

REPORT

To the Honorable Mayor and City Council
From the City Manager

November 22, 2004

Subject

Ordinance Amendment – Floodplain Management

Recommendation

Introduce an Ordinance amending Chapter 41 of the Municipal Code: Floodplain Management.

Background

Certain parts of the City are subject to periodic inundation which results in property damage and disruption of public services. These areas of potential inundation are shown on Flood Maps produced by the Federal Emergency Management Administration (FEMA), and are kept on file in the City's offices. The purpose of the Flood Management Program is to minimize the amount of damage to public and private facilities due to flooding, by providing requirements for new construction in those low-lying areas.

The flood maps, and the management program itself, is monitored by FEMA, which is now under the Department of Homeland Security. FEMA visits every community on an annual basis to monitor its National Flood Insurance Program (NFIP), of which the City of Redwood City is a participant. Without this participation, the City's residents would have to obtain very expensive flood insurance for their homes.

On a recent visit to the City in July of this year, the FEMA representative met with the City Engineer (the designated floodplain administrator) and staff to review the Program and the City's Ordinance. The report we received was complimentary in the way the staff is managing the program, particularly with the new developments, such as Marina Shores Village, Abbott Labs, and Bayside Gardens. All three of these projects are located in a floodplain. Under the Program, all these projects will be required to build their structures at an elevation above the floodplain elevation. In addition, a levee, or levee wall, would have to be constructed around the perimeter of these projects. The new levees would tie into levees already constructed by other developers in the area, thus completing the ring of protection around the Bay Lands.

The only action required by the FEMA inspectors as a result of their visit, is that the City needs to update its Floodplain Management Ordinance. This update is necessary for the City to continue its participation in the NFIP. FEMA has provided a model ordinance for us to follow, and adopting this amendment, is a prerequisite for continual participation in the NFIP.

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The ordinance, among other things, requires the Administrator to insure that all new buildings in the floodplain be raised above the elevation of the base flood, which in Redwood City is Elevation 7, based on mean sea level. If the building cannot be raised, then the structure has to be flood-proofed by FEMA standards, and the owner needs to provide flood insurance. Minor modifications in the new ordinance were added to provide for a variance procedure, and an appeals process.

Alternative

The City must comply with the regulations and statutes governing flood protection, and comply with standards as established by federal and State law. There is no practical alternative to meet this mandate.

Fiscal Impact

The implementation of the Order will not have any impact on the City's budget. The City will continue, as it always has, to administer the program.

		
Jon K. Lynch City Engineer	Joel Patterson Community Development Services Director	Ed Everett City Manager

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ORDINANCE NO. _____

ORDINANCE AMENDING CHAPTER 41 OF THE REDWOOD CITY MUNICIPAL CODE RELATING TO FLOODPLAIN MANAGEMENT

THE COUNCIL OF THE CITY OF REDWOOD CITY DOES ORDAIN AS FOLLOWS:

SECTION 1. Chapter 41 (Floodplain Management) of the Redwood City Municipal Code is hereby amended in its entirety to read as follows:

"CHAPTER 41

FLOODPLAIN MANAGEMENT

- Art. I. IN GENERAL**
- Art. II. DEFINITIONS**
- Art. III. GENERAL PROVISIONS**
- Art. IV. ADMINISTRATION**
- Art. V. PROVISIONS FOR FLOOD HAZARD REDUCTION**
- Art. VI. VARIANCE PROCEDURE**

ARTICLE I. IN GENERAL

Sec. 41.1.1. **TITLE:** This Chapter shall be known as the "Floodplain Management Ordinance of the City of Redwood City."

Sec. 41.1.2. **STATUTORY AUTHORIZATION:** The Legislature of the State of California has in Government Code Sections 65302, 65560 and 65800 conferred upon local government authority to adopt regulations designed to promote the public health, safety and general welfare of its citizenry. Therefore, the City Council of the City of Redwood City does hereby adopt the following floodplain management ordinance.

Sec. 41.1.3. **FINDINGS OF FACT:**

- A. The flood hazard areas of Redwood City are subject to periodic inundation which results in the 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 uses that are inadequately elevated, flood-proofed, or protected from flood damage. The cumulative effect of

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obstructions in areas of special flood hazards which increases flood heights and velocities also contribute to the flood loss.

Sec. 41.1.4. **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 specific areas by provisions designed to:

- A. Protect human life and health;
- B. Minimize the 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 sound use and development of areas of special flood hazard so as to minimize future blighted areas caused by flood damage;
- G. Ensure that potential buyers are notified that property is in an area of special flood hazard; and
- H. Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

Sec. 41.1.5. **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 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 floodwaters or which may increase flood hazards in other areas.

ARTICLE II. DEFINITIONS

Sec. 41.2.1. **DEFINITIONS:** Unless specifically defined in this Article, words or phrases used in this Chapter shall be interpreted so as to give them the

meaning they have in common usage and to give this Chapter its most reasonable application.

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 eroded from mountain slopes, transported by flood flows, and then deposited on the valley floors, and which is subject to flash flooding, height 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 emerged from the mountain front.

APPEAL means a request for a review of the Floodplain Administrator's interpretation of any provision of this Chapter.

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 SHALLOW FLOOD HAZARD – See "Special flood hazard zone."

BASE FLOOD means a flood having a one percent (1%) 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 (i.e., below ground level on all sides).

BREAKAWAY WALLS are any type of walls, whether solid or lattice, and whether constructed of concrete, masonry, wood, metal, plastic or any other suitable building material which is not part of the structural support of the building and which is designed to break away under abnormally high tides or wave action 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 (10) and no more than twenty (20) pounds per square foot. Use of breakaway walls must be certified by a registered engineer or architect and shall meet the following conditions:

- A. Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and

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- B. 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.”

COASTAL HIGH HAZARD AREA means an area of special flood hazard extending from offshore to the inland limit of primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. It is an area subject to high velocity waters, including coastal and tidal inundations or tsunamis. The area is designated on a Flood Insurance Rate Map (FIRM) as Zone V1-V30, VE or V.

DEVELOPMENT means any man-made change to improved or unimproved real estate including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavating or drilling operations or storage of equipment or 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 PARK 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 FLOOD WATERS means:

- A. 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
- B. The condition resulting from flood-related erosion.

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 special 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) means 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 community.

FLOOD INSURANCE STUDY means 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.

FLOODPLAIN or **FLOOD-PRONE AREA** means any land area susceptible to being inundated by water from any source (see definition of "flooding").

FLOODPLAIN ADMINISTRATOR is the position established to administer and enforce this Chapter.

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 ordinances and regulations, building codes, health regulations, special purpose ordinances (such as grading and erosion control) and other applications of police power which control development in flood-prone areas. This term describes federal, state or local statutes, ordinances and regulations in any combination thereof which provide standards for 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.

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 (1') (also referred to as the "Regulatory Floodway").

FLOODWAY FRINGE is the area of the floodplain on either side of the "Regulatory Floodway" where encroachment may be permitted.

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FRAUD AND VICTIMIZATION, as related to Article VI 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 fifty (50) to one hundred (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 insurance rates.

FUNCTIONALLY DEPENDANT 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, port facilities that are necessary for the loading and unloading of cargo or passengers and shipbuilding and ship building and ship repair facilities, and does not include long-term storage or related manufacturing facilities.

GOVERNING BODY is the City Council of the City of Redwood City that is empowered to adopt and implement ordinances and regulations to provide for the public health, safety and general welfare of its citizenry.

HARDSHIP, as related to Article VI (Variances) 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 specific property involved. Each of the following conditions, standing alone, shall not constitute exceptional hardship:

- A. Inconvenience;
- B. Aesthetic considerations;
- C. Physical handicaps;
- D. Property owner preferences; or
- E. Disapproval of neighboring property owners.
- F. Economic/Financial hardship

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:

- A. 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.
- B. 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.

- C. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior.
- D. 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.

LEVEE means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control or divert the flow of water so as to provide protection from temporary flooding.

LEVEE SYSTEM means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accord with sound engineering practices.

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

- A. 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 it conforms to applicable non-elevation design requirements as included in this Chapter and includes, but is not limited to:
 - (1) Wet floodproofing;
 - (2) Anchoring;
 - (3) Standard construction materials and methods;
 - (4) Standards for utilities.
- B. For residential structures, all subgrade 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 attached 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 (2) 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 the 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

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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 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, for floodplain management purposes, means structures for which the "start of construction" commenced on or after the effective date of this Chapter and includes any subsequent improvements to such structures.

NEWLY 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 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" definition.

PUBLIC SAFETY AND NUISANCE, as related to Article VI 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 of use, in the customary manner, of any navigable lake, or river, bay, stream, canal or basin.

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 statutes, ordinances or regulations or, if this is not possible, to reduce the impacts of its noncompliance. Impacts may be reduced by including protection of the structure or other affected development from flood damage, implementing the enforcement provisions of the applicable statute, ordinance or regulation, or otherwise deterring future similar

violations, or reducing State or Federal or local 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” definition.

SPECIAL FLOOD HAZARD AREA (SFHA) means an area in the floodplain subject to a one percent (1%) or greater chance of flooding in any given year. It is shown on an FHBM or FIRM as Zone A, O or V.

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 from the date of the permit.

- A. 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, the 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.
- B. Permanent construction does not include land preparation such as clearing, grading and filling, installation of streets and/or walkways, excavation for a basement, footings, piers or foundations or the erection of temporary forms, installation on the property of accessory buildings such as garages or sheds not occupied as dwelling units or not part of the main structure.
- C. 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.

STRUCTURE means a walled and roofed building that is principally above ground, including gas or liquid storage tank or 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 fifty percent (50%) 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 fifty percent (50%) 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 include either:

- A. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by

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the local code enforcement official and which are the minimum necessary to assure safe living conditions; or

- B. Any alteration of a "historic structure," provided that the alteration will not preclude the structure's continued designation as a "historic structure."

V ZONE – see "Coastal High Hazard Area" definition.

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 this Chapter. 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 floodplain of coastal or riverine areas.

WATERCOURSE means the 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.

ARTICLE III. GENERAL PROVISIONS

Sec. 41.3.1. **LANDS TO WHICH THIS CHAPTER APPLIES:** This Chapter shall apply to all areas of special flood hazards within the jurisdiction of the City of Redwood City.

Sec. 41.3.2. **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 (FIS) dated November 17, 1981, and accompanying Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs) dated May 17, 1982, and all subsequent amendments and/or revisions, are hereby 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 Floodplain Administrator. The study, FIRMs and FBFMs are on file in the office of the City Engineer, 1017 Middlefield Road, Redwood City, California.

Sec. 41.3.3. **COMPLIANCE:** No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the term of this Chapter and other applicable regulations. Violation of the requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Nothing herein shall prevent the City

Council from taking such lawful action as is necessary to prevent or remedy any violation.

Sec. 41.3.4. ABROGATION AND GREATER RESTRICTIONS: This Chapter is not intended to repeal, abrogate, or impair any existing easement, covenant, or deed restriction. However, where this Chapter and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

Sec. 41.3.5. 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 City Council; and
- C. Deemed neither to limit nor repeal any other powers granted under state statutes.

Sec. 41.3.6. 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 man-made 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 damage. This Chapter shall not create liability on the part of the City of Redwood City, or any of its officials, officers, agents or employees, or the State of California, or the Federal Insurance Administration, Federal Emergency Management Agency, for any flood damage that may result from reliance on this Chapter or any administrative decision lawfully made hereunder.

Sec. 41.3.7. SEVERABILITY: This Chapter and the various parts thereof are hereby declared to be severable. Should any section of this Chapter be declared unconstitutional or invalid by any court of law having competent jurisdiction thereof, 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.

ARTICLE IV. ADMINISTRATION

Sec. 41.4.1. DESIGNATION OF THE FLOODPLAIN ADMINISTRATOR: The City Engineer is hereby appointed to administer, implement and enforce this Chapter by granting or denying development permits in accordance with its provisions.

Sec. 41.4.2. DUTIES AND RESPONSIBILITIES OF THE FLOODPLAIN ADMINISTRATOR: The duties and responsibilities of the Floodplain Administrator shall include, but not be limited to, the following:

- A. Permit Review. Review all development permits to determine that:
 - (1) Permit requirements of this Chapter have been satisfied;

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- (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: When base flood elevation data has not been provided in accordance with Section 41.3.2, the Floodplain Administrator 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 V. Any such information shall be submitted to the City Council for adoption.
- C. Notification of Other Agencies. In alteration or relocation of a watercourse:
- (1) Notify adjacent communities and the California Department of Water Resources prior to alteration or relocation;
 - (2) Submit evidence of such notification to the Federal Insurance Administration and Federal Emergency Management Agency; and
 - (3) Assure that the flood carrying capacity within the altered or relocated portion of said watercourse is maintained.
- D. Documentation of Floodplain Development. Obtain and maintain for public inspection and make available as needed the following:
- (1) Certification required by Section 41.5.1.C(1) (lowest floor elevations).
 - (2) Certification required by Section 41.5.1.C(2) (elevation or floodproofing of nonresidential structures).
 - (3) Certification of elevation required by Section 41.5.1.C(3) (wet floodproofing standard).
 - (4) Certification of elevation required by Section 41.5.3 (subdivision standards).
 - (5) Certification required by Section 41.5.5 (floodway encroachments).
- E. Map Determinations. 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 Article V.
- F. Remedial Action. Take action to remedy violations of this Chapter as specified in Section 41.3.3.

Sec. 41.4.3. APPEALS: The City Council of the City of Redwood City shall hear and decide appeals when it is alleged there is an error in any requirement,

decision, or determination by the Floodplain Administrator in the enforcement or administration of this Chapter.

ARTICLE V. PROVISIONS FOR FLOOD HAZARD REDUCTION

Sec. 41.5.1. STANDARDS OF CONSTRUCTION: In all areas of special flood hazards, the following standards are required:

- A. Anchoring.
 - (1) 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.
 - (2) All manufactured homes shall meet the anchoring standards to Section 41.5.3.
- B. Construction materials and methods. All new construction and substantial improvements shall be constructed:
 - (1) With flood resistant materials as specified in FEMA Technical Bulletin No. 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 and accumulating within the components during conditions of flooding.
- C. Elevation and floodproofing. (See Article II., Definitions for "basement," "lowest floor," "new construction," and "substantial improvement.")
 - (1) Residential construction, new or substantial improvement, shall have the lowest floor, including basement elevated above the highest 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. Upon 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 City's building inspector to be properly elevated. Such certification and verification shall be provided to the Floodplain Administrator.
 - (2) Nonresidential construction, new or substantial improvement, shall either be elevated to conform to Section 41.5.1.C(1) or together with attendant utility and sanitary facilities, or:
 - a. Be floodproofed below the elevation recommended under Section 41.5.1.C(1) so that the structure is watertight with walls substantially impermeable to the passage of water;
 - b. Have structural components capable of resisting hydrostatic and hydrodynamic loss and effects of buoyancy; and
 - c. Be certified by a registered professional engineer or architect that the standards of this subsection (41.5.1.C(2)) are

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satisfied. Such certification shall be provided to the Floodplain Administrator.

- (3) All new construction and substantial improvement with fully enclosed areas below the lowest floor (excluding basements) 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 floodwater. Designs for meeting this requirement must exceed the following minimum criteria:
 - (a) Have 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. 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 floodwater; or
 - (b) Be certified by a registered professional engineer or architect.
- (4) Manufactured homes shall also meet the standards in Section 41.5.4.

Sec. 41.5.2. STANDARDS FOR UTILITIES:

- A. All new and replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate:
 - (1) Infiltration of flood waters into the systems; and
 - (2) Discharge from the systems into flood waters.
- B. On-site waste disposal systems shall be located to avoid impairment to them, or contamination from them during flooding.

Sec. 41.5.3. STANDARDS FOR SUBDIVISIONS:

- A. All preliminary subdivision proposals shall identify the special 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 provided to the Floodplain Administrator.
- 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 shall provide adequate drainage to reduce exposure to flood hazards.

Sec. 41.5.4. STANDARDS FOR MANUFACTURED HOMES: All manufactured homes that are placed or substantially improved shall be elevated on a

permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation and be securely fastened to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

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 City's building inspector to be properly elevated. Such certification and verification shall be provided to the Floodplain Administrator.

Sec. 41.5.5. FLOODWAYS: Located within areas of special flood hazard established in Section 41.3.2, are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters, which carry debris, potential projectiles, and erosion potential, the following provisions apply:

- A. Prohibit encroachments, including fill, new construction, substantial improvement, and other new development unless certification by a registered professional engineer is provided demonstrating that encroachments shall not result in any increase in the base flood elevation during the occurrence of the base flood discharge.
- B. If section 41.5.5.A., above, is satisfied, all new construction, substantial improvement, and other proposed new development shall comply with all other applicable flood hazard reduction provisions of Article III.

Sec. 41.5.6 COASTAL HIGH HAZARD AREAS: Within coastal high hazard areas as established under Section 41.3.2, the following standards shall apply:

- A. All new construction and substantial improvement shall be elevated on adequately anchored pilings or columns and securely anchored to such pilings or columns so that the lowest horizontal portion of the structural members of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood level. The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse, and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable state or local building standards.
- B. All new construction and other development shall be located on the landward side of the reach of mean high tide.
- C. All new construction and substantial improvement shall have the space below the lowest floor free of obstructions or constructed with breakaway walls as defined in Article II of this ordinance. Such enclosed space shall not be used for human habitation and will be usable solely for parking of vehicles, building access or storage.
- D. Fill shall not be used for structural support of buildings.
- E. Man-made alteration of sand dunes which would increase potential flood damage is prohibited.
- F. The Floodplain Administrator shall obtain and maintain the following records:

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- (1) Certification by a registered engineer or architect that a proposed structure complies with Section 41.5.6.A;
- (2) The elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings or columns) of all new and substantially improved structures, and whether such structures contain a basement.

ARTICLE VI. VARIANCE PROCEDURE

Sec. 41.6.1. NATURE OF VARIANCES: The issuance of a variance is for flood plain management purposes only. The variance criteria set forth in this Article VI are based on the general principle of zoning law that variances pertain to specific parcels 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 to surrounding properties. The characteristics must be unique to the property and not be shared by adjacent parcels. The unique characteristics must pertain to the land itself, not to the structure, its inhabitants or the property owners.

It is the responsibility of the City Council to help protect its citizens from flooding. The 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 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.

Sec. 41.6.2. APPEAL BOARD: In passing upon requests for variances, the City Council shall consider all technical evaluations, all relevant factors, standards specified in other sections of this Chapter, and the:

- A. Danger that materials may be swept onto other lands to the injury of others;
- B. Danger of life and property due to flooding or erosion damage;
- C. Susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the existing individual owner and future owners of the property;
- D. Importance of the services provided by the proposed facility to the community;
- E. Necessity to the facility of waterfront location, where applicable;
- F. Availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
- G. Compatibility of the proposed use with existing and anticipated development;

- H. Relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
- I. Safety of access to the property in time of flood for ordinary and emergency vehicles.
- J. Expected heights, velocity, duration, rate of rise, and sediment transport of flood waters expected at the site; and
- K. 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.

Sec. 41.6.3. **CONDITIONS FOR VARIANCES:**

- A. Generally, variances may be issued for new construction, substantial improvement, 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 that the procedures of Articles IV and V of this Chapter have been fully considered. As the lot size increases beyond one-half acre, the technical justification required for issuing the variance increases.
- B. Variances may be issued for the repair or rehabilitation of "historic structures" (as defined in Article II of this Chapter) upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
- C. Variances shall not be issued within any mapped regulatory floodway if any increase in flood levels during the base flood discharge would result.
- D. Variances shall only be issued upon a determination that the variance is the "minimum necessary" considering the flood hazard, to afford relief. "Minimum necessary" means to afford relief 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 this Chapter.
- E. Any applicant to whom a variance is granted shall be given written notice over the signature of the Administrator that:
 - (1) The issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage; and
 - (2) Such construction below the base flood level increase the risk to life and property. It is recommended that a copy of the notice shall be recorded by the Floodplain Administrator in the Office of the San Mateo County Recorder and shall be recorded in a manner so that it appears in the chain of title of the affect parcel of land.

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- F. The Floodplain Administrator will maintain a record of all variance actions, including justification for their issuance, and report such variances issued in its biennial report submitted to the Federal Insurance Administration, Federal Emergency Management Agency.
- G. Variances shall only be issued upon:
 - (1) A showing of good and sufficient cause;
 - (2) A determination that failure to grant the variance would result in "exceptional hardship" (as defined in Article II of this Chapter) to the applicant; and
 - (3) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, or extraordinary public expense, create a nuisance (as defined in Article II – see "Public Safety" and Nuisance") cause fraud or victimization (as defined in Article II) of the public, or conflict with existing local laws or ordinances.
- H. Variances may be issued for new construction, substantial improvement, and other proposed new development necessary for the conduct of a functionally dependent use provided that the provisions of Sections 41.6.3.A through 41.6.3.E are satisfied and that the structure or other development is protected by methods that minimize flood damage during the base flood and does not result in additional threats to public safety and does not create a public nuisance.
- I. Upon consideration of the factors of Section 41.6.2.A and for the purposes of this Chapter, the City Council may attach such conditions to the granting of variances as it deems necessary to further the purposes of this Chapter.

SECTION 2. This ordinance shall be effective thirty (30) days from the date of its adoption.

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