordinance and the various parts thereof are
20 hereby declared to be severable. Should any section of this ordinance be declared by the
21 courts to be unconstitutional or invalid, such decision shall not affect the validity of the
22 ordinance as a whole, or any portion thereof other than the section so declared to be
23 unconstitutional or invalid.

1 APPROVED AS TO FORM:
2 DENNIS J. HERRERA, City Attorney

3 By: _____
4 John Roddy
5 Deputy City Attorney
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Federal Emergency Management Agency

Washington, D.C. 20472

DEC 16 1985

MEMORANDUM FOR: ROBERT L. VICKERS
FEMA REGIONAL DIRECTOR
REGION IX

FROM : Jeffrey S. Bragg *J.S.B.*
Administrator
Federal Insurance Administration

SUBJECT : New Construction and Substantial
Improvements of Structures on Piers
in V-Zones

This is in response to your memo of October 29, 1985, regarding the issuance of variances by communities for new construction and substantial improvements of structures on piers in V-Zones. New construction on such piers can be permitted only by issuance of a variance to 44 CFR 60.3(e)(3) which requires that all new construction in V-zones be located landward of the reach of mean high tide. Substantial improvements that meet standards in §60.3(e)(4) and (5) can be permitted, but other substantial improvements would require a variance to these provisions.

In your memo you propose that communities be advised not to grant variances for new construction on piers unless the pier and the structures built on the pier can withstand the effects of the 100-year storm. You propose to apply §60.3(e)(4) to the pier itself and to require that the structure be anchored to the pier in accordance with that provision. In general, I agree that this is a reasonable position to take since it balances the economic benefits of the pier to the community against the increase in hazard and potential increases in public liabilities as a result of placing structures on a pier. However, I do have number of additional comments.

The community should regard the pier as part of the support system of the structure for the purpose of determining compliance with §60.3(e)(4) and (5). It is unlikely that the pier itself or structures on the pier will withstand a 100-year flood unless the lowest horizontal structural member of the pier is at or above the

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100-year or base flood elevation. Extreme caution must be taken in determining this elevation, since the base flood elevations shown on the FIRM may not accurately reflect wave height conditions that exist seaward of the reach of mean high tide. In addition, §60.3 (e)(5) would be applicable since obstructions below the pier deck could result in failure of the pier during more frequent events.

The Region should make it clear to the community that it is their decision to grant a variance to permit this type of construction on a pier and that FEMA neither recommends nor endorses this type of variance. If FEMA were to make any recommendation at all, it must be that all new structures be located landward of the reach of mean high tide at the landward end of the pier. This position is important since the National Flood Insurance Program (NFIP) will not insure structures entirely over water and since FEMA may not be able to justify providing disaster assistance for reconstruction of structures on the pier under some circumstances.

All variances for new construction and substantial improvements on piers must comply with NFIP variance criteria at §60.6(a) which have been incorporated into the local floodplain management measures. When FEMA reviews variances granted by a particular community to determine if they are consistent with the objectives of sound floodplain management, those same criteria are to be used. In the case of new construction on a pier in a V-zone, the applicable variance criteria are at §60.6(a)(3) and (4). Prior to issuing a variance, the community must make a formal finding that the variance would be consistent with these criteria. It is highly unlikely that a community could do so unless the equivalent of base flood protection was provided. I suggest in your discussion with these communities that you emphasize the need to comply with these variance criteria.

If you have further questions regarding this issue please contact Frank Thomas, Assistant Administrator, Office of Loss Reduction at 646-2717.