

## Appendix I

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Hydrology and Water Quality Report

23 January 2019

**FINAL**



HYDROLOGY AND WATER QUALITY REPORT

IN SUPPORT OF THE PROGRAM ENVIRONMENTAL IMPACT REPORT FOR

## **KEARNY MESA COMMUNITY PLAN UPDATE**

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WCC Project No.: 117003-01



## **HYDROLOGY AND WATER QUALITY REPORT**

IN SUPPORT OF THE PROGRAM ENVIRONMENTAL IMPACT REPORT FOR

KEANY MESA COMMUNITY PLAN UPDATE

CITY OF SAN DIEGO

SAN DIEGO COUNTY, CALIFORNIA

JOB NUMBER: 117003-01



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- D Excerpts from 2014 and 2016 California Clean Water Act Section 303d List
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## 1.0 INTRODUCTION

This report describes drainage and storm water quality conditions within the Community of Kearny Mesa in the City of San Diego, California. The Kearny Mesa Community includes approximately 4,423 acres (or 6.9 square miles) and is bounded by State Route 52 (SR-52) in the north, by Interstate 805 (I-805) in the west, by Interstate 15 (I-15) in the east, and properties lying to the south of Aero Drive and properties extending to Friars Road along the western edge of I-15 in the south, in the City of San Diego. See Attachment A for location of the Kearny Mesa Community. This report is in support of the Programmatic Environmental Impact Report (PEIR) for the Kearny Mesa Community Plan Update (KMCPU). The KMCPU will update land use policies in order to create a plan for future development within the Community.

In general, storm water runoff from a majority of Kearny Mesa drains in three directions. In the north, storm water drains to the San Clemente Creek and eventually drains into Rose Creek which drains to Mission Bay. In the west, storm water drains to Tecolote Creek which drains to Mission Bay. In the southeast, storm water drains to Murphy Canyon Creek, which eventually drains into the lower San Diego River. Storm water flows from the San Diego River and Mission Bay are ultimately discharged into the Pacific Ocean.

The storm water drainage analysis, Section 2.0, provides a qualitative description of local existing runoff patterns within Kearny Mesa. The storm water quality analysis, Section 3.0, provides a qualitative description of local existing storm water quality, receiving water characteristics, and sensitivity of the receiving waters. Section 4.0 describes current regulations, policies and programs applicable to storm water drainage, floodplain management, and storm water quality in the City of San Diego that will dictate design criteria and standards for development within Kearny Mesa. Section 5.0 provides a qualitative description of drainage patterns within the region along with the factors contributing to water quality. Section 6.0 discusses recommendations for future projects stemming from the proposed community plan update.

## 2.0 EXISTING DRAINAGE CONDITIONS

The Kearny Mesa Community can be subdivided into three (3) Drainage Basins: San Clemente Creek, Tecolote Creek, and Murphy Canyon Creek. Attachment B contains a Regional Drainage Map, which identifies the three (3) Drainage Basins along with the locations of existing channels and major outfalls, to display storm water conveyance from each basin.

### 2.1 Local (On-Site/Off-Site) Drainage

Kearny Mesa is mostly developed and is highly impervious. Most rainfall can be expected to become runoff because there are minimal opportunities for infiltration. Typical runoff response from highly impervious areas is flashy with high peak flow rates for short durations. Storm water runoff originating in Kearny Mesa is conveyed to the receiving waters via streets, gutters, cross gutters, open channels, creeks, and storm drain systems. Provided below is a summary of each drainage basin.

#### San Clemente Creek Basin

Storm water runoff within the approximately 867-acre basin in the northwest portion of the Kearny Mesa area is conveyed via surface flow, storm drains, channels, and creeks to San Clemente Creek. San Clemente Creek flows westerly and connects into Rose Creek near the Interstate-5 and SR-52 Interchange. Rose Creek flows southwesterly and discharges into Mission Bay as displayed in Attachment B.

#### Tecolote Creek Basin

Storm water runoff within the approximately 405-acre basin in the western portion of the Kearny Mesa area is conveyed via surface flow, storm drains, channels, and creeks to Tecolote Creek. Tecolote Creek flows southwesterly and discharges into Mission Bay as displayed in Attachment B.

#### Murphy Canyon Creek Basin

Storm water runoff within the approximately 3,150-acre basin in the remaining portion of the Kearny Mesa area is conveyed via surface flow, storm drains, channels, and creeks southeast towards Murphy Canyon Creek, which runs parallel to I-15. Murphy Canyon Creek travels in a southerly direction and discharges into the San Diego River as displayed in Attachment B.

### 2.2 Floodplains

Kearny Mesa has been studied and documented by the Federal Emergency Management Agency (FEMA). An exhibit showing FEMA Flood Zones and copies of FIRMettes, which show portions of the Flood Insurance Rate Maps (FIRM) Panels that include the Kearny Mesa Community, are included in Attachment C.

The Kearny Mesa Community is located in the City of San Diego, Community Number 060295D on the FIRMs, and appears on FIRM Panels: 06073C1608G, 06073C1628H, and 06073C1636H.

Based on FEMA, most of Kearny Mesa is clear of any flood zones. However, there are small portions of the southeastern drainage region of Kearny Mesa that lie within the floodway. The

majority of the floodway runs parallel to I-15, starting at Clairemont Mesa Boulevard and extending south until Friars Road; this stretch includes sections in Zone A as well as Zone AE. The base flood elevations in this floodway vary from 88 feet to 210 feet.

## 3.0 EXISTING WATER QUALITY CONDITIONS

### 3.1 Local (“On-Site”) Storm Water Quality

Kearny Mesa land uses include a mixture of residential, commercial business, industrial uses, warehousing, transportation, communications, utilities, governmental agencies / institutional, park, and open spaces. Typical pollutants that can be expected from these land uses include sediment, nutrients, heavy metals, organic compounds, trash and debris, oxygen demanding substances, oil and grease, bacteria and viruses, and pesticides.

Storm water runoff originating in Kearny Mesa is conveyed via streets, gutters, cross gutters, creeks, and storm drain systems resulting in little to no opportunity for infiltration for much of the area. Thus, pollutants in this runoff may reach receiving waters. Areas with additional pollutant protection for storm water runoff include, industrial sites that have implemented best management practices required by the Industrial Storm Water General Permit or individual waste discharge requirements (WDRs) issued by the California Regional Water Quality Control Board San Diego Region (SDRWQCB), and development projects, classified as “Priority Development Projects”, constructed since the City of San Diego adopted their Storm Water Standards Manual.

### 3.2 Receiving Waters

The receiving waters for the Kearny Mesa Community include, San Clemente Creek, Rose Creek, Tecolote Creek, Murphy Canyon Creek, the San Diego River, Mission Bay, and the Pacific Ocean. According to the “Water Quality Control Plan for the San Diego Basin (9)” (1994 and amendments) (herein referred to as the “Basin Plan”), the project is located in the following hydrologic basin planning areas:

- 906.40: Penasquitos Hydrologic Unit (906), Miramar Hydrologic Area (.4). Rose Creek is in this hydrologic basin planning area.
- 906.50: Penasquitos Hydrologic Unit (906), Tecolote Hydrologic Area (.5). Tecolote Creek is in this hydrologic basin planning area.
- 907.11: San Diego Hydrologic Unit (907), Lower San Diego Hydrologic Area (.1). Mission San Diego Hydrologic Sub Area (.11). Murphy Canyon Creek is in this hydrologic basin planning area.
- 907.11: San Diego Hydrologic Unit (907), Lower San Diego Hydrologic Area (.1), Mission San Diego Hydrologic Sub Area (.11). The Lower San Diego River is in this hydrologic basin planning area.

#### 3.2.1 Beneficial Uses of Receiving Waters

Beneficial uses are the uses of water necessary for the survival or wellbeing of humans, plants and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals of humankind. Water quality objectives and beneficial uses can be found in the Basin Plan.



#### Beneficial Uses for San Clemente Canyon

Based on the Basin Plan, the following beneficial uses have been identified for the San Clemente Canyon in Hydrologic Basin Number 906.40: Contact Water Recreation, Non-contact Water Recreation, Warm Freshwater Habitat, Cold Freshwater Habitat, Wildlife Habitat, Rare, Threatened, or Endangered Species, Spawning, Reproduction, and/or Early Development are existing beneficial uses. Industrial Service Supply is a potential beneficial use. These inland surface waters are excluded from the Municipal and Domestic Supply beneficial use.

#### Beneficial Uses for Rose Canyon

Based on the Basin Plan, the following beneficial uses have been identified for Rose Canyon in Hydrologic Basin Number 906.40: Contact Water Recreation, Non-contact Water Recreation, Warm Freshwater Habitat, and Wildlife Habitat are existing beneficial uses. Industrial Service Supply is a potential beneficial use. These inland surface waters are excluded from the Municipal and Domestic Supply beneficial use.

#### Beneficial Uses for Tecolote Creek

Based on the Basin Plan, the following beneficial uses have been identified for Tecolote Creek in Hydrologic Basin Number 906.50: Non-contact Water Recreation, Warm Freshwater Habitat, and Wildlife Habitat are existing beneficial uses. Contact Water Recreation is a potential beneficial use. These inland surface waters are excluded from the Municipal and Domestic Supply beneficial use.

#### Beneficial Uses for Murphy Canyon

Based on the Basin Plan, the following beneficial uses have been identified for Murphy Canyon in Hydrologic Basin Number 907.11: Agricultural Supply, Industrial Service Supply, Contact Water Recreation, Non-contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat, and Rare, Threatened, or Endangered Species, are existing beneficial uses. These inland surface waters are excluded from the Municipal and Domestic Supply beneficial use.

#### Beneficial Uses for the San Diego River

Based on the Basin Plan, the following beneficial uses have been identified for the San Diego River in Hydrologic Basin Number 907.11: Agricultural Supply, Industrial Service Supply, Contact Water Recreation, Non-contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat, and Rare, Threatened, or Endangered Species, are existing beneficial uses. These inland surface waters are excluded from the Municipal and Domestic Supply beneficial use.

#### Beneficial Uses for Mission Bay

Based on the Basin Plan, the following beneficial uses have been identified for Mission Bay: Industrial Service Supply, Contact Water Recreation, Non-contact Water Recreation, Commercial and Sport Fishing, Estuarine Habitat, Wildlife Habitat, Rare, Threatened, or Endangered Species, Marine Habitat, Migration of Aquatic Organisms, Spawning, Reproduction, and/or Early Development, and Shellfish Harvesting are existing beneficial uses.

### Beneficial Uses for Pacific Ocean

Based on the Basin Plan, the following beneficial uses have been identified for Pacific Ocean: Industrial Service Supply, Navigation, Contact Water Recreation, Non-contact Water Recreation, Commercial and Sport Fishing, Preservation of Biological Habitats of Special Significance, Wildlife Habitat, Rare, Threatened, or Endangered Species, Marine Habitat, Aquaculture, Migration of Aquatic Organisms, Spawning, Reproduction, and/or Early Development, and Shellfish Harvesting are existing beneficial uses.

### **3.2.2 303(d) List**

Under Section 303(d) of the 1972 Clean Water Act, states, territories and authorized tribes are required to develop a list of water quality limited segments. These waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that the above-mentioned jurisdictions establish priority rankings for water on the lists and develop action plans, called Total Maximum Daily Loads (TMDLs), to improve water quality.

Numerous studies of receiving water quality and sediment quality in San Diego Bay have been performed by several agencies, and the studies have found that beneficial uses are impacted by the existing water quality conditions. As a result the receiving waters have been listed for several pollutants and TMDLs are in place or in progress. The 2014 and 2016 California Integrated Report Clean Water Act Section 303(d) and 305(b), dated October 3, 2017 is the most current adopted report lists the impaired waters requiring TMDLs. Excerpts from the list pertaining to the receiving water for Kearney Mesa are included in Attachment D.

### **3.2.3 TMDL Status**

A TMDL is a quantitative assessment of water quality problems, contributing sources, and load reductions or control actions needed to restore and protect bodies of water. TMDLs are adopted as amendments to the Basin Plan. The following is the status of existing and planned TMDLs for receiving waters that storm water runoff from the Kearny Mesa Community drains into.

#### TMDLs Adopted and Being Implemented

Currently, there are no adopted TMDLs that are being implemented for Rose Creek. There are 3 TMDLs that are adopted and being implemented into Tecolote Creek (Resolution No. 2010-0064) for Enterococcus Bacteria, Fecal Coliform, and Total Coliform. There are also 3 TMDLs that are adopted and being implemented into the Lower San Diego River (Resolution No. 2010-0064) for Enterococcus Bacteria, Fecal Coliform, and Total Coliform.

#### TMDLs Adopted and Pending Implementation

There are no TMDLs that have been adopted and that are pending implementation for Rose Creek

#### TMDLs Currently Being Developed

There is no TMDL data that has been recorded by the EPA for Rose Creek at this time.

More information regarding the TMDLs for Tecolote Creek and the Lower San Diego River can be found via the link provided below:

[https://ofmpub.epa.gov/waters10/attains\\_state.control?p\\_state=CA](https://ofmpub.epa.gov/waters10/attains_state.control?p_state=CA)

## **4.0 CURRENT REGULATIONS, POLICIES AND PROGRAMS**

This Section discusses existing policies and regulations that apply to drainage, floodplain management and water quality in the City of San Diego. Development projects in the Kearny Mesa Community will be subject to requirements and design criteria outlined in these policies and regulations.

### **4.1 Drainage**

Pursuant to San Diego Municipal Code Chapter 14 Article 2 Division 2, Storm Water Runoff and Drainage Regulations, drainage regulations apply to all development in the City of San Diego, whether or not a permit or other approval is required.

Drainage design policies and procedures for the City of San Diego are given in the City of San Diego's "Drainage Design Manual," dated January 2017 (Drainage Design Manual), which is incorporated in the Land Development Manual as Appendix B. The Land Development Manual provides information to assist in the processing and review of applications. The Drainage Design Manual provides a guide for designing drainage and drainage-related facilities for developments within the City of San Diego. Chapter 1 of the Drainage Design Manual outlines basic policies and objectives. Subsequent Chapters provide design criteria. Development projects in the Kearny Mesa Community will be required to adhere to these existing criteria.

The City of San Diego is responsible for reviewing hydrologic and hydraulic studies and design features for conformance to criteria given in the Drainage Design Manual for every map or permit for which development approval is sought from the City of San Diego.

### **4.2 Floodplain Management**

The National Flood Insurance Program (NFIP) is a Federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods. Participation in the NFIP is based on an agreement between local communities and the Federal Government that states if a Community will adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction in Special Flood Hazard Areas (SFHA), the Federal Government will make flood insurance available within the Community as a financial protection against flood losses.

In support of the NFIP, FEMA identifies flood hazard areas throughout the United States and its territories by producing Flood Hazard Boundary Maps (FHBMs), FIRMs, and Flood Boundary & Floodway Maps (FBFMs). Several areas of flood hazards are commonly identified on these maps. One of these areas is the Special Flood Hazard Area (SFHA) or high risk area defined as any land that would be inundated by the 100-year flood – the flood having a 1-percent chance of occurring in any given year (also referred to as the base flood). See Attachment C of this document for the SFHAs within the Kearny Mesa Community. Development may take place

within the Special Flood Hazard Areas (SFHA), provided that development complies with local floodplain management ordinances, which must meet the minimum Federal requirements.

The City of San Diego is a participating Community in the NFIP. Therefore, the City of San Diego is responsible to adopt a floodplain management ordinance that meets certain minimum requirements intended to reduce future flood losses. The City of San Diego has adopted Development Regulations for SFHA in the San Diego Municipal Code Sections 143.0145 and 143.0146. Each proposed development within a SFHA Zones will be subject to these existing regulations. A copy of the regulations is included in Attachment E.

#### **4.3 Storm Water Quality**

Pursuant to Section 402 of the Clean Water Act (CWA), the EPA has established regulations under the National Pollutant Discharge Elimination System (NPDES) program to control direct storm water discharges. In California, the State Water Resources Control Board (SWRCB) administers the NPDES permitting programs and is responsible for developing waste discharge requirements. The California Regional Water Quality Control Board San Diego Region (SDRWQCB) also is responsible for developing waste discharge requirements specific to its jurisdiction.

General waste discharge requirements that will directly apply to design and construction of development projects within the Kearny Mesa Community, at the authoring of this report will include:

##### General Construction Permit

SWRCB Order No. 2009-0009-DWQ NPDES General Permit No. CAS000002 Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit), adopted September 2, 2009. The permit was previously amended by Order No. 2010-0014-DWQ and then again by Order No. 2012-0006-DWQ. The General Construction Permit is due to be reissued. This permit may be reissued several times during the life of the Kearny Mesa Community Plan.

During the construction phase, any development project that is 1 acre or greater in size, or that is less than 1 acre in size but is part of a larger common plan of development, will be subject to the requirements of the General Construction Permit, or a future SWRCB Order re-issuing the General Construction Permit. The General Construction Permit was adopted by the SWRCB on September 2, 2009, and is due to be reissued. The permit was amended by Order No. 2010-0014-DWQ and then again by Order No. 2012-0006-DWQ. For coverage by the General Construction Permit, the project owner is required to submit to the SWRCB a Notice of Intent (NOI) to comply with the General Construction Permit, and develop and implement a Storm Water Pollution Prevention Plan (SWPPP) describing best management practices (BMPs) to be used during and after construction to prevent the discharge of sediment and other pollutants in storm water runoff from the project.

Projects less than one acre in size, and not part of a larger common plan of development, are not subject to the requirements of the General Construction Permit. However, in the City of San Diego, construction storm water requirements apply to all new development and development activities based on the City of San Diego's Storm Water Management and Discharge Control Ordinance (San Diego Municipal Code Section 43.03, et. seq.). Projects less than one acre are required to have a Water Pollution Control Plan (WPCP) which identifies the pollution prevention measures that will be taken.

#### Regional Municipal Separate Storm Sewer System (MS4) Permit

SDRWQCB regulates discharges from municipal separate storm sewer systems (MS4s) in the San Diego Region under the Regional MS4 Permit. The Regional MS4 Permit covers the City of San Diego and other municipal government and special district entities (referred to jointly as Copermittees) located in San Diego County, southern Orange County, and southwestern Riverside County who own and operate large MS4s which discharge storm water (wet weather) runoff and non-storm water (dry weather) runoff to surface waters throughout the San Diego Region. The Regional MS4 Permit, Order No. R9-2013-0001, was adopted on May 8, 2013 and has been twice amended (Order No. R9-2015-0001 and Order No. R9-2015-0100). The SDRWQCB has begun the development of proposed changes to the Regional MS4 Permit. The Regional MS4 Permit expired on June 27, 2018, but remains in effect under an administrative extension until it is reissued by the SDRWQCB, expected in late 2019.

The most recent permit, required the City of San Diego and the other 20 municipal agencies in San Diego County to prepare both jurisdictional and watershed scale plans that detail how they will comply with the new requirements. The City updated its Jurisdictional Runoff Management Plan (JRMP) in January 2018 and has participated in the development of Water Quality Improvement Plans (WQIP) for six Watershed Management Areas (WMA). The WQIPs that apply to the Kearney Mesa Community include, San Diego River and Mission Bay / La Jolla.

The San Diego River WQIP was adopted in 2016 with the purpose of guiding the Participating Agencies' jurisdictional programs to achieve goals associated with improved water quality in the San Diego River WMA. The highest priority water quality condition was identified as Bacteria and goals and strategies were developed by each Participating Agency to reduce Bacteria and other pollutant loading. The City's goals include meeting numeric targets for dry weather and wet weather bacteria loading, as well as implement green infrastructure features on all suitable City projects.

The Mission Bay / La Jolla WQIP was adopted in 2016 with the purpose of guiding the Participating Agencies' jurisdictional programs to achieve goals associated with improved water quality in the Mission Bay / La Jolla WMA. The highest priority water quality condition was identified as high bacteria levels in creeks, bacteria accumulations at beaches, and erosion and sediment in Area of Special Biological Significance near La Jolla. Goals and strategies were developed by each Participating Agency to reduce Bacteria and other pollutant loading. The

City's goals include preventing further degradation of water quality within the water shed to protect creeks and beaches from pollution and reducing bacteria levels in Tecolote Creek.

#### City of San Diego Storm Water Standards

The City of San Diego's maintains a Storm Water Standards Manual (SWSM) as Appendix O of the Land Development Manual. The City periodically updates the SWSM and the current edition is dated October 1, 2018. The SWSM provides information to project applicants on how to comply with the permanent and construction storm water quality requirements in the City of San Diego. Significant elements of the SWSM, which are based on requirements of the MS4 Permit, that dictate design elements in development and redevelopment projects include:

- **Low Impact Development (LID) BMP Requirements** (Order No. 2013-0001 Section E.12.e, Storm Water Standards Manual Section 2.1.1.3)
- **Source Control BMPs** (Order No. 2013-0001 Section E.12.d, Storm Water Standards Manual Section 2.1.1.2)
- **BMPs Applicable to Individual Priority Development Project Categories** (Order No. 2013-0001 Section E.3.a, E.3.b, and E.3.c, Storm Water Standards Manual Section 6)
- **Treatment Control BMPs** (Order No. 2007-0001 Section D.1.d.(6), Storm Water Standards Manual Section III.B.4)

Note: If retention BMPs are determined infeasible, then biofiltration BMPs may be allowed. Furthermore, if biofiltration BMPs are determined infeasible, then the Priority Development Projects may be allowed to use flow-thru treatment control BMPs, provided that an off-site alternative compliance project is available.

LID BMPs will be significant to site planning because these features require area on-site to retain storm water for infiltration, re-use, or evaporation. The SWSM states, "For Priority Development Projects, the feasible portion of the post-project runoff volumes and peak flows from the water quality design storm ... shall be infiltrated on-site. If it is shown to be infeasible to infiltrate the requisite volume of water, that water may be retained on-site for re-use or evapotranspiration. If it is shown to be infeasible to retain the requisite volume of water, then that water must be treated with treatment control BMPs." Although the footprint of the LID BMPs can often be fit in to planned landscaping features, this requires early planning to ensure that the features are located in places where they can intercept the drainage and safely store the water without adverse effects to adjacent slopes, structures, roadways or other features.

Hydromodification management plan (HMP) requirements will dictate design elements in locations where downstream channels are susceptible to erosion from increases in storm water runoff discharge rates and durations. Hydromodification is addressed in the 2018 Storm Water Standards Manual (Section 2.3.2) as well as in the applicable WQIPs.

Appendix D Section 2.0 of the "Storm Water Standards Manual," describes the City of San Diego's construction storm water BMP standards, which will apply during the construction of



development projects in the Kearny Mesa Community. This provides minimum requirements for construction site management, inspection and maintenance of construction BMPs, monitoring of the weather and implementation of emergency plans as needed, and provides minimum performance standards including: pollution prevention measures so that [there will be] no measurable increase of pollution (including sediment) in runoff from the site; no slope erosion; water velocity moving offsite must not be greater than pre-construction levels; and preserve natural hydraulic features and riparian buffers where possible.

#### **4.4 Other Permits**

In addition to the permits described above, other permits that may be applicable to specific activities or project sites are described below.

##### Temporary Groundwater Extraction

The San Diego Water Board has adopted two (2) NPDES Permits that cover groundwater extraction discharges to surface waters in the San Diego Region depending on the location of the discharge. One Permit covers discharges to San Diego Bay, tributaries thereto under tidal influence, and storm drains or other conveyance systems tributary thereto (Order No. R9-2007-0034, NPDES No. CAG919001). Another Permit covers discharges to all other water bodies within the San Diego Region including surface waters, estuaries, and the Pacific Ocean (Order No. R9-2008-0002, NPDES No. CAG919002).

##### General Industrial Permit

Industrial facilities are subject to the requirements of State Water Resources Control Board Water Quality Order No. 2014-0057-DWQ NPDES Permit No. CAS000001, "Waste Discharge Requirements for Discharges of Storm Water Associated With Industrial Activities Excluding Construction Activities," (General Industrial Permit). This permit was adopted on April 1, 2014 and will expire on June 30, 2020. This permit currently applies to operation of existing industrial facilities associated with ten broad categories of industrial activities, and will apply to operation of proposed new industrial facilities within those ten categories. The General Industrial Permit requires the implementation of storm water management measures and development of a SWPPP.



## 5.0 PRIMARY CONSTRAINTS

This Section will address how future development within the Kearny Mesa Community, based on land use policies adopted in the City of San Diego Community Plan Update, could impact drainage and water quality. Kearny Mesa is currently highly developed with a large portion of the community consisting of impervious surfaces. Application of the most current storm water requirements to development projects should prevent new significant adverse impacts associated with flooding, erosion, and water quality from occurring.

### 5.1 Drainage Patterns / Surface Runoff

Development has the potential to change surface runoff characteristics, including the volume of runoff, rate of runoff, and drainage patterns. Any of these changes could result in flooding or erosion. All development in the City of San Diego is subject to drainage regulations through the San Diego Municipal Code. These include comparing and coordinating proposed design with existing structures and systems handling the same flows. Development that adheres to this basic objective of the existing drainage regulations would not be expected to change drainage patterns in a manner that would result in flooding or erosion on or off- site.

#### 5.1.1 Flooding

Changes to drainage patterns resulting from development in the floodplain could have the potential to increase flooding on or off-site. Therefore, any future specific development projects proposed within the floodplain must be studied to determine the impacts. A portion of Kearny Mesa is designated Zone AE and another portion is designated Zone A on the FIRM published by FEMA, and base flood elevations have been determined. The City of San Diego's requirements for protection from flooding are that the lowest floor of any structure must be elevated at least 3 feet above the base flood elevation, and fully enclosed areas below the lowest floor that are subject to flooding shall comply with FEMA's requirements for flood proofing (City of San Diego Municipal Code Section 143.0146(c)). Pursuant to City of San Diego Municipal Code Section 143.0145, any future specific development projects must be studied to determine the effects to base flood elevations and ensure it will not result in flooding, erosion, or sedimentation impacts on or off-site.

The land use designations that intersect the floodplains are a combination of public storage, warehousing, transportation, communications, and utilities, open space, and recreation. Floodplain regulations in the City of San Diego are in effect regardless of the Kearny Mesa Community Plan Update.

### 5.2 Water Quality

Future specific development projects pursuant to the proposed community plan update have the potential to change pollutant discharges either from an increase in the volume of storm water runoff, or from addition of new sources of pollution. Application of the most current storm water requirements to development projects should prevent the increase in volume of stormwater runoff and pollutant discharge by use required LID measures and treatment control BMPs.

As described in Section 3.0 of this report, the SDRWQCB has initiated TMDL studies for the specific pollutants that are currently causing impairment of Tecolote Creek and the Lower San Diego River.

TMDL studies are ultimately used to establish control actions needed to restore and protect bodies of water. Once the TMDLs are developed and adopted, control actions will be implemented through the MS4 Permit, and any applicable requirements for new development or redevelopment will be implemented through the City's SWSM.

Development of Kearny Mesa has potential to improve groundwater quality through removal of potential sources of groundwater contamination, such as small chemical storage facilities and metal plating shops that have the potential for releases of hazardous material. Current storm water regulations that require infiltration of some storm water runoff where feasible include design requirements for protection of groundwater.

Average daily traffic is one factor in the amount of pollution generated from roadways. However, there are many other variables that may affect pollutant concentrations from roadways, including curbs, barriers, grass shoulders, landscaping, traffic characteristics such as speed and braking, vehicle characteristics such as age and maintenance, road maintenance practices, societal practices (i.e. – littering), and pavement composition and quality. The City of San Diego's requirements for storm water BMPs for streets will be implemented on any project, and the resulting improvements compared to the existing condition with no storm water BMPs can be expected to be greater.

Adherence to the requirements of the City of San Diego's SWSM can be expected to improve water quality conditions, or at a minimum, to not exacerbate existing water quality impairments.

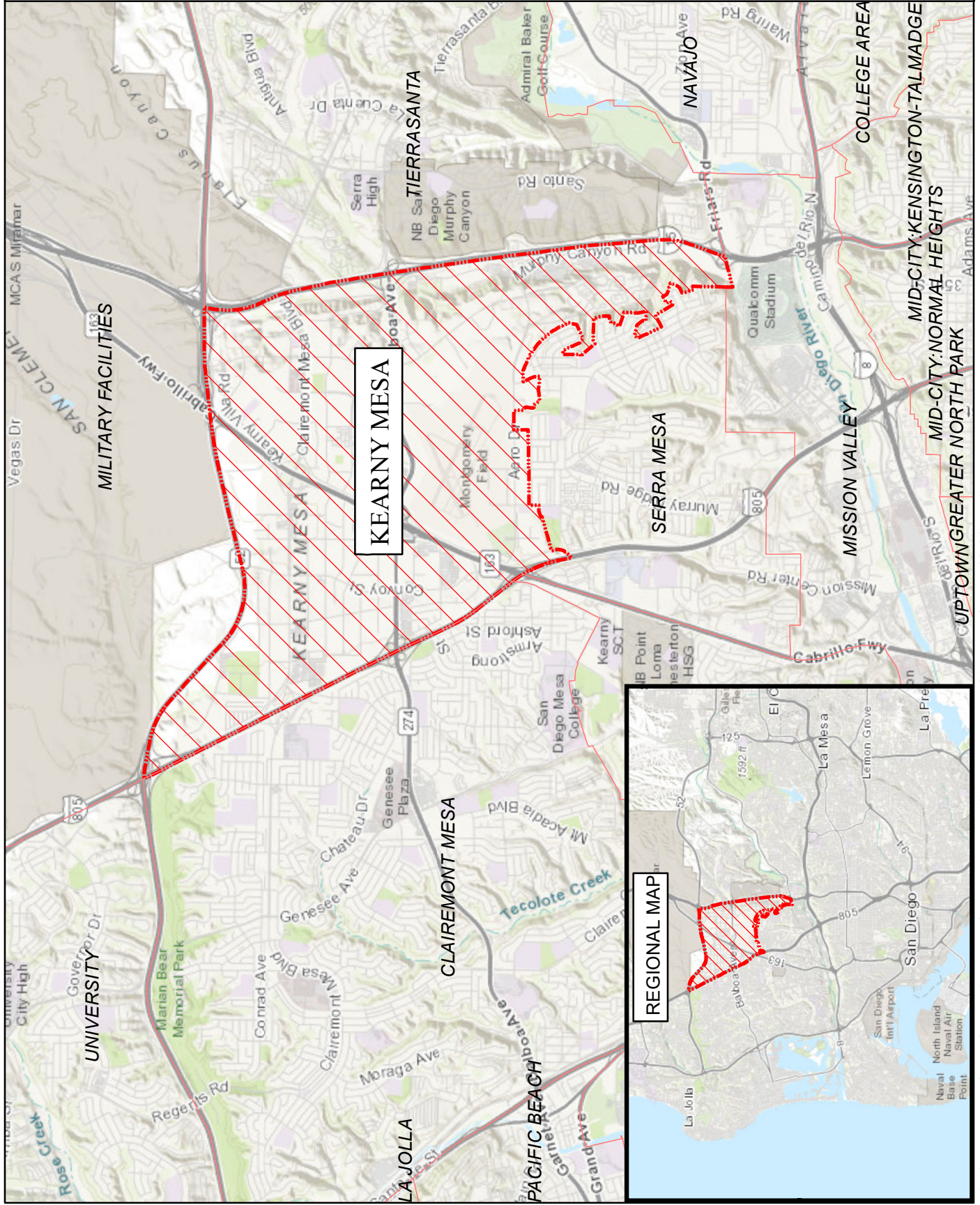
## 6.0 RECOMMENDATIONS

The City of San Diego is currently developing a new Municipal Waterways Maintenance Plan which will provide instruction on the maintenance of existing storm drain infrastructure upon the expiration of the City's current Master Storm Water Systems Maintenance Program (MSWSMP). Future developments adhering to the proposed community plan update should incorporate recommendations from the working plan in an effort to minimize flood risks within the existing waterways in the Kearny Mesa area.

Future specific development projects adhering to the proposed community plan update have the potential to impact pollutant discharges. Each development will be required to conduct a site-specific Storm Water Quality Management Plan (SWQMP) in accordance with the City of San Diego SWSM. Future developments compliance with City SWQMP Standards are expected to result in improved water quality conditions with non-exacerbated water quality impairments being a minimum improvement.

## **ATTACHMENT A REGIONAL LOCATION MAP**



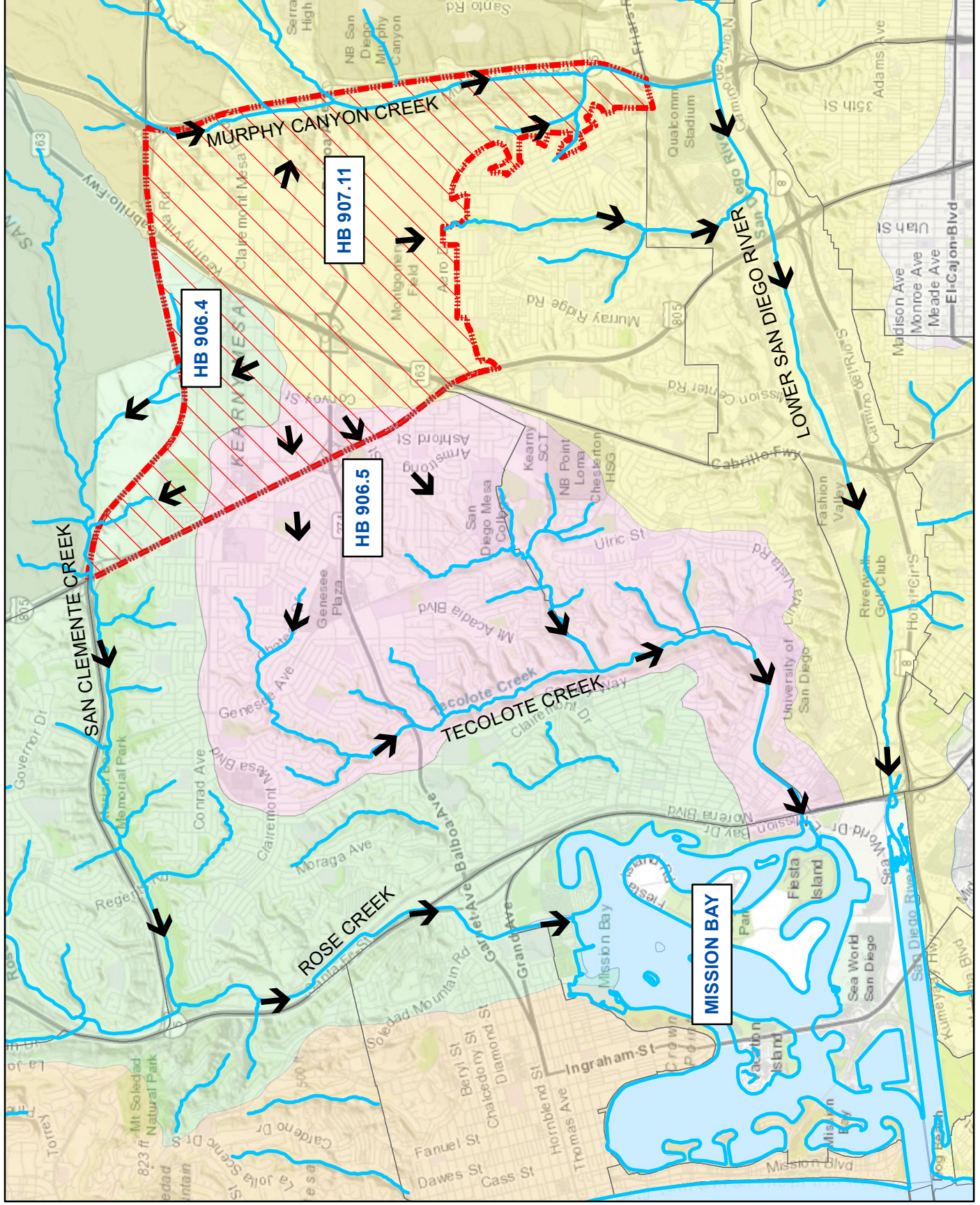
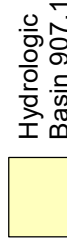
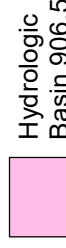
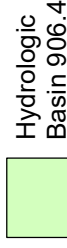


## **ATTACHMENT B REGIONAL DRAINAGE MAP**



# Regional Drainage Map

## Attachment B



**ATTACHMENT C**  
**FEMA FLOODPLAIN MAP AND FIRMETTE**



## NOTES TO USERS

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**Coastal Base Flood Elevations (BFEs)** shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services  
NOAA, NGS12  
National Geodetic Survey  
SSMC-3 #2022  
1315 East-West Highway  
Silver Spring, Maryland 20910-3282  
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov>.

**Base map** information shown on this FIRM was provided in digital format by the USDA National Agriculture Imagery Program (NAIP). This information was photogrammetrically compiled at a scale of 1:24,000 from aerial photography dated 2009.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

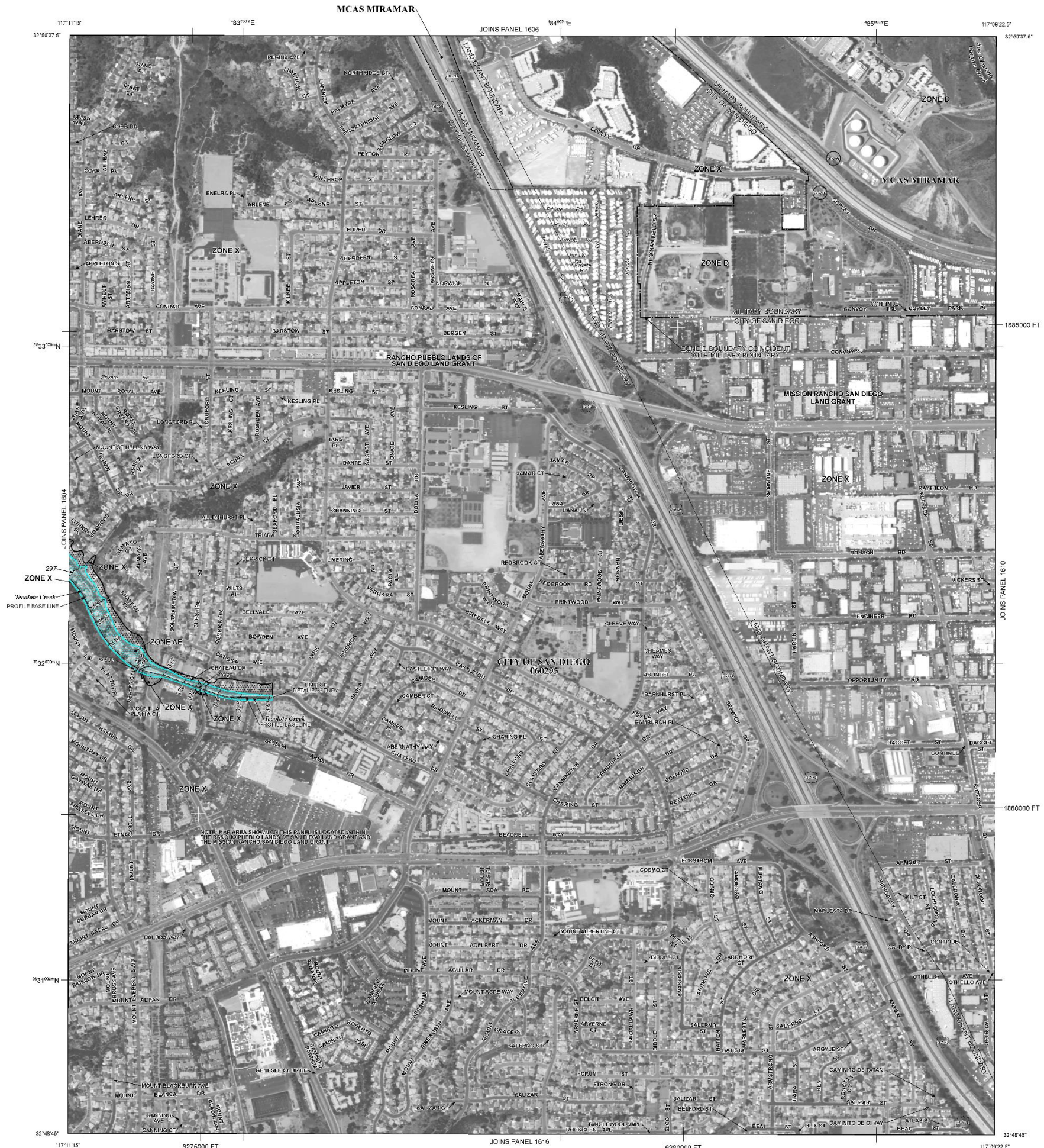
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The "profile base lines" depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.



## LEGEND

**SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently derelict. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

**OTHER FLOOD AREAS**

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

**OTHER AREAS**

**ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.

**ZONE D** Areas in which flood hazards are undetermined, but possible.

**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**

**OTHERWISE PROTECTED AREAS (OPAs)**

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- Base Flood Elevation value and value, elevation in feet
- Base Flood Elevation value where uniform within zone; elevation in feet

\* Referenced to the North American Vertical Datum of 1988

**A** Cross section line

**25** Transient line

97°07'30" 32°22'30"

475200'E

6000000 FT

DX5510

• M1.5

MAP REPOSITORIES

Refer to Map Repositories list on Map Index

**EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**

June 15, 2012

**EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**

May 16, 2012 - to update corporate limits, to add roads and road names, to incorporate previously issued Letters of Map Revision, and to update map elevations to North American Vertical Datum of 1988.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6629.

**MAP SCALE 1" = 500'**

250 0 250 500 750 1000 FEET

150 0 150 300 METERS

PANEL 1608G

**FIRM**

**FLOOD INSURANCE RATE MAP  
SAN DIEGO COUNTY,  
CALIFORNIA  
AND INCORPORATED AREAS**

**PANEL 1608 OF 2375**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS:**

**COMMUNITY** NUMBER PANEL SUFFIX

SAN DIEGO CITY OF 06073C 1608 G

Notice to User: The Map Number shown below should be used when placing map orders. This Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**

06073C1608G

**MAP REVISED**

MAY 16, 2012

Federal Emergency Management Agency



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The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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National Geodetic Survey  
SSM-C-3, #2022  
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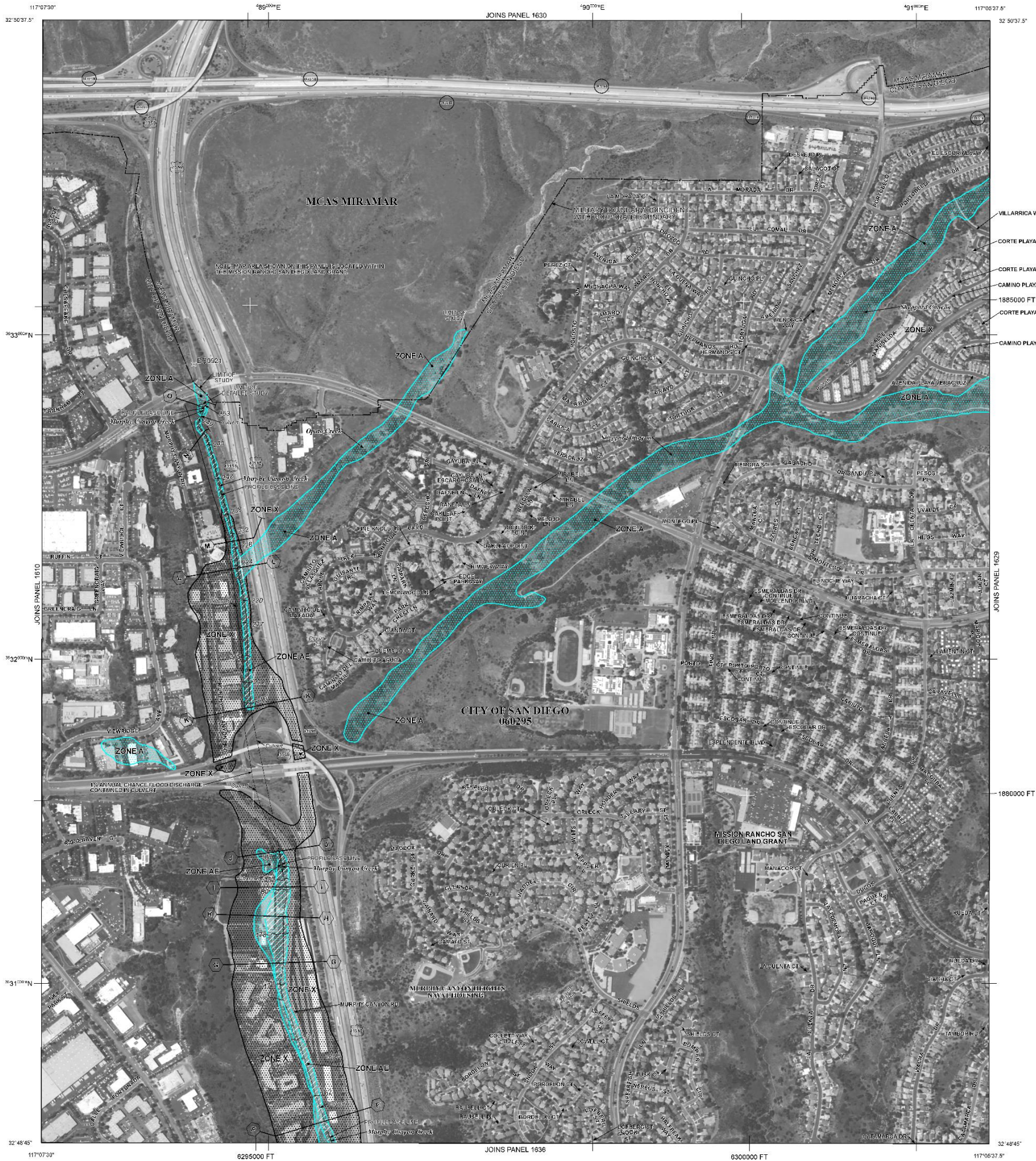
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### OTHER FLOOD AREAS

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### COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

### OTHERWISE PROTECTED AREAS (OPAs)

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- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- Base Flood Elevation line and value; elevation in feet\*
- Base Flood Elevation value where uniform within zone; elevation in feet\*

\* Referenced to the North American Vertical Datum of 1988

Transverse line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

475,000' E

600,000' FT

DX5510

• M1.5

MAP REPOSITORIES

Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

June 19, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

June 16, 1999

May 16, 2012 - to update corporate limits, to add roads and road names, to incorporate previously issued Letters of Map Revision, and to update map elevations to North American Vertical Datum of 1988.

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MAP SCALE 1" = 500'

250 0 250 500 1,000 FEET

150 0 150 300 METERS

1880000 FT

32° 48' 45"

117° 07' 30"

6265000 FT

5300000 FT

117° 05' 37.5"

32° 50' 37.5"

JOINS PANEL 1630

JOINS PANEL 1628H

MCAS MIRAMAR

MILITARY BOUNDARY CONCERNING THE MISSION RANCHO SAN DIEGO LAND GRANT

CITY OF SAN DIEGO 060295

MISSION RANCHO SAN DIEGO LAND GRANT

MURRAY AVENUE/BLVD

MURPHY CANYON RD

PROFILES BASE LINE

PROFILES BASE LINE

PROFILES BASE LINE

PROFILES BASE LINE

PROFILES BASE LINE

PROFILES BASE LINE

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## LEGEND

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### OTHER FLOOD AREAS

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- Cross section line
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- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 475200E
- 6000000 FT
- DX5510
- M1.5
- River Mile

MAP REPOSITORIES

Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

June 19, 1997

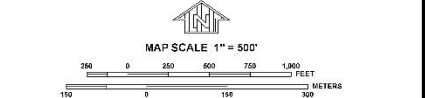
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

June 18, 1999

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PANEL 1636H

**FIRM**  
FLOOD INSURANCE RATE MAP  
SAN DIEGO COUNTY,  
CALIFORNIA  
AND INCORPORATED AREAS

PANEL 1636 OF 2375  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:  
COMMUNITY NUMBER PANEL SUFFIX  
SAN DIEGO CITY OF 05085 1636 H

Notice to User: The Map Number shown below should be used when placing map orders. This Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER  
06073C1636H

MAP REVISED  
MAY 16, 2012

Federal Emergency Management Agency





FEMA



# FEMA Digital Flood Map Products

- **FIRM Panel Image:** Flood Insurance Rate Maps (FIRM) are digital images of flood hazard maps. The images are digital pictures of entire flood map panels that can be viewed and printed from a computer. Most communities and counties have many map panels to cover the entire jurisdiction and an index map that shows the location of each map panel.
- **FIRM Worldfile:** A TFW or PGW file may accompany your flood hazard map. They are used to help view the flood maps in GIS applications.

FIRM Panel Images are TIF or PNG image files and have file names with a Community or County ID followed by a 4-digit panel number and letter suffix representing a version (e.g. 12345C0123F.tif). The FIRM worldfiles will have the same filenames but with a .tfw or .pgw extension.

FIRM Panel Images can be viewed using most freely available image viewer applications. You can also use the FIRMette-Desktop software available from the FEMA Flood Map Service Center (MSC) website at [msc.fema.gov/portal/resources/firmettes](https://msc.fema.gov/portal/resources/firmettes). FIRM images can also be viewed in specialized GIS software where the worldfiles are used to make the images compatible with other GIS data. See the [MSC Products and Tools Overview page](#) for more information on available data and tools for using FEMA's flood risk data.

For more information on available digital products, visit FEMA's Map Service Center website at <https://msc.fema.gov> or call the FEMA Map Information eXchange (FMIX) at 877-336-2627.

**ATTACHMENT D**  
**Excerpts from 2014 and 2016 California Clean Water Act Section 303d**  
**List**

Statewide  
October 3, 2017

## CATEGORY 5

Final 2014 and 2016 Integrated Report  
(CWA Section 303(d) List / 305(b) Report)

### 2014 and 2016 CALIFORNIA 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS\*

**Category 5 criteria: 1) A water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for this segment.**

REGION NAME	WATER BODY NAME	WATER BODY TYPE	USGS CATALOGING UNIT*	CALWATER WATERSHED(S)	ESTIMATED SIZE AFFECTED	UNIT	POLLUTANT	TMDL REQUIREMENT STATUS**	EXPECTED TMDL COMPLETION DATE***
Regional Board 9 - San Diego Region	Mission Bay (area at mouth of Rose Creek only)	Bay & Harbor	18070304	90640000	9.2	Acres	Eutrophic	5A	2019
							Lead	5A	2019
Regional Board 9 - San Diego Region	Mission Bay (area at mouth of Tecolote Creek only)	Bay & Harbor	18070304	90650000	3.1	Acres	Eutrophic	5A	2019
							Lead	5A	2019
Regional Board 9 - San Diego Region	Rose Creek	River & Stream	18070304	90640000	13.3	Miles	Benthic Community Effects	5A	2025
							Selenium	5A	2021
							Toxicity	5A	2021
Regional Board 9 - San Diego Region	San Diego River (Lower)	River & Stream	18070304	90711000	16	Miles	Benthic Community Effects	5A	2025
							Cadmium	5A	2029
							Indicator Bacteria	5B	
							Nitrogen	5A	2029
							Oxygen, Dissolved	5A	2019
							Phosphorus	5A	2019
							Total Dissolved Solids	5A	2019
							Toxicity	5A	2025
Regional Board 9 - San Diego Region	Tecolote Creek	River & Stream	18070304	90650000	6.6	Miles	Benthic Community Effects	5A	2025
							Bifenthrin	5A	2025
							Cadmium	5A	2019
							Copper	5A	2019
							Cypermethrin	5A	2025
							Diazinon	5A	2025
							Indicator Bacteria	5B	
							Lead	5A	2019
							Nitrogen	5A	2021
							Phosphorus	5A	2019
							Selenium	5A	2021
							Toxicity	5A	2019
							Turbidity	5A	2019
							Zinc	5A	2019
Regional Board 9 - San Diego Region	Tecolote Creek, South Fork	River & Stream	18070304	90650000	4	Miles	Indicator Bacteria	5A	2025

**ATTACHMENT E**  
**Excerpts from San Diego Municipal Code (Sections 143.0145 and  
143.0146)**

**§143.0145 Development Regulations for Special Flood Hazard Areas**

- (a) *Special Flood Hazard Areas* within the City of San Diego are established in accordance with the report entitled “*Flood Insurance Study*, San Diego County, California,” dated June 16, 1999 and the accompanying *Flood Insurance Rate Maps (FIRM)*, published by the Federal Emergency Management Agency (FEMA), on file in the office of the City Clerk as Document Nos. 18910-1 and 18910-2, including any supplements, amendments, and revisions which are properly promulgated by FEMA or the Federal Insurance Administrator.
- (b) For the purpose of Sections 143.0145 and 143.0146, the City Engineer is the designated Floodplain Administrator and shall administer, implement, and enforce these regulations.
- (c) The degree of *flood* protection required by this section is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger *floods* can and will occur on rare occasions. It is possible that increased *flood* heights may result from man-made or natural causes. This section does not imply that land outside a *Special Flood Hazard Area* or uses permitted within such areas will be free from *flooding* or *flood* damages. This section shall not create liability on the part of the City, any officer or employee thereof, or the FEMA, for any *flood* damages that result from reliance on this chapter or any administrative decision lawfully made there under.
- (d) The following development regulations and all other applicable requirements and regulations of FEMA apply to all *development* proposing to encroach into a *Special Flood Hazard Area*, including both the *floodway* and *flood fringe* areas or that does not qualify for an exemption pursuant to Section 143.0110(c):
  - (e) *Floodways*
    - (1) Within the *floodway* portion of a *premises*, development regulations are as set forth for the OF zone, pursuant to Section 131.0231.
    - (2) *Structures* associated with any allowed use shall comply with the following requirements:
      - (A) *Structures* shall not be attached to a foundation, in order to readily move them in case of *flood*; and
      - (B) *Structures* shall be removed upon imminence of *flooding*, as predicted by the National Weather Service or local public weather broadcast. If a *structure* is not removed and *flooding* occurs, the retrieval or salvage of the *structure* and repair of any damage caused by the *structure* shall be the responsibility of the owner.



- (3) *Channelization* or other substantial alteration of rivers or streams shall be limited to that necessary for the following:
  - (A) Essential public service projects, where no other feasible construction method or alternative project location exists; and
  - (B) *Flood* control projects, where no other feasible method for protecting existing public or private *development* exists and where such protection is necessary for public safety.
  - (C) Projects where the primary function is the improvement of fish and wildlife habitat.
- (4) *Development* in *floodways* shall be offset by improvements or modifications to enable the passage of a *base flood*, in accordance with the FEMA standards and regulations provided in Section 143.0146.
- (5) *Development* that involves *channelization* or other substantial alteration of rivers or streams is subject to the following requirements.
  - (A) All requirements and relevant recommendations of hydrological studies for the watershed of the affected stream, as approved by the City Engineer, shall be incorporated into the project design and mitigation measures. These requirements include erosional characteristics, flow velocities, volume, sediment transport, and maintenance of hydrology.
  - (B) The channel shall be designed to ensure that the following occur:
    - (i) Stream scour is minimized;
    - (ii) Erosion protection is provided;
    - (iii) Water flow velocities are maintained as specified by the City Engineer;
    - (iv) There are neither significant increases nor contributions to downstream bank erosion and sedimentation of *sensitive biological resources*; acceptable techniques to control stream sediment include planting riparian vegetation in and near the stream and detention or retention basins;
    - (v) Wildlife habitat and corridors are maintained;
    - (vi) Resource management criteria are implemented consistent with applicable *land use plans*; and
    - (vii) Groundwater recharge capability is maintained or improved.

- (C) Channels that accommodate a *base flood* shall do so without increasing the water surface elevation more than one foot at any point from the level of a nonconfined *base flood* in the natural undeveloped floodplain. Channels may accommodate less than a *base flood* (low-flow channels), but shall be designed and constructed in accordance with FEMA regulations.
  - (D) All artificial channels shall consist of natural bottoms and sides and shall be designed and sized to accommodate existing and proposed riparian vegetation and other natural or proposed constraints. Where maintenance is proposed or required to keep vegetation at existing levels compatible with the design capacity of the channel, a responsible party shall be identified and a maintenance and monitoring process shall be established to the satisfaction of the City Engineer.
- (6) *Development* shall not significantly adversely affect existing *sensitive biological resources* on-site or off-site.
- (7) Within the Coastal Overlay Zone, no *structure* or portion thereof shall be erected, constructed, converted, established, altered or enlarged, or no landform alteration *grading*, placement or removal of vegetation, except that related to a historic and ongoing agricultural operation, or land division shall be permitted, provided:
  - (A) Parking lots, new roadways and roadway expansions shall be allowed only where indicated on an adopted *Local Coastal Program land use plan*.
  - (B) *Floodway* encroachments for utility and transportation crossings shall be offset by improvements or modifications to enable the passage of the *base flood*, in accordance with the FEMA standards and regulations provided in Section 143.0146.
- (f) *Flood Fringe*. The applicable development regulations are those in the underlying zone, subject to the following supplemental regulations:
  - (1) Within the *flood fringe* of a *Special Flood Hazard Area*, permanent *structures* and *fill* for permanent *structures*, roads, and other *development* are allowed only if the following conditions are met:
    - (A) The *development* or *fill* will not significantly adversely affect existing *sensitive biological resources* on-site or off-site;

- (B) The *development* is capable of withstanding *flooding* and does not require or cause the construction of off-site *flood* protective works including artificial *flood* channels, revetments, and levees nor will it cause adverse impacts related to *flooding* of properties located upstream or downstream, nor will it increase or expand a (*FIRM*) Zone A;
  - (C) *Grading* and *filling* are limited to the minimum amount necessary to accommodate the proposed *development*, harm to the environmental values of the floodplain is minimized including peak flow storage capacity, and *wetlands* hydrology is maintained;
  - (D) The *development* neither significantly increases nor contributes to downstream bank erosion and sedimentation nor causes an increase in *flood* flow velocities or volume; and
  - (E) There will be no significant adverse water quality impacts to downstream wetlands, lagoons or other *sensitive biological resources*, and the *development* is in compliance with the requirements and regulations of the National Pollution Discharge Elimination System, as implemented by the City of San Diego.
  - (F) The design of the *development* incorporates the findings and recommendations of both a site specific and coastal watershed hydrologic study.
- (2) All *development* that involves *fill*, *channelization*, or other alteration of a *Special Flood Hazard Area* is subject to the requirements for *channelization* in Section 143.0145(e)(5) and with FEMA regulations.

(Amended 4-22-2002 by O-19051 N.S.; effective 10-8-2002.)

(Amended 11-13-08 by O-19805 N.S; effective 12-13-2008.)

**§143.0146 Supplemental Regulations for Special Flood Hazard Areas**

All proposed *development* within a *Special Flood Hazard Area* is subject to the following requirements and all other applicable requirements and regulations of FEMA.

(a) *Development* and Permit Review

- (1) Where *base flood elevation* data has not been provided by the *Flood Insurance Study*, the City Engineer shall obtain, review, and utilize *base flood elevation* and *floodway* data available from federal or state sources, or require submittal of such data from the *applicant*. The City Engineer shall make interpretations, where needed, as to the location of the boundaries of the areas of the *Special Flood Hazard Area*, based on the best available engineering or scientific information.
- (2) Proposed *development* in a *Special Flood Hazard Area* shall not adversely affect the *flood* carrying capacity of areas where *base flood elevations* have been determined but the *floodway* has not been designated. “Adversely affect” as used in this section means that the cumulative effect of the proposed *development*, when combined with all other existing and anticipated *development*, will not increase the water surface elevation of the *base flood* more than one foot at any point.
- (3) In all cases where a watercourse is to be altered the City Engineer shall do the following:
  - (A) Notify affected, adjacent communities and the California Department of Water Resources of any proposed alteration or relocation of a watercourse and submit evidence of the notice to the Federal Insurance Administration;
  - (B) Require that the *flood* carrying capacity of the altered or relocated portion of the watercourse is maintained; and
  - (C) Secure and maintain for public inspection and availability the *certifications*, appeals, and variances required by these regulations.
- (4) The *applicant* shall grant a flowage easement to the City for that portion of the property within a *floodway*.

- (5) Appropriate agreements shall be secured between the *applicant* and the City to assure participation by the *applicant* or any successor in interest in financing of future *flood* control works.
  - (6) *Development* in a *Special Flood Hazard Area* shall not increase or expand a *FIRM* Zone A.
  - (7) In In all *floodways*, any *encroachment*, including *fill*, new construction, significant modifications, and other *development* is prohibited unless *certification* by a registered professional engineer is provided demonstrating that *encroachments* will not result in any increase in *flood* levels during the occurrence of the *base flood* discharge except as allowed under Code of Federal Regulations Title 44, Chapter 1, Part 60.3(c)(13).
- (b) Standards for *Subdivisions*
- (1) All preliminary *subdivision* proposals shall identify the *Special Flood Hazard Area* and the elevation of the *base flood*.
  - (2) All final *subdivision maps* shall provide the elevation of proposed *structures* and pads. If the site is *filled* above the *base flood elevation*, the *lowest floor*, including *basement*, shall be certified to be 2 feet above the *base flood elevation* by a registered professional engineer or surveyor, and the *certification* shall be provided to the City Engineer.
  - (3) All *subdivisions* shall be designed to minimize *flood* damage.
  - (4) All *subdivisions* shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize *flood* damage.
  - (5) All *subdivisions* shall provide adequate drainage to reduce exposure to *flood* hazards.
  - (6) The final map shall bear the notation “Subject to Inundation” for those portions of the property with a *grade* lower than 2 feet above the *base flood elevation*.
- (c) Standards of Construction

In all *Special Flood Hazard Areas*, the following standards apply for all *development*.

- (1) All permitted, permanent *structures* and other significant improvements shall be anchored to prevent flotation, collapse, or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

- (2) All permitted permanent *structures* and other significant improvements shall be constructed with materials and utility equipment resistant to *flood* damage.
- (3) Construction methods and practices that minimize *flood* damage shall be used.
- (4) All electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and located to prevent water from entering or accumulating within the equipment components during conditions of *flooding*.
- (5) *Breakaway walls* shall be certified by a registered engineer or architect to meet all applicable FEMA requirements. The *certification* shall be provided to the City Engineer before final inspection approval.
- (6) New construction or *substantial improvement* of any *structure* shall have the *lowest floor*, including *basement*, elevated at least 2 feet above the *base flood elevation*. Upon completion of the *development*, the elevation of the *lowest floor*, including *basement*, shall be certified by a registered professional engineer or surveyor to be properly elevated. The *certification* shall be provided to the City Engineer before final inspection approval. The City Engineer reserves the right to require a preliminary *certification* before foundation inspection approval.
- (7) New construction or *substantial improvement* of any *structure* in *FIRM* Zone AH or AO shall have the *lowest floor*, including *basement*, elevated above the highest adjacent *grade* at least 2 feet higher than the depth number specified on the *FIRM*, or at least 4 feet if no depth number is specified. Upon the completion of the *structure* the elevation of the *lowest floor*, including *basement*, shall be certified by a registered professional engineer or surveyor, to be properly elevated. The *certification* shall be provided to the City Engineer before final inspection approval. The City Engineer may require a preliminary *certification* before foundation inspection approval.

- (8) Permitted nonresidential construction shall either be elevated as required by Section 143.0146(c)(6) or (7) or, together with attendant utility and sanitary facilities, meet the flood proofing requirements of FEMA. *Certification* by a registered professional engineer or architect that such requirements are met shall be provided to the City Engineer before final inspection approval. The City Engineer may require a preliminary *certification* before foundation inspection approval.
- (9) Fully enclosed areas below the *lowest floor* that are subject to *flooding* shall be certified by a registered professional engineer or architect that they comply with the flood proofing requirements of FEMA. The *certification* shall be provided to the City Engineer before final inspection approval.

(d) Standards for *Manufactured Homes*

All new and replacement *manufactured homes* and additions to *manufactured homes* are subject to the following regulations.

- (1) The *lowest floor* shall be elevated at least 2 feet above the *base flood elevation*.
- (2) *Manufactured homes* shall be securely anchored to a permanent foundation system to resist flotation, collapse, or lateral movement.
- (3) A registered engineer or architect must certify that the conditions of this subsection have been met. The *certification* shall be provided to the City Engineer before final inspection approval.

(e) Standards for Utilities

*Certification* shall be provided to the City Engineer before final inspection approval that the following requirements have been met.

- (1) All new and replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate infiltration of *flood* waters into the system and discharge from systems into *flood* waters.
- (2) On-site waste disposal systems shall be located and designed to avoid impairment to them or contamination from them during *flooding*.

- (f) The City Engineer shall notify the San Diego District Offices of the Coastal Commission of any pending changes to the adopted Flood Insurance Rate Maps affecting property within the Coastal Overlay Zone when the City Engineer receives notification of such potential changes. The City Engineer shall notify the Commission staff when *costal development* within the City of San Diego's Coastal

Development Permit jurisdiction would require processing a change to the FIRM maps. The City Engineer shall assure the Commission's District Office has the most current effective Flood Insurance Rate Maps approved by FEMA by forwarding any revised maps affecting the Coastal Overlay Zone within thirty working days of City Engineer's receipt.

(Amended 4-22-2002 by O-19051 N.S.; effective 10-8-2002.)

(Amended 8-4-2011 by O-20081 N.S.; effective 10-6-2011.)

#### **§143.0150 Deviations from Environmentally Sensitive Lands Regulations**

Plans submitted in accordance with this section shall, to the maximum extent feasible, comply with the regulations of this division. If a proposed *development* does not comply with all applicable development regulations of this division and a deviation is requested as indicated in Table 143-01A, the Planning Commission may approve, conditionally approve, or deny the proposed Site Development Permit in accordance with Process Four, subject to the following:

- (a) Deviations from the regulations of this division may be granted only if the decision maker makes the *findings* in Section 126.0504(c).
- (b) Deviations from the Supplemental Regulations for Special Flood Hazard Areas in Section 143.0146 may be granted only if the decision maker makes the *findings* in Section 126.0504(d).
- (c) Within the Coastal Overlay Zone, deviations from the Environmentally Sensitive Lands Regulations may be granted only if the decision maker makes the *findings* in Section 126.0708.