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FLOOD DAMAGE PREVENTION

Article 5. Creek Setback Requirements

Article 6. Flood Hazard Variance Procedure

6-1801 Findings of fact.

(a) The flood hazard areas of the city of Lafayette are subject to periodic inundation which could result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

(b) These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately flood proofed, elevated or otherwise protected from flood damage also contribute to the flood loss.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1802 Statement of purpose.

It is the purpose of this chapter to promote the public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specified areas by provisions designed to:

(a) Protect human life and health;

(b) Minimize expenditure of public money for costly flood-control projects;

(c) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

(d) Minimize prolonged business interruptions;

(e) 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;

(f) Help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas;

(g) Ensure that potential buyers are notified that property is in an area of special flood hazard;

(h) Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions;

(i) Protect persons and property along creek channels; and

(j) Protect the natural environment along creeks to the extent feasible.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1803 Methods of reducing flood losses.

In order to accomplish its purposes, this chapter includes methods and provisions for:

(a) Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;

(b) Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

(c) Controlling the alteration of natural floodplains, stream channels, and natural protective barriers which help accommodate or channel floodwaters;

(d) Controlling filling, grading, dredging and other development which may increase flood damage; and

(e) Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1804 Definitions.

In this chapter, unless the context otherwise requires:

"Accessory Use" means a use which is incidental and subordinate to the principal use of the parcel of land on which it is located.

"Alluvial fan" means a geomorphologic feature characterized by a cone or fan-shaped deposit of boulders, gravel, and fine sediments that have been eroded from mountain slopes, transported by flood flows, and then deposited on the valley floors, and which is subject to flash flooding, high velocity flows, debris flows, erosion, sediment movement and deposition, and channel migration.

"Apex" means the point of highest elevation on an alluvial fan, which on undisturbed fans is generally the point where the major stream that formed the fan emerges from the mountain front.

"Appeal" means a request for a review of the city engineer's interpretation of a provision of this chapter or a request for a variance.

"Area of shallow flooding" means a designated AO or AH Zone on the flood insurance rate map (FIRM). The base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Area of Special Flood Hazard. See "Special flood hazard area."

"Area of special flood-related erosion hazard" means the land within a community which is most likely to be subject to severe flood-related erosion losses. The area may be designated as Zone E on the flood insurance rate map (FIRM).

"Base flood" means the flood having a one-percent chance of being equaled or exceeded in any given year (also called the "100-year flood"). Base flood is the term used throughout this chapter.

"Basement" means any area of the building having its floor subgrade (below ground level) on all sides.

"Breakaway walls" means any walls, whether solid or lattice, and whether constructed of concrete, masonry, wood, metal, plastic or any other suitable building material, which are not part of the structural support of the building and which are designed to break away without causing any damage to the structural integrity of the building on which they are used or any buildings to which they might be carried by floodwaters. A breakaway wall shall have a safe design loading resistance of not less than ten and no more than 20 pounds per square foot. Use of breakaway walls must be certified by a registered engineer or architect and shall meet the following conditions:

(1) Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and

(2) The elevated portion of the building shall not incur any structural damage due to the effects of wind and water loads acting simultaneously in the event of the base flood.

Building. See "Structure."

Development" means any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment materials.

"Encroachment" means the advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain which may impede or alter the flow capacity of a floodplain.

"Existing manufactured home park or subdivision" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.

"Expansion to an existing manufactured home pard or subdivision" means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads.)

"Flood," "flooding" or "floodwater" 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; and/or mudslides (i.e., mudflows); and

(2) The condition resulting from flood-related erosion;

(3) The collapse or subsidence of land along a body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood, or by some similarly unusual and unforeseeable event which results in flooding as defined in this definition.

"Flood boundary and floodway map (FBFM)" means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated both the areas of flood hazards and the floodway.

"Flood hazard boundary map" means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated the areas of flood hazards.

"Flood insurance rate map (FIRM)" is the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the city.

"Flood Insurance Study" is the official report provided by the Federal Insurance Administration that includes flood profiles, the flood insurance rate map, the flood boundary and floodway map, and the water surface elevation of the base flood.

"Flood-related erosion" means the collapse or subsidence of land along the shore of a lake or other body of water as a result of undermining caused by waves or currents of water exceeding anticipated cyclical level or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood or an abnormal tidal surge, or by some similarly unusually and unforeseeable event which results in flooding.

"Flood-related erosion area" of "flood-related erosion prone area" means a land area adjoining the shore of a lake or other body of water, which due to the composition of the shoreline or bank and high water levels or wind-driven currents, is likely to suffer flood-related erosion damage.

"Flood-related erosion area management" means the operation of an overall program of corrective and preventive measures for reducing flood-related erosion damage, including but not limited to emergency preparedness plans, flood-related erosion control works, and floodplain management regulations.

"Floodplain" or "flood-prone area" means any land area susceptible to being inundated by water from any source (see definition of "Flooding").

“Floodplain administrator” means the individual appointed to administer and enforce the floodplain management regulations.

“Floodplain management” means the operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing, where possible, natural resources in the floodplain, including but not limited to emergency preparedness plans, flood control works, floodplain management regulations and open space plans.

“Floodplain management regulations” means this chapter and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as grading ordinance and erosion control ordinance) and other applications of police power which control development in flood-prone areas. This term describes such federal, state or local regulations in any combination thereof, which provide standards for the purpose of preventing and reducing flood loss and damage.

“Floodproofing” means any combination of structural and nonstructural 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. (Refer to FEMA Technical Bulletins TB 1-93, TB 3-93 and TB 7-93 for guidelines on dry and wet floodproofing.)

“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 one foot. The floodway is delineated on the flood boundary and floodway map. Also referred to as “regulatory floodway.”

“Floodway fringe” means that area of the floodplain on either side of the “regulatory floodway” where encroachment may be permitted.

“Fraud and victimization” as related to Article 6, Flood Hazard Variance Procedure, of this chapter, means that the variance granted must not cause fraud on or victimization of the public. In examining this requirement, the city council will consider the fact that every newly constructed building adds to government responsibilities and remains a part of the community for 50 to 100 years. Buildings that are permitted to be constructed below the base flood elevation are subject during all those years to increased risk of damage from floods, while future owners of the property and the community as a whole are subject to all the costs, inconvenience, danger, and suffering that those increased flood damages bring. In addition, future owners may purchase the property, unaware that it is subject to potential flood damage, and can be insured only at very high flood insurance rates.

“Functionally dependent use” means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, but does not include long-term storage or related manufacturing facilities.

“Governing body” is the local governing unit, i.e., county or municipality, that is empowered to adopt and implement regulations to provide for the public health, safety and general welfare of its citizenry.

“Hardship” as related to Article 6, Flood Hazard Variance Procedure, of this chapter means the exceptional hardship that would result from a failure to grant the requested variance. The city council requires that the variance be exceptional, unusual, and peculiar to the property involved. Mere economic or financial hardship alone is not exceptional. Inconvenience, aesthetic considerations, physical handicaps, personal preferences, or the disapproval of one's neighbors likewise cannot, as a rule, qualify as an exceptional hardship. All of these problems can be resolved through other means without granting a variance, even if the alternative is more expensive, or requires the property owner to build elsewhere or put the parcel to a different use than originally intended.

“Highest adjacent grade” means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

“Historic structure” means any structure that is:

(1) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;

(2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

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

(4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either by an approved state program as determined by the Secretary of the Interior or directly by the Secretary of the Interior in states without approved programs.

"Lowest floor" means the lowest floor of the lowest enclosed area (including basement) (see "Basement" definition).

(1) An unfinished or flood resistant enclosure below the lowest floor that is 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 no elevation design requirements of this chapter, including but not limited to:

(A) The wet flood proofing standard in Section 6-1834(d);

(B) The anchoring standards in Section 6-1832;

(C) The construction materials and methods standards in Section 6-1833; and

(D) The standards for utilities in Section 6-1836.

(2) For residential structures, all sub grade enclosed areas are prohibited as they are considered to be basements (see "Basement" definition). This prohibition includes below-grade garages and storage areas.

"Manufactured home" means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle."

"Manufactured home park or subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for sale or rent.

"Market value" shall be determined by estimating the cost to replace the structure in new condition and adjusting that cost figure by the amount of depreciation which has accrued since the structure was constructed. The cost of replacement of the structure shall be based on a square foot cost factor determined by reference to a building cost estimating guide recognized by the building construction industry. The amount of depreciation shall be determined by taking into account the age and physical deterioration of the structure and functional obsolescence as approved by the floodplain administrator, but shall not include economic or other forms of external obsolescence. Use of replacement costs or accrued depreciation factors different from those contained in recognized building cost estimating guides may be considered only if such factors are included in a report prepared by an independent professional appraiser and supported by a written explanation of the differences.

"Mean sea level" means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's flood insurance rate map are referenced.

"New construction" means, for flood management purposes, structures for which the "start of construction" commenced on or after the effective date of the ordinance codified in this chapter, and includes any subsequent improvements to such structures.

"New manufactured home park or subdivision" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the ordinance codified in this chapter.

"Obstruction" includes, but is not limited to, any dam, wall, wharf, embankment, levee, dike, pile, abutment, protection, excavation, channelization, bridge, conduit, culvert, building, wire, fence, rock,

gravel, refuse, fill, structure, vegetation or other material in, along, across or projecting into any watercourse which may alter, impede, retard or change the direction and/or velocity of the flow of water, or due to its location, its propensity to snare or collect debris carried by the flow of water, or its likelihood of being carried downstream.

One-hundred-year-flood or 100-year-flood. See "Base flood."

"Person" means an individual or his agent, firm, partnership, association or corporation, or agent of the aforementioned groups, or this state or its agencies or political subdivisions.

"Public safety and nuisance" as related to Article 6, Flood Hazard Variance Procedure, of this chapter means that the granting of a variance must not result in anything which is injurious to safety or health of an entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal or basin.

"Recreational vehicle" means a vehicle which is

(1) Built on a single chassis;

(2) 400 square feet or less when measured at the largest horizontal projection;

(3) Designed to be self-propelled or permanently towable by a light-duty truck; and

(4) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

"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 one foot.

"Remedy a violation" means to bring the structure or other development into compliance with state or local floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of this chapter or otherwise deterring future similar violations, or reducing state or federal financial exposure with regard to the structure or other development.

"Riverine" means relating to, formed by or resembling a river (including tributaries), stream, brook, etc.

Sheet Flow Area. See "Area of shallow flooding."

"Special flood hazard area (SFHA)" means an area in the floodplain subject to a one percent or greater chance of flooding in any given year. It is shown on an FHBM or FIRM as Zone A, A1 - 30, AE, AO, A99 or AH.

"Start of construction" includes substantial improvement and other proposed new development, and means the date the building permit was issued, provided, the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of a slab or footings, installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling, nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footing, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor or other structural part of a building, whether or not that alteration affects the external dimensions of the building. For a structure (other than a manufactured home) without a basement or poured footings, the "start of construction" includes the first permanent framing or assembly of the structure or any part thereof on its piling or foundation. For manufactured homes not within a manufactured home park or manufactured home subdivision, "start of construction" is the date on which the construction of facilities for serving the site on which the manufactured home is to be affixed (including, at a minimum, the construction of streets, either final site grading or the pouring of concrete pads and installation of utilities) is completed.

“Structure” means a walled and roofed building that is principally above ground; this includes a gas or liquid storage tank as well as a manufactured home;

“Substantial damage” means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

“Substantial improvement” means any reconstruction, rehabilitation, addition or other proposed new development of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the “start of construction” of the improvement. This term includes structures which have incurred “substantial damage,” regardless of the actual repair work performed. The term does not, however, include either:

(1) Any project for improvement of a structure to comply with existing state or local health, sanitary or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or

(2) Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places or designated by the city as an Historical Landmark; provided, that the alteration will not preclude the structure's continued designation as a “historic structure.”

“Variance” or “flood hazard variance” means a grant of relief from the requirements of this chapter which permits construction in a manner that would otherwise be prohibited by this chapter.

“Violation” means the failure of a structure or other development to be fully compliant with the city's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this chapter is presumed to be in violation until such time as that documentation is provided.

“Water surface elevation” means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929, (or other datum, where specified) of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

“Watercourse” means a lake, river, creek, stream, wash, arroyo, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur. (Ord. 512 § 1 (Appx. A (part)), 2000)

Article 2. Applications

6-1811 Lands to which this chapter applies.

This chapter applies to all areas of special flood hazards within the jurisdiction of the city of Lafayette, California. (Ord. 512 § 1 (Appx. A (part)), 2000)

6-1812 Basis for establishing the areas of special flood hazard.

The areas of special flood hazard identified by the Federal Insurance Administration (FIA) of the Federal Emergency Management Agency (FEMA) in the “Flood Insurance Study — City of Lafayette, California, Contra Costa County,” (FIS) dated July 2, 1987, and accompanying flood insurance rate map (FIRMs) and flood boundary and floodway maps (FBFMs), dated July 25, 1988, and all subsequent amendments and/or revisions, are adopted by reference and declared to be a part of this chapter. This FIS and attendant mapping is the minimum area of applicability of this chapter and may be supplemented by studies for other areas which allow implementation of this chapter and which are recommended to the city council by the floodplain administrator. The flood insurance study, FIRMs and FBFMs are on file at the City Office, 3675 Mt. Diablo Blvd., Suite 210, Lafayette, CA 94549. (Ord. 512 § 1 (Appx. A (part)), 2000)

6-1813 Compliance.

No structure or land shall hereafter be constructed, located, extended, converted or altered without full compliance with the terms of this chapter and other applicable regulations. Violations of the

provisions of this chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Nothing herein shall prevent the city council of the city from taking such lawful action as is necessary to prevent or remedy any violation. (Ord. 512 § 1 (Appx. A (part)), 2000)

6-1814 Abrogation and greater restrictions.

This chapter is not intended to repeal, abrogate or impair existing easements, covenants or deed restrictions. However, where this chapter and other ordinance, easement, covenant or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail. (Ord. 512 § 1 (Appx. A (part)), 2000)

6-1815 Interpretation.

In the interpretation and application of this chapter, all provisions shall be:

(a) Considered as minimum requirements;

(b) Liberally construed in favor of the governing body; and

(c) Deemed neither to limit nor repeal any other powers granted under state statutes.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1816 Warning and disclaimer of liability.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the city of Lafayette, any officer or employee thereof, the state of California, or the Federal Insurance Administration, Federal Emergency Management Agency for flood damage that results from reliance on this chapter or an administrative decision lawfully made hereunder. (Ord. 512 § 1 (Appx. A (part)), 2000)

6-1817 Sever ability.

This chapter and the various parts thereof are declared to be sever able. Should any section of this chapter be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the chapter as a whole, or any portion thereof other than the section so declared to be unconstitutional or invalid. (Ord. 512 § 1 (Appx. A (part)), 2000)

Article 3. Administration

6-1821 Establishment of development permit.

A development permit must be obtained before construction or development begins within any area of special flood hazard established in Section 6-1812. Application for a development permit shall be made on forms furnished by the city engineer and may include, but not be limited to: plans in duplicate drawn to scale showing the nature, location, dimensions and elevation of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing. Specifically, the following information is required:

(a) Site plan, including but not limited to:

(1) For all proposed structures, spot ground elevations at building corners and 20-foot or smaller intervals along the foundation footprint, or one foot contour elevations throughout the building site; and

(2) Proposed locations of water supply, sanitary sewer and utilities; and

(3) If available, the base flood elevation from the flood insurance study and/or flood insurance rate map; and

(4) If applicable, the location of the regulatory floodway; and

(b) Foundation design detail, including but not limited to:

(1) Proposed elevation, in relation to mean sea level, of the lowest floor (including basement) of all structures;

(2) For a crawl-space foundation, location and total net area of foundation openings as required in Section 6-1834(d) and FEMA Technical Bulletins 1-93 and 7-93; and

(3) For foundations placed on fill, the location and height of fill, and compaction requirements (compacted to 95 percent using the Standard Proctor Test method); and

(c) Proposed elevation, in relation to mean sea level, to which any nonresidential structure will be flood proofed as required in Section 6-1834(c) and FEMA Technical Bulletin TB 3-93;

(d) All appropriate certifications listed in Section 6-1823(c) of this chapter; and

(e) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1822 Designation of the floodplain administrator.

The Lafayette city engineer is appointed to administer, implement and enforce this chapter by granting or denying development permit applications in accordance with its provisions. (Ord. 512 § 1 (Appx. A (part)), 2000)

6-1823 Duties and responsibilities of the floodplain administrator.

The duties of the floodplain administrator include but are not limited to:

(a) Permit Review. Review of development permits to determine that:

(1) The permit requirements of this chapter are satisfied;

(2) All other required state and federal permits have been obtained;

(3) The site is reasonably safe from flooding; and

(4) The proposed development does not adversely affect the carrying capacity of areas where base flood elevations have been determined but a floodway has not been designated. For purposes of this chapter, "adversely affects" means that the cumulative effect of the proposed development when combined with all other existing and anticipated development will increase the water surface elevation of the base flood more than one foot at any point.

(b) Review, Use, and Development of Other Base Flood Data.

(1) When base flood elevation data has not been provided in accordance with Section 6-1812, "Basis for establishing the areas of special flood hazard," the city engineer shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal or state agency, or other source, in order to administer Article 4 of this chapter. Any such information shall be submitted to the city council of the city for adoption.

(2) If no base flood elevation data is available from a federal or state agency or other source, then a base flood elevation shall be obtained using one of two methods from the FEMA publication "Managing Floodplain Development in Approximate Zone A Areas - A Guide for Obtaining the Developing Base (100-year) Flood Elevations" dated July 1995 in order to administer Article 4:

(A) Simplified Method.

(i) 100 year or base flood discharge shall be obtained using the appropriate regression equation found in a U.S. Geological Survey publication, or the discharge-drainage area method; and

(ii) Base flood elevation shall be obtained using the Quick-2 computer program developed by FEMA; or

(B) Detailed Method.

(i) 100 year or base flood discharge shall be obtained using the U.S. Army Corps of Engineers' HEC-HMS computer program; and

(ii) Base flood elevation shall be obtained using the U.S. Army Corps of Engineers' HEC-RAS computer program.

(c) Information to be Obtained and Maintained. The city engineer shall obtain and maintain for public inspection and make available as needed the following:

(1) The certified elevation required in Section 6-1834(a) and (b), and Section 6-1838 (Lowest-floor elevations);

(2) The flood proofing certification required in Section 6-1834(c) (Elevation or flood proofing of nonresidential structures);

(3) The certification required in Section 6- 1834(d) (Wet flood proofing standard);

(4) The certification required in Section 6-1837(b) (Subdivision standards);

(5) The certification required in Section 6-1839(a) (Floodway encroachments);

(6) The certification required in Section 6-1834(a), (b), or (c) (Elevations in areas of shallow flooding).

(d) Alteration of Watercourses. Whenever a watercourse is to be altered or relocated, the city engineer shall:

(1) Notify adjacent communities and the California Department of Water Resources prior to any alteration or relocation of a watercourse,

(2) Submit evidence of such notification to the Federal Insurance Administration, Federal Emergency Management Agency; and

(3) Require that the flood-carrying capacity of the altered or relocated portion of such watercourse is maintained.

(e) Interpretation of FIRM Boundaries. The city engineer shall make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazard. Where there appears to be a conflict between a mapped boundary and actual field conditions, grade and base flood elevations shall be used to determine the boundaries of the special flood hazard area. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 6-1852(b).

(f) Take action to remedy violations of this chapter as specified in Section 6-1813 of this chapter.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1824 Interpretation.

Where uncertainty exists regarding the interpretation of a provision of this chapter or its application to a specific site, the city engineer shall determine the intent of the provision. The city council shall hear and decide appeals when it is alleged there is an error in any requirement, decision or determination made by the floodplain administrator in the enforcement or administration of this chapter. (Ord. 512 § 1 (Appx. A (part)), 2000)

Article 4. Standards for Flood Hazard Reduction

6-1831 Applications.

In all areas of special flood hazards the standards set forth in this article are required. (Ord. 512 § 1 (Appx. A (part)), 2000)

6-1832 Anchoring.

(a) All new construction and substantial improvements shall be adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

(b) All manufactured homes shall meet the anchoring standards of Section 6-1838.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1833 Construction materials and methods.

(a) All new construction and substantial improvements shall be constructed:

(1) With flood resistant materials as specified in FEMA Technical Bulletin TB 2-93, and utility equipment resistant to flood damage;

(2) Using methods and practices that minimize flood damage;

(3) With electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding; and if

(4) Within Zone AO or Zone AH, adequate drainage paths shall be provided around structures on slopes to guide floodwaters around and away from proposed structures.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1834 Elevation and floodproofing.

(See Section 6-1804 definitions for "basement," "lowest floor," "new construction," "substantial damage" and "substantial improvement".)

(a) Residential construction, in cases of new or complete reconstruction, shall have the lowest floor, including basement,

(1) In an AO zone, elevated above the highest adjacent grade to a height exceeding the depth number specified in feet on the FIRM by at least two feet, or elevated at least four feet above the highest adjacent grade if no depth number is specified.

(2) In an A zone, elevated at least two feet above the base flood elevation, as determined by the community; the base flood elevation shall be determined by one of the methods in Section 6-1823(b).

(3) In all other zones, elevated at least two feet above the base flood elevation.

Upon completion of the structure, the elevation of the lowest floor including the basement shall be certified by a registered professional engineer or surveyor, and verified by the community building inspector, to be properly elevated. Such certification and verification shall be provided to the city engineer.

(b) Residential construction, in cases of substantial improvement, shall have the lowest floor, including basement:

(1) In an AO zone, elevated above the highest adjacent grade to a height equal to or exceeding the depth number specified in feet on the FIRM, or elevated at least two feet above the highest adjacent grade if no depth number is specified.

(2) In an A zone, elevated to or above the base flood elevation; said base flood elevation shall be determined by one of the methods in Section 6-1823(b).

(3) In all other zones, elevated to or above the base flood elevation.

Upon completion of the structure, the elevation of the lowest floor including the basement shall be certified by a registered professional engineer or surveyor, and verified by the community building inspector, to be properly elevated. Such certification and verification shall be provided to the city engineer.

(c) Nonresidential construction, new or substantial improvement, shall either be elevated in conformance with Section 6-1834(a) or (b), together with attendant utility and sanitary facilities:

(1) Be flood proofed so that below the elevation recommended in Section 6-1834(a) or (b), the structure is watertight with walls substantially impermeable to the passage of water;

(2) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

(3) Be certified by a registered professional engineer or architect that the standards of Section 6-1834(c) are satisfied. Such certifications shall be provided to the city engineer.

(d) All new construction and substantial improvements, fully enclosed areas below the lowest floor (excluding basement) that are usable solely for parking of vehicles, building access or storage, and which are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement shall follow the guidelines in FEMA Technical Bulletins TB 1-93 and TB 7-93, and must exceed the following minimum criteria:

(1) A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters; or

(2) Be certified by a registered professional engineer or architect.

(e) Manufactured homes shall meet the standards in this section and also the standards in Section 6-1838.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1835 Standards for storage of materials and equipment.

(a) The storage or processing of materials that are in time of flooding buoyant, flammable or explosive or could be injurious to human, animal or plant life is prohibited.

(b) Storage of other material or equipment may be allowed if not subject to major damage by floods and firmly anchored to prevent flotation or if readily removable from the area within the time available after flood warning.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1836 Standards for utilities.

(a) All new and replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate:

(1) Infiltration of floodwaters into the system, and

(2) Discharge from systems into floodwaters.

(b) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1837 Standards for subdivisions.

(a) All preliminary subdivision proposals shall identify the flood hazard area and the elevation of the base flood.

(b) All subdivision plans will provide the elevation of proposed structure(s) and pad(s). If the site is filled above the base flood elevation, the lowest floor and pad elevations shall be certified by a registered professional engineer or surveyor and shall be provided to the city engineer.

(c) All subdivision proposals shall be consistent with the need to minimize flood damage.

(d) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.

(e) All subdivision proposals shall provide adequate drainage to reduce exposure to flood hazards.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1838 Standards for manufactured homes and recreational vehicles.

(a) All manufactured homes that are placed or substantially improved, within Zones A1 - 30, AH and AE on the community's flood insurance rate map, on sites located:

(1) Outside of a manufactured home park or subdivision;

(2) In a new manufactured home park or subdivision;

(3) In an expansion to an existing manufactured home park or subdivision; or

(4) In an existing manufactured home park or subdivision on a site upon which a manufactured home has incurred "substantial damage" as the result of a flood,

shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated:

(1) At least two feet above the base flood elevation for cases of new placement; or

(2) At least above the base flood elevation for cases of substantial improvement;

and be securely fastened to an adequately anchored foundation system to resist flotation, collapse and lateral movement.

(b) All manufactured homes to be placed or substantially improved on sites in an existing manufactured home park or subdivision within zones A1 - 30, AH and AE, on the community's flood insurance rate map that are not subject to the provisions of paragraph Section 6-1838(a) will be securely fastened to an adequately anchored foundation system to resist flotation, collapse, and lateral movement, and be elevated so that either the

(1) Lowest floor of the manufactured home is:

(A) At least two feet above the base flood elevation for new placement; or

(B) At least above the base flood elevation for substantial improvement; or

(2) Manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade.

(c) Upon the completion of the structure, the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor, and verified by the community building inspector to be properly elevated. Such certification and verification shall be provided to the floodplain administrator.

(d) All recreational vehicles placed on sites within zones A1 - 30, AH and AE on the community's flood insurance rate map will either:

(1) Be on the site for fewer than 180 consecutive days, and be fully licensed and ready for highway use; a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or

(2) Meet the permit requirements of Article 3 of this chapter and the elevation and anchoring requirements for manufactured homes in Section 6-838(a).

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1839 Floodways.

Located within areas of special flood hazard established in Section 6-1812 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply.

(a) Encroachment, including fill, new construction, substantial improvements, and other new development is prohibited, unless certification by a registered professional engineer is provided demonstrating that the encroachment will not result in any increase in (the base) flood elevation during the occurrence of the base flood discharge.

(b) No manufactured home may be placed in a floodway.

(c) If Section 6-1839(a) is satisfied, all new construction, substantial improvements, and other proposed new development shall comply with all applicable flood hazard reduction provisions of this article.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1840 Flood-related erosion-prone area.

Flood-related erosion-prone areas in Lafayette are typically creeks and should comply with Article 5 of this chapter. (Ord. 512 § 1 (Appx. A (part)), 2000)

Article 5. Creek Setback Requirements

6-1841 Structure setback.

(a) As defined by Section 6-312 and Section 6-355, buildings and structures shall be set back from an unimproved creek channel as follows:

(1) Channel Depth of Zero through 21 Feet. If the side slopes of the channel are steeper than 2:1 (horizontal:vertical), the width of the structure setback is determined by a line measured from the toe of the slope a distance of twice the channel depth plus the appropriate top-of-bank setback as follows:

Channel Depth (Feet)	**Top of Bank Setback Minimum Width (Feet)**
0 — 6	12 each side
6 — 12	15 each side
12 — 18	18 each side
18 — 21	21 each side

If the side slopes of the channel are flatter than 2:1 (horizontal:vertical) the structure setback is the appropriate setback indicated in the table above, measured from the top of the bank.

(2) Channel Depth Exceeding 21 Feet. If the depth of a channel exceeds 21 feet, the width of the structure setback is determined by measuring from the toe of the slope a distance of three times the channel depth.

(b) If a parcel is subject to subdivision easements or setback requirements under Contra Costa County Ordinance Code Sections 914-14.002 through 14.014 which are inconsistent with Section 6-1841(a), those subdivision requirements control.

(c) No permanent structure other than fences and drainage and erosion protection improvements may be constructed within the setback area. Landscaping (including trees and shrubs) is permitted within the setback area.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1842 Exception.

(a) The city engineer may approve exceptions to the requirements of Section 6-1841 to allow construction of structures within the setback area if:

(1) The submitted materials under Section 6-1842(c) are complete and adequate; and

(2) The property owner agrees to enter into and record an agreement holding the city and other public agencies harmless in the event of flood or erosion damage. The agreement shall bind successors in interest and be in a form acceptable to the city attorney.

(b) In approving an exception, the city engineer may impose conditions deemed necessary for Creekside erosion protection and on-site drainage.

(c) A person requesting an exception under this section shall submit to the city engineer:

(1) A topographical survey of the lot precisely showing the creek bottom, sides, top of bank and proposed and existing structures;

(2) A soils report prepared by a licensed civil engineer specializing in soils analysis which describes the soils condition for the proposed structure and analyzes and makes recommendations as to the creek bank stability and erosion hazard; and

(3) Certification signed by the engineer who prepares the soils report that in the professional opinion of the engineer there is no likelihood of a hazard to persons or property resulting from the proposed construction.

(d) The decision of the city engineer may be appealed in to the city council as provided in Section 6-1852(b).

(Ord. 512 § 1 (Appx. A (part)), 2000)

Article 6. Flood Hazard Variance Procedure

6-1851 Nature of variances.

The variance criteria set forth in this section are based on the general principle of zoning law that variances pertain to a piece of property and are not personal in nature. A variance may be granted for a parcel of property with physical characteristics so unusual that complying with the requirements of this chapter would create an exceptional hardship to the applicant or the surrounding property owners. The characteristics must be unique to the property and not be shared by adjacent parcels. The unique characteristic must pertain to the land itself, not to the structure, its inhabitants, or the property owners.

It is the duty of the city council to help protect its citizens from flooding. This need is so compelling and the implications of the cost of insuring a structure built below flood level are so serious that variances from the flood elevation or from other requirements in the flood ordinance are quite rare. The long term goal of preventing and reducing flood loss and damage can only be met if variances are strictly limited. Therefore, the variance guidelines provided in this chapter are more detailed and contain multiple provisions that must be met before a variance can be properly granted. The criteria are designed to screen out those situations in which alternatives other than a variance are more appropriate. (Ord. 512 § 1 (Appx. A (part)), 2000)

6-1852 Appeals.

(a) The city council shall hear and decide appeals and requests for flood hazard variances from the requirements of this chapter. The city council shall hold a public hearing on an application for a flood hazard variance. The notice required for the public hearing is the same as the notice required for a variance permit under Section 6-211 of this title. The city engineer shall give notice of the public hearing for a flood hazard variance.

(b) The city council shall hear and decide appeals when it is alleged there is an error in a requirement, decision or determination made by the city engineer in the enforcement or administration of this chapter. Such appeals must be made in writing to the city council within fourteen calendar days of written notice of the city engineer's action.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1853 Standards for review.

In passing upon an application for a flood hazard variance under this chapter, the city council shall consider all the technical evaluations, all relevant factors, standards specified in other sections of this code, and:

(a) The danger that materials may be swept onto other lands to the injury of others;

(b) The danger to life and property due to flooding or erosion damage;

(c) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner and future owners of the property;

(d) The importance of the services provided by the proposed facility to the community;

(e) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;

(f) The compatibility of the proposed use with existing and anticipated development;

(g) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;

(h) The safety of access to the property in times of flood for ordinary and emergency vehicles;

(i) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters, if applicable, expected at the site;

(j) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water system, and streets and bridges; and

(k) The necessity to the facility of a waterfront location, where applicable.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1854 Issuance of flood hazard variances.

(a) A flood hazard variance may be issued for new construction, substantial improvements and other proposed new development to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing the standards in Section 6-1853 are fully considered. As the lot size increases beyond one-half acre, the technical justification required for issuing the flood hazard variance increases.

(b) Upon consideration of the factors of Section 6-1853 and the purposes of this chapter, the city council may attach such conditions to the granting of flood hazard variances as it considers necessary to further the purposes of this chapter.

(c) The city engineer shall maintain the records of flood hazard variance actions, including justification for their issuance, and report any approved flood hazard variances to the Federal Insurance Administration, Federal Emergency Management Agency upon request.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1855 Conditions for issuance of flood hazard variances.

(a) A flood hazard variance may be issued for the reconstruction, rehabilitation or restoration of a structure listed on the National Register of Historic Places, the state Inventory of Historic Places, or the Lafayette historic landmark ordinance upon a

determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as an historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.

(b) A flood hazard variance shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

(c) A flood hazard variance shall only be issued upon a determination that the flood hazard variance is the minimum necessary, considering the flood hazard, to afford relief. "Minimum necessary" means to afford with a minimum of deviation from the requirements of this chapter. For example, in the case of variances to an elevation requirement, this means the city council need not grant permission for the applicant to build at grade, or even to whatever elevation the applicant proposes, but only to that elevation which the city council believes will both provide relief and preserve the integrity of the local ordinance.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1856 Showing necessity for flood hazard variance.

(a) A flood hazard variance shall only be issued upon:

(1) A showing of good and sufficient cause;

(2) A determination that failure to grant the flood hazard variance would result in exceptional hardship (as defined in Section 6-1804) to the applicant; and

(3) A determination that the granting of a flood hazard variance will not result in increased flood heights, additional threats to public safety or extraordinary public expense, create nuisances (as defined in Section 6-1804) under "Public safety or nuisance"), cause fraud on or victimization of the public (as defined in Section 6-1804), or conflict with existing local laws or ordinances.

(b) Flood hazard variances may be issued for new construction, substantial improvements, and for other proposed new development necessary for the conduct of a functionally dependent use provided that the provisions of this section and Section 6-1855 are satisfied and that the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety and does not create a public nuisance.

(Ord. 512 § 1 (Appx. A (part)), 2000)

6-1857 Information to accompany flood hazard variance.

(a) An applicant to whom a flood hazard variance is granted shall be given written notice over the signature of a community official that:

(1) The structure will be permitted to be built with a lowest floor elevation below the regulatory flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation; and

(2) Such construction below the base flood level increases risks to life and property.

(b) A copy of the notice shall be recorded by the city clerk in the office of the Contra Costa County recorder and shall be recorded in a manner so that it appears in the chain of title of the affected parcel of land.

(Ord. 512 § 1 (Appx. A (part)), 2000)