

FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 6



LOS ANGELES COUNTY, CALIFORNIA AND INCORPORATED AREAS

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
LOS ANGELES COUNTY UNINCORPORATED AREAS	065043	CLAREMONT, CITY OF*	060109
AGOURA HILLS, CITY OF	065072	COMMERCE, CITY OF	060110
ALHAMBRA, CITY OF*	060095	COMPTON, CITY OF	060111
ARCADIA, CITY OF	065014	COVINA, CITY OF*	065024
ARTESIA, CITY OF*	060097	CUDAHY, CITY OF	060657
AVALON, CITY OF	060098	CULVER CITY, CITY OF	060114
AZUSA, CITY OF	065015	DIAMOND BAR, CITY OF	060741
BALDWIN PARK, CITY OF*	060100	DOWNEY, CITY OF	060645
BELL, CITY OF*	060101	DUARTE, CITY OF*	065026
BELL GARDENS, CITY OF	060656	EL MONTE, CITY OF*	060658
BELLFLOWER, CITY OF	060102	EL SEGUNDO, CITY OF	060118
BEVERLY HILLS, CITY OF*	060655	GARDENA, CITY OF	060119
BRADBURY, CITY OF*	065017	GLENDALE, CITY OF*	065030
BURBANK, CITY OF	065018	GLENDORA, CITY OF*	065031
CALABASAS, CITY OF	060749	HAWAIIAN GARDENS, CITY OF*	065032
CARSON, CITY OF	060107	HAWTHORNE, CITY OF*	060123
CERRITOS, CITY OF	060108	HERMOSA BEACH, CITY OF	060124

*No Special Flood Hazard Areas Identified

PRELIMINARY: March 9, 2016

FLOOD INSURANCE STUDY NUMBER

06037CV001C

Version Number 2.3.3.2



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COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
HIDDEN HILLS, CITY OF	060125	PICO RIVERA, CITY OF	060148
HUNTINGTON PARK, CITY OF*	060126	POMONA, CITY OF*	060149
INDUSTRY, CITY OF*	065035	RANCHO PALOS VERDES, CITY OF*	060464
INGLEWOOD, CITY OF*	065036	REDONDO BEACH, CITY OF	060150
IRWINDALE, CITY OF*	060129	ROLLING HILLS, CITY OF*	060151
LA CANADA FLINTRIDGE, CITY OF*	060669	ROLLING HILLS ESTATES, CITY OF *	065054
LA HABRA HEIGHTS, CITY OF*	060701	ROSEMEAD, CITY OF*	060153
LA MIRADA, CITY OF	060131	SAN DIMAS, CITY OF	060154
LA PUENTE, CITY OF*	065039	SAN FERNANDO, CITY OF*	060628
LA VERNE, CITY OF*	060133	SAN GABRIEL, CITY OF*	065055
LAKEWOOD, CITY OF	060130	SAN MARINO, CITY OF*	065057
LANCASTER, CITY OF	060672	SANTA CLARITA, CITY OF	060729
LAWNDALE, CITY OF*	060134	SANTA FE SPRINGS, CITY OF	060158
LOMITA, CITY OF*	060135	SANTA MONICA, CITY OF	060159
LONG BEACH, CITY OF	060136	SIERRA MADRE, CITY OF*	065059
LOS ANGELES, CITY OF	060137	SIGNAL HILL, CITY OF*	060161
LYNWOOD, CITY OF	060635	SOUTH EL MONTE, CITY OF*	060162
MALIBU, CITY OF	060745	SOUTH GATE, CITY OF	060163
MANHATTAN BEACH, CITY OF	060138	SOUTH PASADENA, CITY OF*	065061
MAYWOOD, CITY OF*	060651	TEMPLE CITY, CITY OF	060653
MONROVIA, CITY OF*	065046	TORRANCE, CITY OF	060165
MONTEBELLO, CITY OF	060141	VERNON, CITY OF*	060166
MONTEREY PARK, CITY OF*	065047	WALNUT, CITY OF*	065069
NORWALK, CITY OF	060652	WEST COVINA, CITY OF	060666
PALMDALE, CITY OF	060144	WEST HOLLYWOOD, CITY OF	060720
PALOS VERDES ESTATES, CITY OF	060145	WESTLAKE VILLAGE, CITY OF	060744
PARAMOUNT, CITY OF	065049	WHITTIER, CITY OF	060169
PASADENA, CITY OF*	065050		

*No Special Flood Hazard Areas Identified

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Flood Insurance Rate Map (FIRM)

FLOOD INSURANCE STUDY REPORT LOS ANGELES COUNTY, CALIFORNIA

SECTION 1.0 – INTRODUCTION

1.1 The National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a voluntary Federal program that enables 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.

For decades, the national response to flood disasters was generally limited to constructing flood-control works such as dams, levees, sea-walls, and the like, and providing disaster relief to flood victims. This approach did not reduce losses nor did it discourage unwise development. In some instances, it may have actually encouraged additional development. To compound the problem, the public generally could not buy flood coverage from insurance companies, and building techniques to reduce flood damage were often overlooked.

In the face of mounting flood losses and escalating costs of disaster relief to the general taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances, and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection.

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968. The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994 and the Flood Insurance Reform Act of 2004. The NFIP is administered by the Federal Emergency Management Agency (FEMA), which is a component of the Department of Homeland Security (DHS).

Participation in the NFIP is based on an agreement between local communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60.3, *Criteria for land Management and Use*.

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal Government. Congress also recognized that most of these floodprone buildings were built by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after

the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as “Post-FIRM” buildings.

1.2 Purpose of this Flood Insurance Study Report

This Flood Insurance Study (FIS) report revises and updates information on the existence and severity of flood hazards for the study area. The studies described in this report developed flood hazard data that will be used to establish actuarial flood insurance rates and to assist communities in efforts to implement sound floodplain management.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum Federal requirements. Contact your State NFIP Coordinator to ensure that any higher State standards are included in the community’s regulations.

1.3 Jurisdictions Included in the Flood Insurance Study Project

This FIS Report covers the entire geographic area of Los Angeles County, California.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the 8-digit Hydrologic Unit Codes (HUC-8) sub-basins affecting each, are shown in Table 1. The Flood Insurance Rate Map (FIRM) panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

The location of flood hazard data for participating communities in multiple jurisdictions is also indicated in the table.

Jurisdictions that have no identified SFHAs as of the effective date of this study are indicated in the table. Changed conditions in these communities (such as urbanization or annexation) or the availability of new scientific or technical data about flood hazards could make it necessary to determine SFHAs in these jurisdictions in the future.

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Agoura Hills, City of	065072	18070104	06037C1241F 06037C1242F 06037C1243F 06037C1244F 06037C1261F 06037C1263F	
Alhambra, City of ¹	060095	18070105	06037C1635F ² 06037C1641F ² 06037C1645F 06037C1675F ²	
Arcadia, City of	065014	18070105 18070106	06037C1400F 06037C1675F ² 06037C1700F	
Artesia, City of ¹	060097	18070106	06037C1839F 06037C1980F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Avalon, City of	060098	18070107	06037C2202F 06037C2203F ² 06037C2204F 06037C2210F ²	
Azusa, City of	065015	18070106	06037C1415F 06037C1420F 06037C1700F	
Baldwin Park, City of ¹	060100	18070106	06037C1670F 06037C1675F ² 06037C1700F	
Bell, City of ¹	060101	18070105	06037C1805F 06037C1810F	
Bell Gardens, City of	060656	18070105	06037C1810F	
Bellflower, City of	060102	18070106	06037C1820F 06037C1840F 06037C1960F 06037C1980F	
Beverly Hills, City of ¹	060655	18070104	06037C1585F 06037C1595F 06037C1605F 06037C1615F	
Bradbury, City of ¹	065017	18070105 18070106	06037C1415F	
Burbank, City of	065018	18070105	06037C1328F 06037C1329F 06037C1330F 06037C1335F 06037C1337F 06037C1339F 06037C1340F ² 06037C1345F	
Calabasas, City of	060749	18070104 18070105	06037C1262F 06037C1263F 06037C1264G 06037C1267F 06037C1268F 06037C1269F 06037C1288G 06037C1527G 06037C1531F 06037C1532G	
Carson, City of	060107	18070105 18070106	06037C1795F 06037C1815F 06037C1935F 06037C1945F 06037C1955F 06037C1965F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Cerritos, City of	060108	18070106	06037C1839F 06037C1840F 06037C1843F 06037C1844F 06037C1980F 06037C2000F	
Claremont, City of ¹	060109	18070106 18070203	06037C1475F 06037C1725F 06037C1750F	
Commerce, City of	060110	18070105	06037C1639F ² 06037C1643F ² 06037C1645F 06037C1810F 06037C1830F	
Compton, City of	060111	18070105 18070106	06037C1795F 06037C1815F 06037C1820F 06037C1955F	
Covina, City of ¹	065024	18070106	06037C1700F 06037C1725F	
Cudahy, City of	060657	18070105	06037C1805F 06037C1810F	
Culver City, City of	060114	18070104	06037C1595F 06037C1615F 06037C1752F 06037C1760F	
Diamond Bar, City of	060741	18070106 18070203	06037C1725F 06037C1880F 06037C1900F ²	
Downey, City of	060645	18070105 18070106	06037C1810F 06037C1820F 06037C1829F 06037C1830F 06037C1837F 06037C1840F	
Duarte, City of ¹	065026	18070105 18070106	06037C1405F ² 06037C1410F ² 06037C1415F 06037C1420F 06037C1700F	
El Monte, City of ¹	060658	18070105 18070106	06037C1670F 06037C1675F ² 06037C1700F	
El Segundo, City of	060118	18070104 18070106	06037C1770F 06037C1790F	
Gardena, City of	060119	18070106	06037C1790F 06037C1795F 06037C1930F 06037C1935F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Glendale, City of ¹	065030	18070105	06037C1095F 06037C1125F ² 06037C1335F 06037C1345F 06037C1375F 06037C1610F 06037C1626F	
Glendora, City of ¹	065031	18070106	06037C1420F 06037C1440F 06037C1445F 06037C1700F 06037C1725F	
Hawaiian Gardens, City of ¹	065032	18070106	06037C1980F 06037C2000F	
Hawthorne, City of ¹	060123	18070106	06037C1770F 06037C1790F	
Hermosa Beach, City of	060124	18070104 18070106	06037C1770F 06037C1907F 06037C1910F	
Hidden Hills, City of	060125	18070104 18070105	06037C1266F 06037C1267F 06037C1268F	
Huntington Park, City of ¹	060126	18070105	06037C1805F	
Industry, City of ¹	065035	18070106	06037C1668F 06037C1670F 06037C1675F ² 06037C1695F 06037C1700F 06037C1725F 06037C1875F 06037C1880F	
Inglewood, City of ¹	065036	18070104 18070105 18070106	06037C1760F 06037C1776F 06037C1777F 06037C1780F ² 06037C1790F	
Irwindale, City of ¹	060129	18070105 18070106	06037C1415F 06037C1420F 06037C1675F ² 06037C1700F	
La Canada Flintridge, City of ¹	060669	18070105	06037C1375F	
La Habra Heights, City of ¹	060701	18070106	06037C1851F 06037C1853F 06037C1875F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
La Mirada, City of	060131	18070106	06037C1841F 06037C1842F 06037C1843F 06037C1844F 06037C1861F 06037C1875F 06037C2000F	
La Puente, City of ¹	065039	18070106	06037C1695F 06037C1700F	
La Verne, City of ¹	060133	18070106	06037C1445F 06037C1475F 06037C1725F	
Lakewood, City of	060130	18070105 18070106	06037C1960F 06037C1980F 06037C2000F	
Lancaster, City of	060672	18090206	06037C0150F 06037C0175F 06037C0400F 06037C0405F 06037C0410F 06037C0415F 06037C0420F 06037C0442F 06037C0450F 06037C0462F 06037C0465F 06037C0475F	
Lawndale, City of ¹	060134	18070106	06037C1790F 06037C1930F	
Lomita, City of ¹	060135	18070106	06037C1940F 06037C1945F	
Long Beach, City of	060136	18070105 18070106	06037C1815F 06037C1820F 06037C1955F 06037C1960F 06037C1962F 06037C1964F 06037C1965F 06037C1970F 06037C1980F 06037C1988F 06037C1990F 06037C2055F 06037C2060F 06037C2076F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Los Angeles, City of	060137	18070103 18070104 18070105 18070106	06037C1025F ² 06037C1033F ² 06037C1034F 06037C1040F 06037C1045F 06037C1067F 06037C1069F 06037C1075F 06037C1086F 06037C1087F ² 06037C1088F 06037C1089F 06037C1095F 06037C1125F ² 06037C1266F 06037C1267F 06037C1269F 06037C1275F 06037C1280F 06037C1285F 06037C1288G 06037C1290F 06037C1295F 06037C1305F 06037C1310F 06037C1315F 06037C1320F ² 06037C1328F 06037C1329F 06037C1330F 06037C1335F 06037C1337F 06037C1339F 06037C1340F ² 06037C1345F 06037C1375F 06037C1552G 06037C1553G 06037C1554F 06037C1556F ² 06037C1557F 06037C1558F ² 06037C1559F 06037C1562F 06037C1566F 06037C1567F 06037C1569F 06037C1580F 06037C1585F 06037C1590F 06037C1595F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Los Angeles, City of (continued)	060137	18070103 18070104 18070105 18070106	06037C1605F 06037C1610F 06037C1615F 06037C1620F 06037C1626F 06037C1627F ² 06037C1628F 06037C1629F 06037C1635F ² 06037C1636F 06037C1637F 06037C1638F 06037C1639F ² 06037C1641F ² 06037C1751F 06037C1752F 06037C1754F 06037C1760F 06037C1765F 06037C1770F 06037C1776F 06037C1777F 06037C1780F ² 06037C1781F 06037C1785F 06037C1790F 06037C1795F 06037C1805F 06037C1815F 06037C1935F 06037C1945F 06037C1955F 06037C1965F 06037C2027F 06037C2029F 06037C2031F 06037C2032F 06037C2033F 06037C2034F 06037C2055F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Los Angeles County, Unincorporated Areas	065043	18030003 18070102 18070103 18070104 18070105 18070106 18070107 18070203 18090206 18090208	06037C0025F ² 06037C0036F 06037C0040F 06037C0050F 06037C0075F 06037C0100F 06037C0125F 06037C0150F 06037C0175F 06037C0200F 06037C0225F 06037C0250F ² 06037C0275F 06037C0300F 06037C0325F 06037C0350F 06037C0365F 06037C0370F 06037C0375F 06037C0400F 06037C0410F 06037C0415F 06037C0420F 06037C0442F 06037C0444F 06037C0450F 06037C0462F 06037C0464F 06037C0465F 06037C0466F 06037C0468F 06037C0470F 06037C0475F 06037C0500F 06037C0525F 06037C0550F ² 06037C0575F 06037C0600F 06037C0610F 06037C0625F 06037C0630F 06037C0635F 06037C0640F 06037C0645F 06037C0651F 06037C0652F ²	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Los Angeles County, Unincorporated Areas (continued)	065043	18030003 18070102 18070103 18070104 18070105 18070106 18070107 18070203 18090206 18090208	06037C0656F 06037C0657F 06037C0658F 06037C0659F 06037C0665F 06037C0670F 06037C0694F 06037C0700F 06037C0701F 06037C0702F 06037C0703F 06037C0704F 06037C0706F 06037C0710F 06037C0711F 06037C0713F 06037C0715F 06037C0720F 06037C0750F 06037C0775F 06037C0800F 06037C0805F 06037C0810F 06037C0815F 06037C0830F 06037C0835F 06037C0840F 06037C0845F 06037C0875F 06037C0900F 06037C0925F 06037C0950F 06037C0975F 06037C1000F 06037C1025F ² 06037C1030F 06037C1031F 06037C1032F 06037C1033F ² 06037C1034F 06037C1040F 06037C1045F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Los Angeles County, Unincorporated Areas (continued)	065043	18030003 18070102 18070103 18070104 18070105 18070106 18070107 18070203 18090206 18090208	06037C1067F 06037C1075F 06037C1086F 06037C1087F ² 06037C1088F 06037C1095F 06037C1100F ² 06037C1109F 06037C1125F ² 06037C1150F ² 06037C1175F ² 06037C1200F ² 06037C1225F ² 06037C1239F 06037C1240F ² 06037C1243F 06037C1244F 06037C1261F 06037C1262F 06037C1263F 06037C1264G 06037C1266F 06037C1267F 06037C1268F 06037C1269F 06037C1275F 06037C1288G 06037C1290F 06037C1339F 06037C1340F ² 06037C1375F 06037C1400F 06037C1405F ² 06037C1410F ² 06037C1415F 06037C1420F 06037C1430F 06037C1435F ² 06037C1440F 06037C1445F 06037C1475F 06037C1480F ² 06037C1485F 06037C1490F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Los Angeles County, Unincorporated Areas (continued)	065043	18030003 18070102 18070103 18070104 18070105 18070106 18070107 18070203 18090206 18090208	06037C1491F 06037C1492F 06037C1502F 06037C1505F ² 06037C1506F 06037C1507F 06037C1508F ² 06037C1509F ² 06037C1511F 06037C1512F 06037C1516F 06037C1517G 06037C1526G 06037C1527G 06037C1528F 06037C1529G 06037C1531F 06037C1532G 06037C1533G 06037C1534F ² 06037C1536F 06037C1537F 06037C1541F 06037C1542F 06037C1551G 06037C1552G 06037C1553G 06037C1554F 06037C1561F 06037C1562F 06037C1580F 06037C1585F 06037C1590F 06037C1595F 06037C1615F 06037C1637F 06037C1639F ² 06037C1641F ² 06037C1643F ² 06037C1645F 06037C1664F 06037C1665F 06037C1668F 06037C1670F 06037C1675F ² 06037C1695F 06037C1700F 06037C1725F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Los Angeles County, Unincorporated Areas (continued)	065043	18030003 18070102 18070103 18070104 18070105 18070106 18070107 18070203 18090206 18090208	06037C1750F 06037C1752F 06037C1754F 06037C1760F 06037C1770F 06037C1776F 06037C1777F 06037C1780F ² 06037C1785F 06037C1790F 06037C1795F 06037C1805F 06037C1815F 06037C1820F 06037C1829F 06037C1830F 06037C1835F 06037C1839F 06037C1840F 06037C1841F 06037C1842F 06037C1851F 06037C1861F 06037C1875F 06037C1880F 06037C1900F ² 06037C1935F 06037C1940F 06037C1945F 06037C1955F 06037C1980F 06037C2000F 06037C2031F 06037C2125F ² 06037C2150F ² 06037C2175F ² 06037C2200F ² 06037C2201F ² 06037C2202F 06037C2203F ² 06037C2204F 06037C2210F ² 06037C2215F ² 06037C2220F ² 06037C2250F ² 06037C2275F ² 06037C2300F ² 06037C2325F ² 06037C2350F ²	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Lynwood, City of	060635	18070105	06037C1805F 06037C1815F 06037C1820F	
Malibu, City of	060745	18070104	06037C1485F 06037C1491F 06037C1492F 06037C1511F 06037C1512F 06037C1513F 06037C1514F 06037C1516F 06037C1517G 06037C1518F 06037C1519F 06037C1536F 06037C1537F 06037C1538F 06037C1539F 06037C1541F 06037C1542F 06037C1543F 06037C1561F 06037C1562F	
Manhattan Beach, City of	060138	18070104 18070106	06037C1770F 06037C1907F	
Maywood, City of ¹	060651	18070105	06037C1805F 06037C1810F	
Monrovia, City of ¹	065046	18070105 18070106	06037C1400F 06037C1405F ² 06037C1415F 06037C1675F ² 06037C1700F	
Montebello, City of	060141	18070105	06037C1645F 06037C1663F 06037C1664F 06037C1665F 06037C1810F 06037C1830F	
Monterey Park, City of ¹	065047	18070105	06037C1635F ² 06037C1641F ² 06037C1645F 06037C1663F 06037C1665F 06037C1675F ²	
Norwalk, City of	060652	18070106	06037C1837F 06037C1839F 06037C1840F 06037C1841F 06037C1843F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Palmdale, City of	060144	18070102 18090206	06037C0400F 06037C0415F 06037C0420F 06037C0442F 06037C0444F 06037C0450F 06037C0462F 06037C0464F 06037C0465F 06037C0466F 06037C0468F 06037C0635F 06037C0645F 06037C0651F 06037C0652F ² 06037C0653F 06037C0656F 06037C0657F 06037C0658F 06037C0659F 06037C0665F 06037C0670F 06037C0694F 06037C0700F 06037C0701F 06037C0702F 06037C0703F 06037C0704F 06037C0706F 06037C0710F 06037C0711F 06037C0713F	
Palos Verdes Estates, City of	060145	18070104 18070106	06037C1916G 06037C1917G 06037C1918G 06037C1919G 06037C1940F	
Paramount, City of	065049	18070105 18070106	06037C1815F 06037C1820F	
Pasadena, City of ¹	065050	18070105	06037C1125F ² 06037C1375F 06037C1400F 06037C1635F ²	
Pico Rivera, City of	060148	18070105 18070106	06037C1663F 06037C1664F 06037C1668F 06037C1829F 06037C1830F	
Pomona, City of ¹	060149	18070106 18070203	06037C1725F 06037C1750F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Rancho Palos Verdes, City of ¹	060464	18070104 18070106	06037C1917G 06037C1918G 06037C1919G 06037C1940F 06037C1945F 06037C2025F 06037C2026F 06037C2027F 06037C2031F	
Redondo Beach, City of	060150	18070104 18070106	06037C1770F 06037C1790F 06037C1907F 06037C1909F 06037C1928F 06037C1930F	
Rolling Hills, City of ¹	060151	18070104 18070106	06037C1940F 06037C2026F 06037C2027F	
Rolling Hills Estates, City of ¹	065054	18070104 18070106	06037C1919G 06037C1940F	
Rosemead, City of ¹	060153	18070105	06037C1665F 06037C1675F ²	
San Dimas, City of	060154	18070106	06037C1440F 06037C1445F 06037C1725F	
San Fernando, City of ¹	060628	18070105	06037C1075F	
San Gabriel, City of ¹	065055	18070105	06037C1675F ²	
San Marino, City of ¹	065057	18070105	06037C1375F 06037C1400F 06037C1635F ² 06037C1675F ²	
Santa Clarita, City of	060729	18070102 18070105	06037C0805F 06037C0810F 06037C0815F 06037C0820F 06037C0830F 06037C0835F 06037C0840F 06037C0845F 06037C1030F 06037C1031F 06037C1032F 06037C1034F 06037C1075F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Santa Fe Springs, City of	060158	18070106	06037C1829F 06037C1830F 06037C1835F 06037C1837F 06037C1839F 06037C1840F 06037C1841F 06037C1843F 06037C1844F	
Santa Monica, City of	060159	18070104	06037C1567F 06037C1569F 06037C1590F 06037C1751F	
Sierra Madre, City of ¹	065059	18070105	06037C1400F	
Signal Hill, City of ¹	060161	18070105 18070106	06037C1960F 06037C1970F	
South El Monte, City of ¹	060162	18070105 18070106	06037C1665F 06037C1670F 06037C1675F ²	
South Gate, City of	060163	18070105 18070106	06037C1805F 06037C1810F 06037C1815F 06037C1820F	
South Pasadena, City of ¹	065061	18070105	06037C1375F 06037C1635F ²	
Temple City, City of	060653	18070105	06037C1675F ²	
Torrance, City of	060165	18070104 18070106	06037C1790F 06037C1907F 06037C1909F 06037C1917G 06037C1928F 06037C1930F 06037C1935F 06037C1940F 06037C1945F	
Vernon, City of ¹	060166	18070105	06037C1638F 06037C1639F ² 06037C1643F ² 06037C1805F 06037C1810F	
Walnut, City of ¹	065069	18070106	06037C1695F 06037C1725F	
West Covina, City of	060666	18070106	06037C1695F 06037C1700F 06037C1725F	
West Hollywood, City of	060720	18070104	06037C1585F 06037C1605F	

Table 1: Listing of NFIP Jurisdictions, Continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Westlake Village, City of	060744	18070104	06037C1239F 06037C1240F ² 06037C1241F 06037C1243F 06037C1502F 06037C1505F ²	
Whittier, City of	060169	18070105 18070106	06037C1664F 06037C1668F 06037C1670F 06037C1830F 06037C1835F 06037C1842F 06037C1851F 06037C1853F 06037C1861F 06037C1875F	

¹ No Special Flood Hazard Areas Identified

² Panel Not Printed

1.4 Considerations for using this Flood Insurance Study Report

The NFIP encourages State and local governments to implement sound floodplain management programs. To assist in this endeavor, each FIS Report provides floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent annual chance flood elevations (the 1% annual chance flood elevation is also referred to as the Base Flood Elevation (BFE)); delineations of the 1% annual chance and 0.2% annual chance floodplains; and 1% annual chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, Floodway Data tables, Summary of Non-Coastal Stillwater Elevations tables, and Coastal Transect Parameters tables (not all components may be provided for a specific FIS).

- This section presents important considerations for using the information contained in this FIS Report and the FIRM, including changes in format and content. Figures 1, 2, and 3 present information that applies to using the FIRM with the FIS Report. Part or all of this FIS Report may be revised and republished at any time. In addition, part of this FIS Report may be revised by a Letter of Map Revision (LOMR), which does not involve republication or redistribution of the FIS Report. Refer to Section 6.5 of this FIS Report for information about the process to revise the FIS Report and/or FIRM.

It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 31, “Map Repositories,” within this FIS Report.

- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual

communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for the purposes of the NFIP.

The initial Countywide FIS Report for Los Angeles County became effective on September 26, 2008. Refer to Table 28 for information about subsequent revisions to the FIRMs.

- Selected FIRM panels for the community may contain information (such as floodways and cross sections) that was previously shown separately on the corresponding Flood Boundary and Floodway Map panels. In addition, former flood hazard zone designations have been changed as follows:

<u>Old Zone</u>	<u>New Zone</u>
A1 through A30	AE
V1 through V30	VE
B	X (shaded)
C	X (unshaded)

- The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Visit the FEMA Web site at <http://www.fema.gov> or contact your appropriate FEMA Regional Office for more information about this program.
- Previous FIS Reports and FIRMs may have included levees that were accredited as reducing the risk associated with the 1% annual chance flood based on the information available and the mapping standards of the NFIP at that time. For FEMA to continue to accredit the identified levees, the levees must meet the criteria of the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10), titled “Mapping of Areas Protected by Levee Systems.”

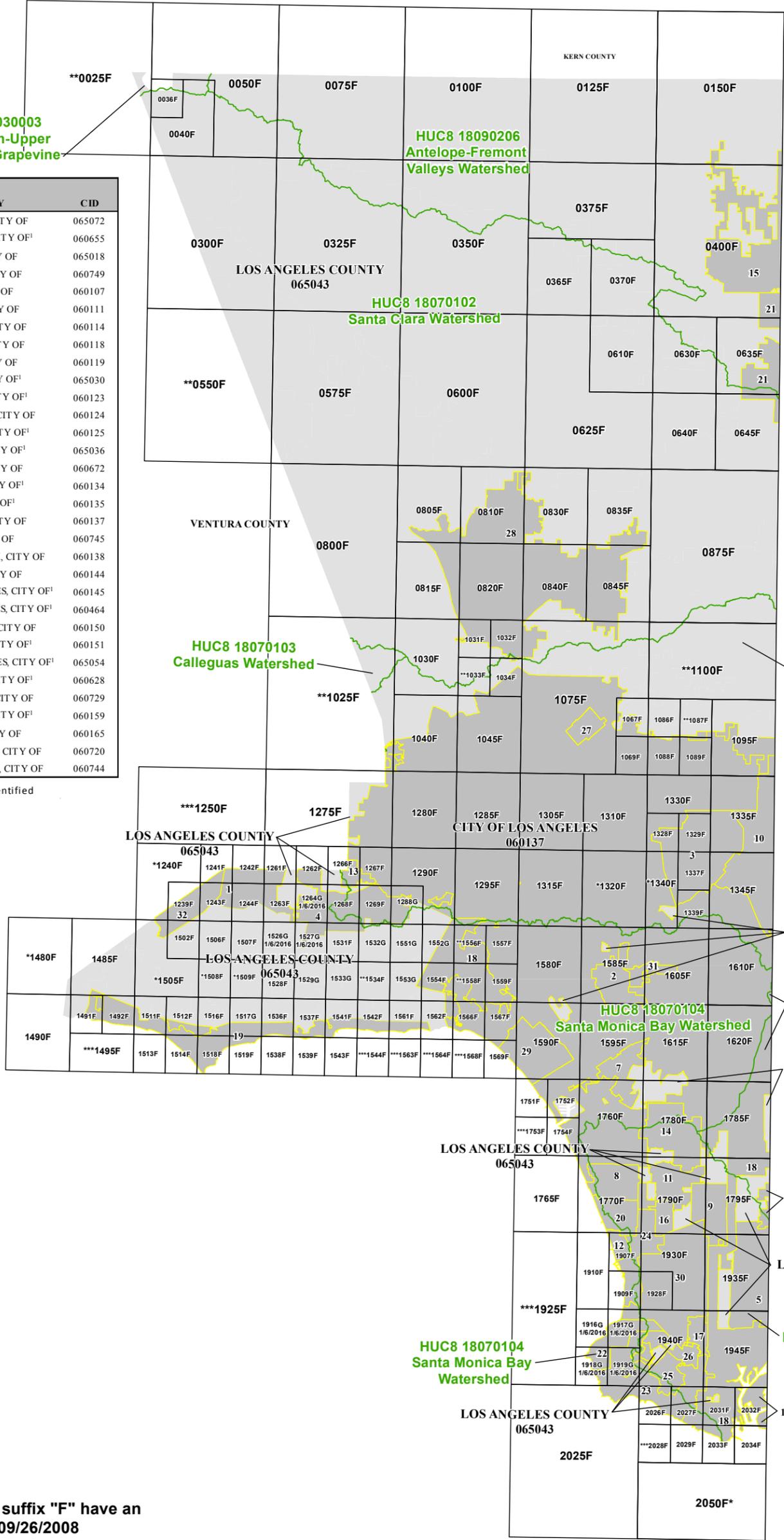
Since the status of levees is subject to change at any time, the user should contact the appropriate agency for the latest information regarding levees presented in Table 9 of this FIS Report. For levees owned or operated by the U.S. Army Corps of Engineers (USACE), information may be obtained from the USACE national levee database. For all other levees, the user is encouraged to contact the appropriate local community.

- FEMA has developed a *Guide to Flood Maps* (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM, visit the FEMA Web site at www.fema.gov/online-tutorials.

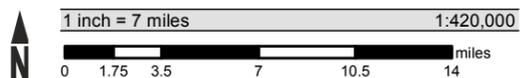
The FIRM Index in Figure 1 shows the overall FIRM panel layout within Los Angeles County, and also displays the panel number and effective date for each FIRM panel in the county. Other information shown on the FIRM Index includes community boundaries, watershed boundaries, and United States Geological Survey (USGS) Hydrologic Unit Code – 8 (HUC-8) codes.

KEY NUMBER	COMMUNITY	CID
1	AGOURA HILLS, CITY OF	065072
2	BEVERLY HILLS, CITY OF ¹	060655
3	BURBANK, CITY OF	065018
4	CALABASAS, CITY OF	060749
5	CARSON, CITY OF	060107
6	COMPTON, CITY OF	060111
7	CULVER CITY, CITY OF	060114
8	EL SEGUNDO, CITY OF	060118
9	GARDENA, CITY OF	060119
10	GLENDALE, CITY OF ¹	065030
11	HAWTHORNE, CITY OF ¹	060123
12	HERMOSA BEACH, CITY OF	060124
13	HIDDEN HILLS, CITY OF ¹	060125
14	INGLEWOOD, CITY OF ¹	065036
15	LANCASTER, CITY OF	060672
16	LAWNDALE, CITY OF ¹	060134
17	LOMITA, CITY OF ¹	060135
18	LOS ANGELES, CITY OF	060137
19	MALIBU, CITY OF	060745
20	MANHATTAN BEACH, CITY OF	060138
21	PALMDALE, CITY OF	060144
22	PALOS VERDES ESTATES, CITY OF ¹	060145
23	RANCHO PALOS VERDES, CITY OF ¹	060464
24	REDONDO BEACH, CITY OF	060150
25	ROLLING HILLS, CITY OF ¹	060151
26	ROLLING HILLS ESTATES, CITY OF ¹	065054
27	SAN FERNANDO, CITY OF ¹	060628
28	SANTA CLARITA, CITY OF	060729
29	SANTA MONICA, CITY OF ¹	060159
30	TORRANCE, CITY OF	060165
31	WEST HOLLYWOOD, CITY OF	060720
32	WESTLAKE VILLAGE, CITY OF	060744

¹ No Special Flood Hazard Areas Identified



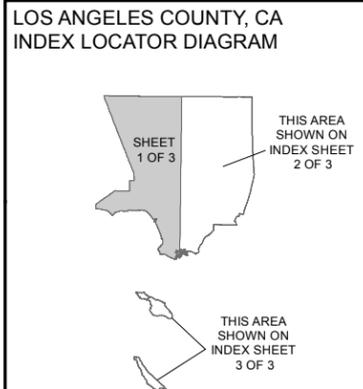
All Panels with a suffix "F" have an effective date of 09/26/2008



Map Projection:
Universal Transverse Mercator Zone 11 North;
North American Datum 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION
*PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS
**PANEL NOT PRINTED - AREA ALL IN ZONE D
***PANEL NOT PRINTED - AREA OUTSIDE COUNTY BOUNDARY



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP INDEX (Sheet 1 of 3)

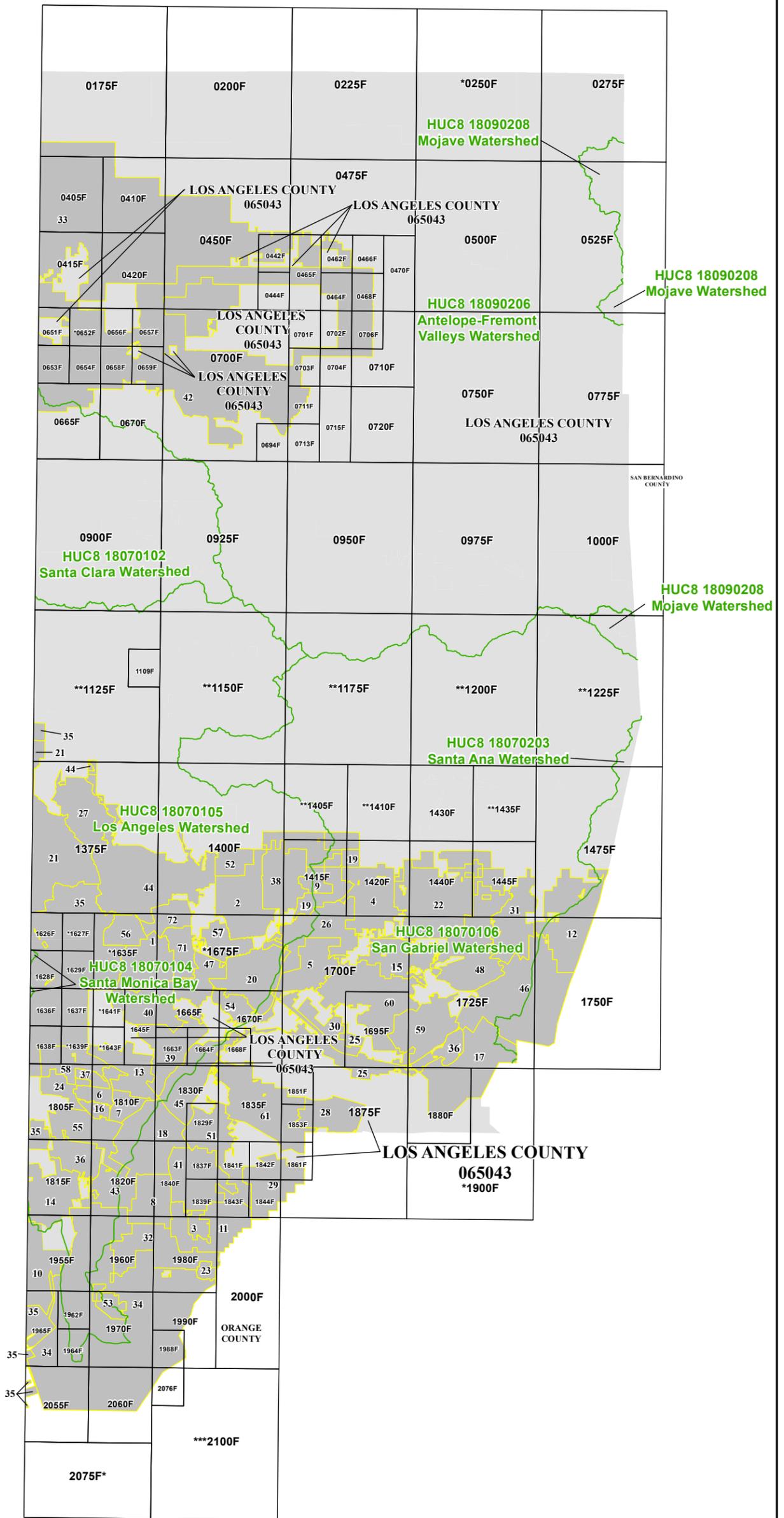
LOS ANGELES COUNTY, CALIFORNIA and Incorporated Areas
PANELS PRINTED:

0036, 0040, 0050, 0075, 0100, 0125, 0150, 0300, 0325, 0350, 0365, 0370, 0375, 0400, 0575, 0600, 0610, 0625, 0630, 0635, 0640, 0645, 0800, 0805, 0810, 0815, 0820, 0830, 0835, 0840, 0845, 0875, 1030, 1031, 1032, 1034, 1040, 1045, 1067, 1069, 1075, 1086, 1088, 1089, 1095, 1239, 1241, 1242, 1243, 1244, 1261, 1262, 1263, 1264, 1266, 1267, 1268, 1269, 1275, 1280, 1285, 1288, 1290, 1295, 1305, 1310, 1315, 1328, 1329, 1330, 1335, 1337, 1339, 1345, 1485, 1490, 1491, 1492, 1502, 1506, 1507, 1511, 1512, 1513, 1514, 1516, 1517, 1518, 1519, 1526, 1527, 1528, 1529, 1531, 1532, 1533, 1536, 1537, 1538, 1539, 1541, 1542, 1543, 1551, 1552, 1553, 1554, 1557, 1559, 1561, 1562, 1566, 1567, 1569, 1580, 1585, 1590, 1595, 1605, 1610, 1615, 1620, 1751, 1752, 1754, 1760, 1765, 1770, 1780, 1785, 1790, 1795, 1909, 1910, 1916, 1917, 1918, 1919, 1928, 1930, 1935, 1940, 1945, 2025, 2026, 2027, 2029, 2031, 2032, 2033, 2034

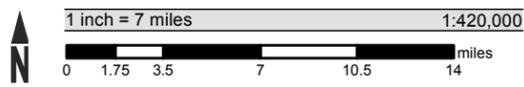
FEMA
PRELIMINARY
MARCH 9, 2016
MAP NUMBER
06037CIND1C
MAP REVISED

KEY NUMBER	COMMUNITY	CID
1	ALHAMBRA, CITY OF ¹	060095
2	ARCADIA, CITY OF	065014
3	ARTESIA, CITY OF ¹	060097
4	AZUSA, CITY OF	065015
5	BALDWIN PARK, CITY OF ¹	060100
6	BELL, CITY OF ¹	060101
7	BELL GARDENS, CITY OF	060656
8	BELLFLOWER, CITY OF	060102
9	BRADBURY, CITY OF ¹	065017
10	CARSON, CITY OF	060107
11	CERRITOS, CITY OF	060108
12	CLAREMONT, CITY OF ¹	060109
13	COMMERCE, CITY OF	060110
14	COMPTON, CITY OF	060111
15	COVINA, CITY OF ¹	065024
16	CUDAHY, CITY OF	060657
17	DIAMOND BAR, CITY OF	060741
18	DOWNEY, CITY OF	060645
19	DUARTE, CITY OF ¹	065026
20	EL MONTE, CITY OF ¹	060658
21	GLENDALE, CITY OF ¹	065030
22	GLENDORA, CITY OF ¹	065031
23	HAWAIIAN GARDENS, CITY OF ¹	065032
24	HUNTINGTON PARK, CITY OF	060126
25	INDUSTRY, CITY OF ¹	065035
26	IRWINDALE, CITY OF ¹	060129
27	LA CANADA FLINTRIDGE, CITY OF ¹	060669
28	LA HABRA HEIGHTS, CITY OF ¹	060701
29	LA MIRADA, CITY OF	060131
30	LA PUENTE, CITY OF ¹	065039
31	LA VERNE, CITY OF ¹	060133
32	LAKEWOOD, CITY OF	060130
33	LANCASTER, CITY OF	060672
34	LONG BEACH, CITY OF	060136
35	LOS ANGELES, CITY OF	060137
36	LYNWOOD, CITY OF	060635
37	MAYWOOD, CITY OF ¹	060651
38	MONROVIA, CITY OF ¹	065046
39	MONTEBELLO, CITY OF ¹	060141
40	MONTEREY PARK, CITY OF ¹	065047
41	NORWALK, CITY OF	060652
42	PALMDALE, CITY OF	060144
43	PARAMOUNT, CITY OF ¹	065049
44	PASADENA, CITY OF ¹	065050
45	PICO RIVERA, CITY OF ¹	060148
46	POMONA, CITY OF ¹	060149
47	ROSEMEAD, CITY OF ¹	060153
48	SAN DIMAS, CITY OF	060154
49	SAN GABRIEL, CITY OF ¹	065055
50	SAN MARINO, CITY OF ¹	065057
51	SANTA FE SPRINGS, CITY OF	060158
52	SIERRA MADRE, CITY OF ¹	065059
53	SIGNAL HILL, CITY OF ¹	060161
54	SOUTH EL MONTE, CITY OF ¹	060162
55	SOUTH GATE, CITY OF	060163
56	SOUTH PASADENA, CITY OF ¹	065061
57	TEMPLE CITY, CITY OF	060653
58	VERNON, CITY OF	060166
59	WALNUT, CITY OF ¹	065069
60	WEST COVINA, CITY OF	060666
61	WHITTIER, CITY OF	060169

¹ No Special Flood Hazard Areas Identified



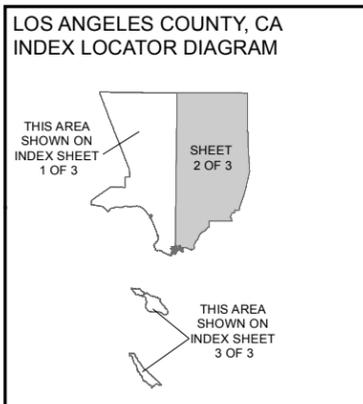
All Panels with a suffix "F" have an effective date of 09/26/2008



Map Projection:
Universal Transverse Mercator Zone 11 North;
North American Datum 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION
*PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS
**PANEL NOT PRINTED - AREA ALL IN ZONE D
***PANEL NOT PRINTED - AREA OUTSIDE COUNTY BOUNDARY



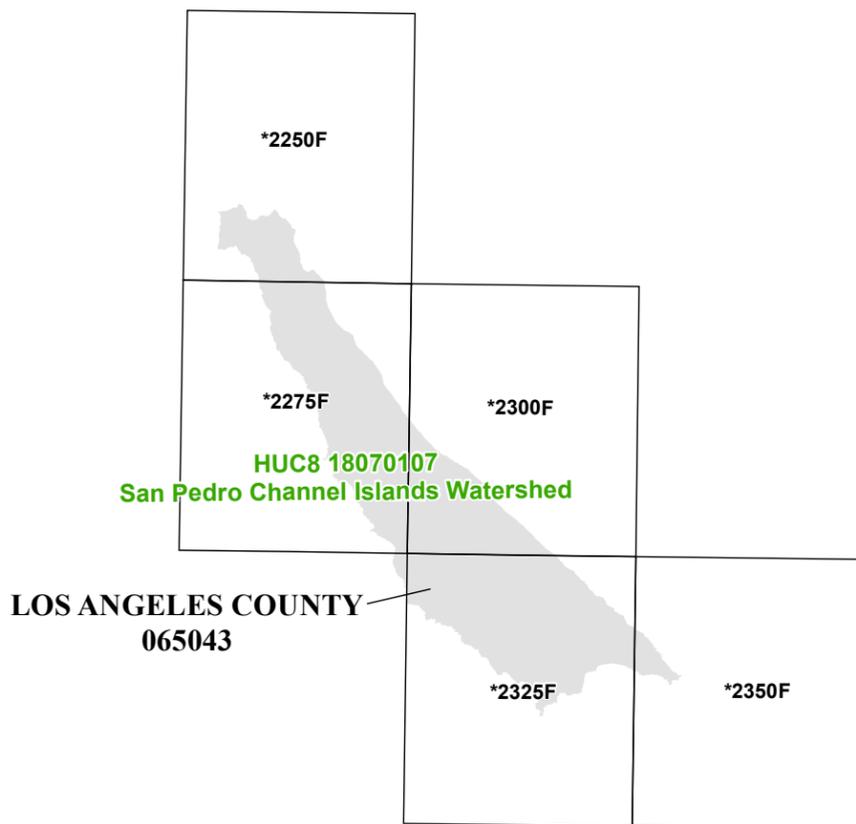
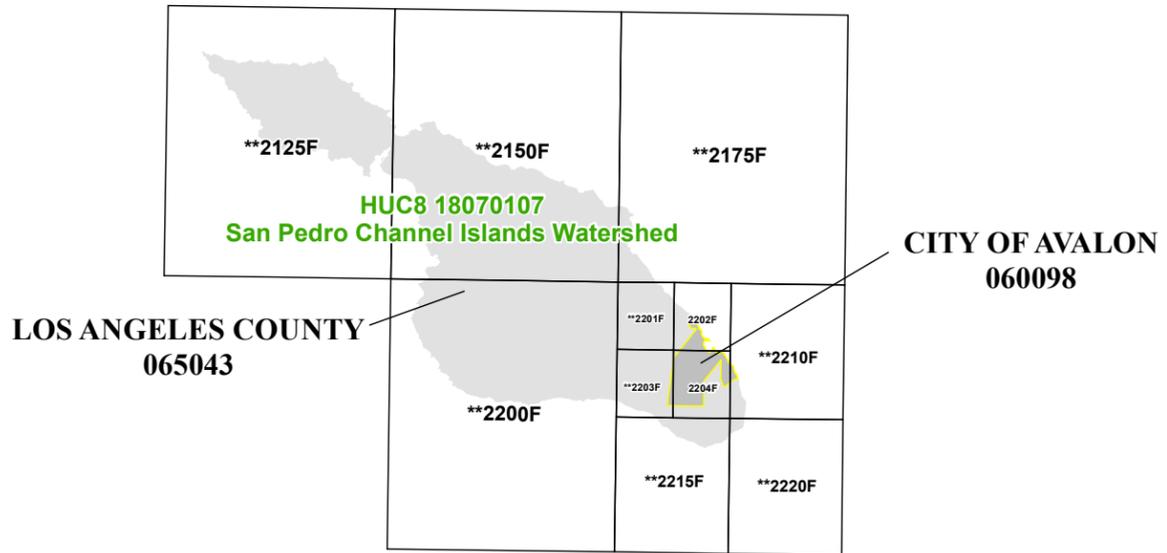
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP INDEX (Sheet 2 of 3)

LOS ANGELES COUNTY, CALIFORNIA and Incorporated Areas

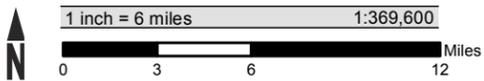
PANELS PRINTED:
0175, 0200, 0225, 0275, 0405, 0410, 0415, 0420, 0442, 0444, 0450, 0462, 0464, 0465, 0466, 0468, 0470, 0475, 0500, 0525, 0651, 0653, 0654, 0656, 0657, 0658, 0659, 0665, 0670, 0694, 0700, 0701, 0702, 0703, 0704, 0706, 0710, 0711, 0713, 0715, 0720, 0750, 0775, 0900, 0925, 0950, 0975, 1000, 1109, 1375, 1400, 1415, 1420, 1430, 1440, 1445, 1475, 1626, 1628, 1629, 1636, 1637, 1638, 1645, 1663, 1664, 1665, 1668, 1670, 1695, 1700, 1725, 1750, 1805, 1810, 1815, 1820, 1829, 1830, 1835, 1837, 1839, 1840, 1841, 1842, 1843, 1844, 1851, 1853, 1861, 1875, 1880, 1955, 1960, 1962, 1964, 1965, 1970, 1980, 1988, 1990, 2000, 2055, 2060, 2076



FEMA
PRELIMINARY
MARCH 9, 2016
MAP NUMBER
06037CIND2C
MAP REVISED



All Panels with a suffix "F" have an effective date of 09/26/2008



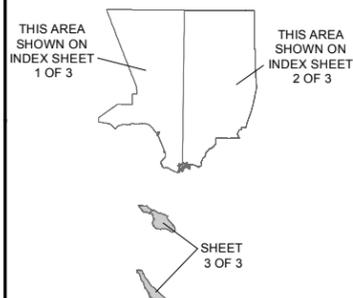
Map Projection:
Universal Transverse Mercator Zone 11 North;
North American Datum 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

*PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS
**PANEL NOT PRINTED - AREA ALL IN ZONE D

LOS ANGELES COUNTY, CA
INDEX LOCATOR DIAGRAM



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP INDEX (Sheet 3 of 3)

LOS ANGELES COUNTY, CALIFORNIA and Incorporated Areas
PANELS PRINTED:
2202, 2204



FEMA
PRELIMINARY
MARCH 9, 2016
MAP NUMBER
06037CIND3C
MAP REVISED

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough space to show all the notes that may be relevant in helping to better understand the information on the panel. Figure 2 contains the full list of these notes.

Figure 2: FIRM Notes to Users

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates, refer to Table 28 in this FIS Report.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PRELIMINARY FIS REPORT: FEMA maintains information about map features, such as street locations and names, in or near designated flood hazard areas. Requests to revise information in or near designated flood hazard areas may be provided to FEMA during the community review period, at the final Consultation Coordination Officer's meeting, or during the statutory 90-day appeal period. Approved requests for changes will be shown on the final printed FIRM.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

Coastal Base Flood Elevations shown on the map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Coastal flood elevations are also provided in the Coastal Transect Parameters table in the FIS Report for this jurisdiction. Elevations shown in the Coastal Transect Parameters table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on the FIRM.

FLOODWAY INFORMATION: 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 FIS Report for this jurisdiction.

Figure 2: FIRM Notes to Users, Continued

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

PROJECTION INFORMATION: The projection used in the preparation of the map was Universal Transverse Mercator (UTM) Zone 11N. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane 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 the FIRM.

ELEVATION DATUM: Flood elevations on the FIRM 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 www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

*NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242*

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table 31 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on this FIRM was derived from multiple sources. Vector base map data was provided by the Los Angeles County Department of Public Works and the Los Angeles County GIS Department. Digital ortho imagery was collected by the U.S. Department of Agriculture National Agriculture Imagery Program (NAIP). This imagery was flown in 2014 and was produced with a 1-meter ground sample distance. For information about base maps, refer to Section 6.2 "Base Map" in this FIS Report.

The 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 may reflect stream channel distances that differ from what is shown on the map.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Los Angeles County, California, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 28 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

Figure 2: FIRM Notes to Users, Continued

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Los Angeles County, California, effective TBD.

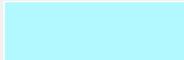
ACCREDITED LEVEE: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit www.fema.gov/national-flood-insurance-program.

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Los Angeles County.

Figure 3: Map Legend for FIRM

SPECIAL FLOOD HAZARD AREAS: *The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. 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. See note for specific types. If the floodway is too narrow to be shown, a note is shown.*



Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)

- Zone A The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
- Zone AE The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone, either at cross section locations or as static whole-foot elevations that apply throughout the zone.
- Zone AH The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
- Zone AO The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone.
- Zone AR The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. 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 The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
- Zone V The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.
- Zone VE Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.



Regulatory Floodway determined in Zone AE.

Figure 3: Map Legend for FIRM, Continued

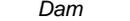
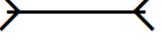
OTHER AREAS OF FLOOD HAZARD	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.
	Area with Reduced Flood Risk due to Levee: Areas where an accredited levee, dike, or other flood control structure has reduced the flood risk from the 1% annual chance flood. See Notes to Users for important information.
OTHER AREAS	
	Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.
	Unshaded Zone X: Areas of minimal flood hazard.
FLOOD HAZARD AND OTHER BOUNDARY LINES	
 (ortho) (vector)	Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping)
	Limit of Study
	Jurisdiction Boundary
	Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet
GENERAL STRUCTURES	
 <i>Aqueduct Channel Culvert Storm Sewer</i>	Channel, Culvert, Aqueduct, or Storm Sewer
 <i>Dam Jetty Weir</i>	Dam, Jetty, Weir
	Levee, Dike, or Floodwall accredited or provisionally accredited to reduce the flood risk from the 1% annual chance flood.
	Levee, Dike or Floodwall not accredited to reduce the flood risk from the 1% annual chance flood.
 <i>Bridge</i>	Bridge

Figure 3: Map Legend for FIRM, Continued

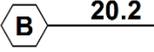
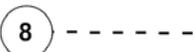
<p>COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA): <i>CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.</i></p>	
 CBRS AREA 09/30/2009	Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway.
 OTHERWISE PROTECTED AREA 09/30/2009	Otherwise Protected Area
<p>REFERENCE MARKERS</p>	
	River mile Markers
<p>CROSS SECTION & TRANSECT INFORMATION</p>	
	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
	Coastal Transect
 	<p>Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.</p> <p>Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.</p>
	Base Flood Elevation Line (shown for flooding sources for which no cross sections or profile are available)
<p>ZONE AE (EL 16)</p>	Static Base Flood Elevation value (shown under zone label)
<p>ZONE AO (DEPTH 2)</p>	Zone designation with Depth
<p>ZONE AO (DEPTH 2) (VEL 15 FPS)</p>	Zone designation with Depth and Velocity

Figure 3: Map Legend for FIRM, Continued

BASE MAP FEATURES	
 <i>Malibu Creek</i>	River, Stream or Other Hydrographic Feature
	Interstate Highway
	U.S. Highway
	State Highway
	County Highway
MAPLE LANE 	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
 <i>RAILROAD</i>	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
⁴²76^{000m}E	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16' 52.5"	Corner Coordinates (Latitude, Longitude)

SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

2.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1% annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2% annual chance (500-year) flood is employed to indicate additional areas of flood hazard in the community.

Each flooding source included in the project scope has been studied and mapped using professional engineering and mapping methodologies that were agreed upon by FEMA and Los Angeles County as appropriate to the risk level. Flood risk is evaluated based on factors such as known flood hazards and projected impact on the built environment. Engineering analyses were performed for each studied flooding source to calculate its 1% annual chance flood elevations; elevations corresponding to other floods (e.g. 10-, 4-, 2-, 0.2-percent annual chance, etc.) may have also been computed for certain flooding sources. Engineering models and methods are described in detail in Section 5.0 of this FIS Report. The modeled elevations at cross sections were used to delineate the floodplain boundaries on the FIRM; between cross sections, the boundaries were interpolated using elevation data from various sources. More information on specific mapping methods is provided in Section 6.0 of this FIS Report.

Depending on the accuracy of available topographic data (Table 23), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1% and 0.2% annual chance floodplain boundaries, regulatory water surface elevations (BFEs), and/or a regulatory floodway. Similarly, other flooding sources may be mapped to show only the 1% annual chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundary is shown on the FIRM. Figure 3, “Map Legend for FIRM”, describes the flood zones that are used on the FIRMs to account for the varying levels of flood risk that exist along flooding sources within the project area. Table 2 and Table 3 indicate the flood zone designations for each flooding source and each community within Los Angeles County, CA, respectively.

Table 2, “Flooding Sources Included in this FIS Report,” lists each flooding source, including its study limits, affected communities, mapped zone on the FIRM, and the completion date of its engineering analysis from which the flood elevations on the FIRM and in the FIS Report were derived. Descriptions and dates for the latest hydrologic and hydraulic analyses of the flooding sources are shown in Table 13. Floodplain boundaries for these flooding sources are shown on the FIRM (published separately) using the symbology described in Figure 3. On the map, the 1% annual chance floodplain corresponds to the SFHAs. The 0.2% annual chance floodplain shows areas that, although out of the regulatory floodplain, are still subject to flood hazards.

Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data. The procedures to remove these areas from the SFHA are described in Section 6.5 of this FIS Report.

Table 2: Flooding Sources Included in this FIS Report

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Acton Canyon Creek, Tributary 1, 1-A and 2	Los Angeles County	—	—	18070102	4.0	—	N	A	—
Agua Amarge Canyon Creek	Palos Verdes Estates, City of	—	—	18070104	0.7	—	N	A	—
Agua Dulce Canyon Creek	Los Angeles County	Confluence with Santa Clara River	0.8 miles upstream of State Highway 14	18070102	3.2	—	N	A, AO	—
Agua Dulce Canyon Creek	Los Angeles County	Approximately 900 feet upstream of Sierra Highway	0.6 miles upstream of Hierba Road	18070102	1.0	—	N	A	—
Agua Dulce Canyon Creek Lateral	Los Angeles County	Confluence with Agua Dulce Canyon Creek	0.2 miles upstream of confluence with Agua Dulce Canyon Creek	18070102	0.2	—	Y	AE	2008
Alamitos Bay	Long Beach, City of	—	—	18070106	1.9	—	N	A	—
Aliso Canyon Creek	Los Angeles, City of, Los Angeles County	—	—	18070102	10.4	—	N	A	—
Amargosa Creek	City of Lancaster, Los Angeles County, Palmdale, City of	—	—	18090206	13.8	—	N	A, AH, AO	1985
Amargosa Creek	Los Angeles County, Palmdale, City of	—	—	18090206	6.4	—	N	AE	1985

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Amargosa Creek	Los Angeles County, Palmdale, City of	—	—	18090206	7.2	—	N	A, AO	1985
Amargosa Creek Tributary	Lancaster, City of	—	—	18090206	0.3	—	N	A	—
Anaverde Creek	Palmdale, City of	—	—	18090206	3.5	—	Y	AE	1985
Anaverde Creek	Palmdale, City of	—	—	18090206	2.0	—	N	A	1985
Arrastre Canyon Creek	Los Angeles County	—	—	18070102	1.0	—	N	A	—
Arroyo Calabasas	Los Angeles, City of	—	—	18070105	0.1	—	N	AE	—
Arroyo San Miguel	Whittier, City of	—	—	18070106	0.1	—	N	A	1978
Arroyo Sequit	Los Angeles County	—	—	18070104	2.3	—	N	A	—
Avalon Bay	Avalon, City of	—	—	18070107	0.4	—	N	AE	—
Avalon Canyon	Avalon, City of	At confluence with Pacific Ocean	0.9 miles upstream of confluence with Pacific Ocean	18070107	0.9	—	N	AE	—
Back Channel	Long Beach, City of	—	—	18070104	0.9	—	N	AE	—
Ballona Creek	Los Angeles, City of	—	—	18070104	0.6	—	N	AE	—
Ballona Creek	Culver City, City of, Los Angeles, City of	—	—	18070104	1.8	—	N	A, AO	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Bar Creek	Diamond Bar, City of	—	—	18070106	0.1	—	N	A, AO	—
Bee Canyon Creek	Los Angeles County	—	—	18070102	0.9	—	N	A	—
Bee Canyon Creek (2)	Los Angeles County	—	—	18070102	0.9	—	N	A	—
Bee Canyon Creek (3)	Los Angeles, City of	—	—	18070105	0.6	—	N	A	—
Big Rock Creek	Los Angeles County	—	—	18090206	5.7	—	N	A	—
Big Rock Creek South Fork	Los Angeles County	—	—	18090206	1.2	—	N	A	—
Big Rock Wash	Lancaster, City of, Los Angeles County	—	—	18090206	25.7	—	N	A	—
Big Rock Wash (Profile Base Line)	Palmdale, City of	City of Palmdale Corporate Limits	City of Palmdale Corporate Limits	18090206	4.0	—	N	AE	1985
Big Tujunga Wash	Los Angeles, City of	—	—	18070105	6.8	—	N	A, AO	—
Boulder Canyon Creek	Los Angeles County	—	—	18090206	3.8	—	N	A	—
Bouquet Canyon Creek	Los Angeles County	—	—	18070102	0.9	—	N	A	—
Bouquet Reservoir	Los Angeles County	—	—	18070102	2.1	0.9	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Broad Canyon Creek	Los Angeles County	—	—	18090206	8.0	—	N	A	—
Browns Creek	Los Angeles, City of	—	—	18070105	1.0	—	N	AO	—
California Aqueduct	Los Angeles County	—	—	18090206	6.2	—	N	A	—
Canada De Los Alamos Creek	Los Angeles County	—	—	18070102	3.9	—	N	A	—
Carlos Canyon Creek	Los Angeles County	—	—	18070102	0.1	—	N	A	—
Carr Canyon Creek	Los Angeles County	—	—	18090206	0.3	—	N	A	—
Castaic Creek	Los Angeles County	—	—	18070102	6.2	—	N	A	—
Castaic Lagoon	Los Angeles County	—	—	18070102	1.3	0.31	N	A	—
Castaic Lake	Los Angeles County	—	—	18070102	5.7	4.0	N	A	—
Channel No. 2	Long Beach, City of	—	—	18070104	0.8	—	N	AE	—
Channel No. 3	Long Beach, City of	—	—	18070104	0.7	—	N	AE	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Charlie Canyon Creek	Los Angeles County	—	—	18070102	2.0	—	N	A	—
Chatsworth Reservoir	Los Angeles, City of	—	—	18070105	1.5	0.7	N	A	—
Cherry Canyon Creek	Los Angeles County	—	—	18070102	3.2	—	N	A	—
Cheseboro Creek	Agoura Hills, City of, Los Angeles County	—	—	18070104	0.5	—	N	AE	—
Cold Creek	Los Angeles County	—	—	18070104	1.5	—	N	AE	2015
Cold Creek	Los Angeles County	—	—	18070104	2.3	—	N	A	—
Colorado Lagoon	Long Beach, City of	—	—	18070106	0.4	0.02	N	AE	—
Consolidated Channel	Los Angeles, City of	—	—	18070104	0.6	—	N	AE	—
Coyote Canyon Creek	Santa Clarita, City of	—	—	18070102	0.7	—	N	A, AO	—
Coyote Creek	Long Beach, City of	—	—	18070106	2.6	—	N	A	—
Cruthers Creek	Los Angeles County	—	—	18090206	0.6	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Dark Canyon	Los Angeles County	—	—	18070104	0.5	—	N	AE	2015
Dark Canyon West Branch	Los Angeles County	—	—	18070104	0.2	—	N	A	2015
Dewitt Canyon Creek	Los Angeles County	—	—	18070102	0.1	—	N	A	—
Dorr Canyon Creek	Los Angeles County	—	—	18090206	1.1	—	N	A	—
Dowd Canyon Creek	Los Angeles County	—	—	18070102	1.8	—	N	A, AO	—
Dry Canyon	Los Angeles County, Calabasas, City of Santa Clarita, City of	—	—	18070102	3.6	—	N	A, AO, AE	—
East Basin	Los Angeles, City of	—	—	18070104	0.8	—	N	AE	—
Elizabeth Canyon Creek	Los Angeles County	—	—	18070102	2.7	—	N	A, AO	—
Elizabeth Lake	Los Angeles County	—	—	18070102	1.7	0.3	N	A	—
Elizabeth Lake Canyon Creek	Los Angeles County	—	—	18070102	5.0	—	N	A	—
Eller Slough	Los Angeles County	—	—	18090206	3.7	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Elsmere Canyon Creek	Santa Clarita, City of	—	—	18070102	0.8	—	N	A	—
Encino Reservoir	Los Angeles, City of	—	—	18070105	0.7	0.2	N	A	—
Entrance Channel (Marina Del Ray)	Los Angeles County, Los Angeles, City of	—	—	18070104	0.5	—	N	AE	—
Escondido Canyon	Los Angeles County	—	—	18070104	0.7	—	N	AE	2015
Escondido Canyon	Malibu, City of	—	—	18070104	0.7	—	N	A	—
Fenner Canyon Creek	Los Angeles County	—	—	18090206	0.3	—	N	A	—
Fish Harbor	Los Angeles, City of	—	—	18070104	0.6	—	N	AE	—
Flood Control Channel to Aliso Creek	Los Angeles, City of	—	—	18070105	0.9	—	N	A	—
Flowline No. 1	Santa Fe Springs, City of	—	—	18070106	0.6	—	N	AE	1978
Garapito Creek	Los Angeles County	—	—	18070104	0.7	—	N	AE	—
Gavin Canyon Creek	Los Angeles County, Santa Clarita, City of	—	—	18070102	1.0	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Gorman Creek	Los Angeles County	—	—	18070102	11.5	—	N	A, AH, AO	—
Gorman Canyon Creek	Santa Clarita, City of	—	—	18070102	0.9	—	N	A, AO	—
Graham Canyon Creek	Los Angeles County	—	—	18090206	3.0	—	N	A	—
Grandview Canyon Creek	Los Angeles County	—	—	18090206	4.9	—	N	A	—
Grandview Canyon Creek (2)	Los Angeles County	—	—	18090206	2.3	—	N	A	—
Harbor Lake	Los Angeles, City of	—	—	18070104	0.6	0.1	N	AE	—
Haskell Canyon	Los Angeles County, Santa Clarita, City of	—	—	18070102	1.7	—	N	AO	—
Hasley Canyon Creek	Los Angeles County	—	—	18070102	4.6	—	N	A	—
Holcomb Canyon Creek	Los Angeles County	—	—	18090206	0.9	—	N	A	—
Holmes Creek	Los Angeles County	—	—	18090206	0.8	—	N	A	—
Hughes Lake	Los Angeles County	—	—	18070102	0.4	0.05	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Iron Canyon	Los Angeles County, Santa Clarita, City of	Confluence with Sand Canyon Creek	0.5 miles upstream of North Iron Canyon Road	18070102	1.7	—	Y	AE, AO	2010
Jesus Canyon Creek	Los Angeles County	—	—	18090206	3.3	—	N	A	—
Kagel Canyon Creek	Los Angeles, City of	—	—	18070105	0.2	—	Y	AE	—
Kagel Canyon Creek	Los Angeles County	—	—	18070105	1.1	—	N	AE	—
Kentucky Springs Canyon Creek	Los Angeles County	—	—	18070102	3.7	—	N	A	—
La Mirada Creek	La Mirada, City of	—	—	18070106	1.5	—	N	AE	—
Lake Lindero	Agoura Hills, City of, Westlake Village, City of	—	—	18070104	0.3	0.02	N	A	—
Lake Palmdale	Los Angeles County	—	—	18090206	1.1	0.4	N	A	—
Lake Street Overflow	Burbank, City of	—	—	18070105	0.2	—	N	AE	—
Las Flores Canyon	Los Angeles County, Malibu, City of	—	—	18070104	0.9	—	N	AE	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Las Flores Canyon	Los Angeles County	—	—	18070104	0.4	—	N	A	—
Las Virgenes Creek	Calabasas, City of, Los Angeles County	At confluence with Malibu Creek	Immediately downstream of Las Virgenes Road	18070104	4.8	—	N	AE	2010
Leaming Canyon Creek	Los Angeles County	—	—	18070102	0.2	—	N	A	—
Lemontaine Creek	Los Angeles County	—	—	18090206	2.5	—	N	A	—
Liberty Canyon	Agoura Hills, City of, Los Angeles County	—	—	18070104	0.4	—	N	AE	—
Limekiln Creek	Los Angeles, City of	—	—	18070105	2.4	—	N	A	—
Lindero Canyon	Agoura Hills, City of, Westlake Village, City of	—	—	18070104	1.9	—	N	AE	—
Little Rock Creek	Los Angeles County	—	—	18090206	6.2	—	N	A	—
Little Rock Reservoir	Los Angeles County	—	—	18090206	0.6	0.08	N	A	—
Little Rock Wash	Lancaster, City of, Los Angeles County	—	—	18090206	9.7	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Little Rock Wash	Los Angeles County	—	—	18090206	4.3	—	N	A	—
Little Rock Wash - Profile A	Palmdale, City of	City of Palmdale Corporate Limits	City of Palmdale Corporate Limits	18090206	1.8	—	N	AE	1985
Little Rock Wash - Profile A	Los Angeles County	—	—	18090206	2.0	—	N	A	—
Little Rock Wash - Profile A	Los Angeles County, Palmdale, City of	—	—	18090206	3.1	—	N	AE	1985
Little Rock Wash - Profile A	Los Angeles County, Palmdale, City of	—	—	18090206	3.0	—	N	A	1985
Little Rock Wash - Profile B	Palmdale, City of	City of Palmdale Corporate Limits	City of Palmdale Corporate Limits	18090206	1.4	—	N	AE	1985
Little Rock Wash - Profile C	Los Angeles County, Palmdale, City of	—	—	18090206	0.9	—	N	AE	1985
Little Tujunga Wash	Los Angeles County, Los Angeles, City of	—	—	18070105	2.1	—	N	A, AO	—
Lobo Canyon	Los Angeles County	—	—	18070104	1.7	—	N	AE	—
Lockheed Drain Channel	Burbank, City of, Los Angeles, City of	—	—	18070105	2.7	—	N	AE, AO	—
Lopez Canyon Channel	Los Angeles County, Los Angeles, City of	—	—	18070105	0.1	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Lopez Canyon Channel	Los Angeles County, Los Angeles, City of	—	—	18070105	0.5	—	N	AE	—
Los Angeles County Flood Control Channel	Los Angeles, City of	—	—	18070105	0.9	—	N	A	—
Los Angeles County Flood Control Channel to Aliso Creek	Los Angeles, City of	—	—	18070105	2.5	—	N	A	—
Los Angeles County Storm Drain	Carson, City of, Los Angeles County	—	—	18070104	1.7	—	N	A	—
Los Angeles County Storm Drain (2)	Carson, City of	—	—	18070104	1.4	—	N	A	—
Los Angeles Harbor	Los Angeles, City of	—	—	18070104	2.8	—	N	AE	—
Los Angeles Reservoir	Los Angeles, City of	—	—	18070105	0.7	0.3	N	A	—
Los Angeles River	Compton, City of, Cudahy, City of, Long Beach, City of, Los Angeles County, Paramount, City of, South Gate, City of	—	—	18070105	13.3	—	N	A	1991
Los Angeles River Flood Control Channel	Burbank, City of	—	—	18070105	0.5	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Los Cerritos Channel (1)	Long Beach, City of, Los Angeles, City of	—	—	18070104	3.2	—	N	AE	—
Los Cerritos Channel (2)	Long Beach, City of	—	—	18070106	4.7	—	N	AE	—
Lyon Canyon Creek	Los Angeles County, Santa Clarita, City of	—	—	18070102	0.2	—	N	A	—
Main Channel	Los Angeles, City of	—	—	18070104	2.3	—	N	AE	—
Malaga Canyon Creek	Palos Verdes Estates, City of	—	—	18070104	1.4	—	N	A	—
Malibu Creek	Malibu, City of	—	—	18070104	0.3	—	N	A	—
Malibu Creek	Los Angeles County, Malibu, City of	—	—	18070104	0.6	—	N	AE	—
Malibu Creek	Los Angeles County, Malibu, City of	—	—	18070104	8.9	—	N	A	—
Malibu Lake	Los Angeles County	—	—	18070104	0.9	0.06	N	A	—
Marina Del Ray	Los Angeles County, Los Angeles, City of	—	—	18070104	1.5	—	N	AE	—
Marine Stadium	Long Beach, City of	—	—	18070106	1.8	—	N	AE	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Medea Creek	Agoura Hills, City of, Los Angeles County	—	—	18070104	4.5	—	N	AE	—
Middle Harbor	Long Beach, City of	—	—	18070104	1.7	—	N	AE	—
Mill Creek	Los Angeles County	—	—	18070105	1.0	—	N	AE	—
Milton B. Arthur Lakes	Long Beach, City of	—	—	18070106	0.5	0.05	N	A	—
Mint Canyon Creek	Santa Clarita, City of	Confluence with Santa Clara River	Immediately downstream of Adon Avenue	18070102	0.9	—	N	AE	2010
Mint Canyon Creek	Los Angeles County, Santa Clarita, City of	Immediately downstream of Adon Avenue	0.9 miles upstream of Rocking Horse Road	18070102	11.1	—	Y	AE	2010
Mint Canyon Creek Overflow	Santa Clarita, City of	Confluence with Santa Clara River	Immediately downstream of Adon Avenue	18070102	1.0	—	N	AE, AO	—
Mint Canyon Spring	Los Angeles County	—	—	18070102	0.3	—	N	A	—
Montebello Municipal Golf Course Pond	Montebello, City of	—	—	18070105	0.1	0.001	N	A	—
Muscal Creek	Los Angeles County	—	—	18090206	5.3	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Myrick Canyon Creek	Los Angeles County	—	—	18090206	2.1	—	N	A	—
Oak Springs Canyon Creek	Los Angeles County, Santa Clarita, City of	—	—	18070102	2.4	—	N	A	—
Oakgrove Canyon Creek	Los Angeles County	—	—	18090206	0.7	—	N	A	—
Old Topanga Canyon	Los Angeles County	—	—	18070104	2.1	—	N	A	—
Old Topanga Canyon	Los Angeles County	—	—	18070104	1.1	—	N	AE	2015
Oro Fino Canyon Creek	Santa Clarita, City of	—	—	18070102	0.3	—	N	A	—
Oso Canyon Creek	Los Angeles County	—	—	18090206	3.3	—	N	A	—
Pacific Ocean	El Segundo, City of; Hermosa Beach, City of; Los Angeles, City of; Los Angeles County; Malibu, City of; Manhattan Beach, City of; Santa Monica, City of	N/A	N/A	18070104	70		N	A, AE, V, VE, X	*
Pacific Ocean	Avalon, City of; Redondo Beach, City of	N/A	N/A	18070104	70		N	A, AE, V, VE, X	June 1981

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Pacific Ocean	Los Angeles, City of	N/A	N/A	18070104	70		N	A, AE, V, VE, X	1984
Pacific Ocean	Torrance, City of	N/A	N/A	18070104	70		N	A, AE, V, VE, X	August 1978
Pacific Terrace Harbor	Long Beach, City of	—	—	18070106	0.3	—	N	AE	—
Pacoima Channel	Los Angeles, City of	—	—	18070105	2.9	—	N	A	—
Pacoima Wash	Los Angeles County, Los Angeles, City of	—	—	18070105	2.0	—	N	A, AO	—
Pallett Creek	Los Angeles County	—	—	18090206	15.9	—	N	A	—
Palmdale Ditch	Los Angeles County	—	—	18090206	1.4	—	N	A	—
Palo Comando Creek	Agoura Hills, City of, Los Angeles County	—	—	18070104	1.3	—	N	AE	—
Palomas Canyon Creek	Los Angeles County	—	—	18070102	0.1	—	N	A	—
Pico Canyon	Los Angeles County, Santa Clarita, City of	—	—	18070102	0.6	—	N	A	1984
Pico Canyon	Los Angeles County	—	—	18070102	1.4	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Pine Canyon Creek	Los Angeles County	—	—	18070102	1.8	—	N	A	—
Pine Canyon Creek (3)	Palmdale, City of	—	—	18090206	0.7	—	N	A	1985
Pine Canyon Creek (4)	Los Angeles County	—	—	18090206	4.4	—	N	A	—
Piru Creek	Los Angeles County	—	—	18070102	1.7	—	N	A	—
Placerita Creek	Los Angeles County, Santa Clarita, City of	—	—	18070102	4.8	—	N	A	—
Plum Canyon	Los Angeles County	—	—	18070102	1.1	—	N	A	—
Portal Ridge Wash	Lancaster, City of	—	—	18090206	1.7	—	N	AH	—
Potrero Canyon	Los Angeles County	—	—	18070102	2.7	—	N	A	—
Potrero Valley Creek (Westlake Lake)	Westlake Village, City of	—	—	18070104	0.9	—	N	A	—
Puzzle Canyon Creek	Los Angeles County	—	—	18090206	2.4	—	N	A	—
Pyramid Lake	Los Angeles County	—	—	18070102	3.5	2.0	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Quail Lake	Los Angeles County	—	—	18090206	1.6	0.4	N	A	—
Quigley Canyon Creek	Santa Clarita, City of	—	—	18070102	1.5	—	N	A	1984
Railroad Canyon	Santa Clarita, City of	—	—	18070102	0.9	—	N	A, AO	1984
Ramirez Canyon	Los Angeles County, Malibu, City of	—	—	18070104	1.5	—	N	AE	—
Reservoir near UCLA	Los Angeles, City of	—	—	18070104	0.1	0.002	N	A	—
Rice Canyon Creek	Los Angeles County	—	—	18070102	0.5	—	N	A	—
Rio Hondo River	Bell Gardens, City of, Downey, City of, Los Angeles County, Montebello, City of, Pico Rivera, City of, South Gate, City of	—	—	18070105	9.6	—	N	A	1991
Rio Hondo River Tributary	Montebello, City of	—	—	18070105	0.4	—	N	AE	1991
Roberts Canyon Creek	Azusa, City of	—	—	18070106	0.4	—	N	A	—
Rock Creek	Los Angeles County	—	—	18090206	7.0	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Romero Canyon Creek	Los Angeles County	—	—	18070102	1.4	—	N	A	—
Rustic Canyon	Los Angeles, City of	—	—	18070104	4.0	—	N	A	—
Rustic Canyon	Los Angeles, City of	—	—	18070104	0.8	—	Y	AE	—
Salt Canyon Creek	Los Angeles County	—	—	18070102	2.4	—	N	A	—
San Dimas Wash	San Dimas, City of	—	—	18070106	0.5	—	N	AE	—
San Francisquito Canyon Creek	Los Angeles County	—	—	18070102	14.7	—	N	A, AO	—
San Gabriel River	Bellflower, City of, Cerritos, City of, Lakewood, City of, Long Beach, City of	—	—	18070106	9.4	—	N	A	—
San Gabriel River	Azusa, City of, Los Angeles County	—	—	18070106	0.4	—	N	A	—
San Martinez Chiquito Canyon	Los Angeles County	—	—	18070102	3.9	—	N	A, AO	—
San Martinez Grande Canyon Creek	Los Angeles County	—	—	18070102	1.1	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
San Pedro Bay	Long Beach, City of	—	—	18070104	1.0	—	N	AE	—
Sand Canyon Creek	Los Angeles County, Santa Clarita, City of	Confluence with Santa Clara River	0.4 miles upstream of Coyote Canyon Creek	18070102	3.6	—	Y	AE, AO	2010
Sand Canyon Creek (2)	Los Angeles County, Santa Clarita, City of	—	—	18070102	0.7	—	N	A, AO	1984
Sand Canyon Creek Tributary 1 and 2	Santa Clarita, City of	—	—	18070102	1.2	—	N	A, AO	1984
Santa Clara River	Los Angeles County	Approximately 1,200 feet downstream of Southern Pacific Railroad at Capra Road Tunnel	1.0 miles downstream of Arrastre Canyon Road	18070102	10.1	—	N	A	—
Santa Clara River	Los Angeles County	Confluence of Aliso Canyon Creek	1.3 miles upstream of confluence of Soledid Canyon Creek	18070102	3.2	—	N	A	—
Santa Maria Canyon	Los Angeles County	—	—	18070104	0.3	—	N	AE	2015
Santa Maria Canyon	Los Angeles County	—	—	18070104	0.4	—	N	A	—
Santa Susana Pass Wash	Los Angeles, City of	—	—	18070105	0.1	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Santa Ynez Canyon Reservoir	Los Angeles, City of	—	—	18070104	0.1	0.01	N	A	—
Savage Creek	Whittier, City of	—	—	18070106	0.7	—	N	AE	—
Sierra Canyon Creek	Los Angeles County	—	—	18070104	1.3	—	N	A	—
Sloan Canyon Creek	Los Angeles County	—	—	18070102	1.3	—	N	A	—
Soledad Canyon	Los Angeles County	—	—	18070102	1.7	—	N	A	—
South Portal Canyon Creek	Los Angeles County	—	—	18070102	0.4	—	N	A	—
Spade Spring Canyon Creek	Los Angeles County	Confluence with Mint Canyon Creek	2.8 miles upstream of confluence with Mint Canyon Creek	18070102	2.8	—	Y	AE	2010
Stokes Canyon	Los Angeles County	—	—	18070104	1.2	—	N	A	—
Stokes Canyon	Los Angeles County	—	—	18070104	0.8	—	N	AE	—
Sullivan Canyon Creek	Los Angeles, City of	—	—	18070104	1.7	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Sunshine Canyon Creek	Los Angeles, City of	—	—	18070105	0.1	—	N	A	—
Tacobi Creek	Whittier, City of	—	—	18070106	0.1	—	N	A	1978
Tapia Canyon Creek	Los Angeles County	—	—	18070102	1.3	—	N	A	—
Texas Canyon Creek	Los Angeles County	—	—	18070102	0.6	—	N	A, AO	—
Tonner Canyon Creek	Los Angeles County	—	—	18070106	1.2	—	N	A	—
Topanga Canyon	Los Angeles County, Los Angeles, City of	—	—	18070104	4.3	—	N	A, AE	—
Topanga Canyon	Los Angeles County	—	—	18070104	4.6	—	N	AE	2015
Towsley Canyon Creek	Los Angeles County, Santa Clarita, City of	—	—	18070102	2.6	—	N	A, AO	1984
Trancas Creek	Malibu, City of	—	—	18070104	0.3	—	N	AE	—
Triunfo Creek	Los Angeles County, Westlake Village, City of	—	—	18070104	3.9	—	N	A	—
Triunfo Creek	Westlake Village, City of	—	—	18070104	0.9	—	N	AE	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Turnbull Canyon Creek	Whittier, City of	—	—	18070106	0.7	—	N	AE, AO	1978
UNKNOWN 1 and 2 near W. 3rd Street	Los Angeles, City of, West Hollywood, City of	—	—	18070104	1.2	—	N	AO, A	1980, 1985
UNKNOWN 3 near W. 3rd Street	Los Angeles, City of	—	—	18070104	0.8	—	N	A	—
UNKNOWN 1 near 4th Street	Los Angeles, City of	—	—	18070104	0.2	—	N	A	—
UNKNOWN 1 near Aberdeen Avenue	Los Angeles, City of	—	—	18070104	0.9	—	N	A	—
UNKNOWN 1 and 2 near Alameda Street	Los Angeles, City of	—	—	18070104	0.4	—	N	A	—
UNKNOWN 1 near Alaska Avenue	Torrance, City of	—	—	18070104	0.2	—	N	AH	1978
UNKNOWN 1 near Amsler Street	Torrance, City of	—	—	18070104	0.1	—	N	AH	1978
UNKNOWN 1 to Anaverde Creek	Palmdale, City of	—	—	18090206	1.1	—	N	A	1985
UNKNOWN 1 near Anza Avenue	Torrance, City of	—	—	18070104	0.1	—	N	AH	1978

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
UNKNOWN 1 and 2 to Arroyo Calabasas	Hidden Hills, City of	—	—	18070105	1.2	—	N	A	—
UNKNOWN 1 and 2 near Baile Avenue	Los Angeles, City of	—	—	18070105	0.4	—	N	AE	—
UNKNOWN 1 near S. Beverley Glen Boulevard	Los Angeles, City of	—	—	18070104	0.1	—	N	AH	—
UNKNOWN 1, 1-A and 2 to Big Rock Wash	Los Angeles County	—	—	18090206	9.5	—	N	A, AO	—
UNKNOWN 1 near Blinn Avenue	Los Angeles, City of	—	—	18070104	0.2	—	N	A	—
UNKNOWN 1, 2 and 3 to Broad Canyon Creek	Los Angeles County	—	—	18090206	4.5	—	N	A	—
UNKNOWN 1, 2, 3, 4 and 5 to California Aqueduct	Los Angeles County	—	—	18090206	6.9	—	N	A	—
UNKNOWN 1 near Camino Real Calle	Redondo Beach, City of	—	—	18070104	0.2	—	N	AE	1981
UNKNOWN 1 near Chaparal Street	Los Angeles, City of	—	—	18070104	0.2	—	N	AH	—
UNKNOWN 1 near Childs Court	Los Angeles, City of	—	—	18070104	0.9	—	N	AO	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
UNKNOWN 1 near Club View Drive	Los Angeles, City of	—	—	18070104	0.1	—	N	AH	—
UNKNOWN 1 near Denker Avenue	Los Angeles, City of	—	—	18070104	0.1	—	N	AH	—
UNKNOWN 1, 2 and 2-A near Edwards AF Base	Los Angeles County	—	—	18090206	5.5	—	N	A	—
UNKNOWN 1 near Eubank Avenue	Los Angeles, City of	—	—	18070104	0.1	—	N	A	—
UNKNOWN 1 and 2 near Glade Avenue	Los Angeles, City of	—	—	18070105	0.2	—	N	AE, AH	—
UNKNOWN 1, 2 and 3 to Glenoaks Boulevard	Los Angeles, City of	—	—	18070105	1.5	—	N	A	—
UNKNOWN 1 near Gould Avenue	Redondo Beach, City of	—	—	18070104	0.1	—	N	AE	1981
UNKNOWN 1 near Grenola Street	Los Angeles, City of	—	—	18070104	0.6	—	N	A	—
UNKNOWN 1 near N. Hoover Street	Los Angeles, City of	—	—	18070104	0.4	—	N	AH	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
UNKNOWN 1 near S. La Cienega Boulevard	Los Angeles, City of	—	—	18070104	0.1	—	N	A	—
UNKNOWN 1 near Lake Palmdale	Palmdale, City of	—	—	18090206	0.7	—	N	A	1985
UNKNOWN 1 near Laurel Canyon Boulevard	Los Angeles, City of	—	—	18070104	1.0	—	N	AO	—
UNKNOWN 1, 2 and 3 to Little Rock Wash	Los Angeles County	—	—	18090206	5.8	—	N	A, AO	—
UNKNOWN 1 near Long Beach Freeway	Lynwood, City of	—	—	18070105	0.3	—	N	AH	—
UNKNOWN 1 near Louise Avenue	Lynwood, City of	—	—	18070105	0.7	—	N	AH	—
UNKNOWN 1 near Lucerne Boulevard	Los Angeles, City of	—	—	18070104	0.3	—	N	AH	—
UNKNOWN 1 near S. Main Street	Burbank, City of	—	—	18070105	0.3	—	N	AO	—
UNKNOWN 1 near Magnolia Avenue	Los Angeles, City of	—	—	18070105	0.2	—	N	AH	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
UNKNOWN 1, 2 and 2-A to Malaga Canyon Creek	Palos Verdes Estates, City of	—	—	18070104	1.4	—	N	A	—
UNKNOWN 1 near Marathon Street	Los Angeles, City of	—	—	18070104	0.1	—	N	AH	—
UNKNOWN 1 near Melrose Avenue	Los Angeles, City of	—	—	18070104	0.5	—	N	A	—
UNKNOWN 1 near Mines Avenue	Montebello, City of	—	—	18070105	0.1	—	N	AE	—
UNKNOWN 1 to Myrick Canyon Creek	Los Angeles County	—	—	18090206	0.7	—	N	A	—
UNKNOWN 1 and 2 near Overland Avenue	Los Angeles, City of	—	—	18070104	1.5	—	N	AO, AH	—
UNKNOWN 1 near W. Olympic Boulevard	Los Angeles, City of	—	—	18070104	0.1	—	N	AH	—
UNKNOWN 1, 1-A, 1-A-1, 1-A-2, 1-B, 1-B-1, and 1-C to Pallett Creek	Los Angeles County	—	—	18090206	35.0	—	N	A	—
UNKNOWN 1 to Paso Robles Avenue	Los Angeles, City of	—	—	18070105	0.4	—	N	AE	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
UNKNOWN 1 near Pershing Drive	Los Angeles, City of	—	—	18070104	0.2	—	N	A	—
UNKNOWN 1, 1-A, 1-B and 1-C to Portal Ridge Wash	Los Angeles County	—	—	18090206	7.3	—	N	A	—
UNKNOWN 1 near Rexbon Road	Los Angeles, City of	—	—	18070105	0.2	—	N	AE	—
UNKNOWN 1 near Ripley Avenue	Redondo Beach, City of	—	—	18070104	0.1	—	N	AE	1981
UNKNOWN 1 near Roscoe Boulevard	Los Angeles, City of	—	—	18070105	0.2	—	N	AH	—
UNKNOWN 1 near San Diego Freeway	Los Angeles, City of	—	—	18070105	0.2	—	N	AH	—
UNKNOWN 1 and 2 to San Fernando Road	Los Angeles, City of	—	—	18070105	0.9	—	N	A	—
UNKNOWN 1 to San Gabriel River	Long Beach, City of	—	—	18070106	1.2	—	N	A	—
UNKNOWN 1, 1-A and 2 to Santa Susana Creek	Los Angeles, City of	—	—	18070105	1.0	—	N	A, AO	—
UNKNOWN 1 near Sesnon Boulevard	Los Angeles, City of	—	—	18070105	0.1	—	N	AE	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
UNKNOWN 1 near Sheldon Street	Los Angeles, City of	—	—	18070105	0.6	—	N	A	—
UNKNOWN 1 and 2 near W. Slausson Avenue	Los Angeles County	—	—	18070104	0.4	—	N	AH	—
UNKNOWN 1 near State Highway 110	Los Angeles, City of	—	—	18070105	0.2	—	N	A	—
UNKNOWN 1 near W. Sunset Boulevard	Los Angeles, City of	—	—	18070104	0.1	—	N	A	—
UNKNOWN 1 near Sunset Canyon Drive	Burbank, City of	—	—	18070105	0.8	—	N	AO	—
UNKNOWN 1 near Susanna Place	Los Angeles, City of	—	—	18070105	0.1	—	N	AH	—
UNKNOWN 1 near W. Temple Street	Los Angeles, City of	—	—	18070104	0.3	—	N	AH	—
UNKNOWN 1 and 2 near Toledo Street	Torrance, City of	—	—	18070104	0.4	—	N	AE, AH	1978
UNKNOWN 1 near UCLA	Los Angeles, City of	—	—	18070104	2.4	—	N	AH	—
UNKNOWN 1 near Vail Avenue	Montebello, City of	—	—	18070105	0.3	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
UNKNOWN 1 near S. Van Ness Avenue	Los Angeles, City of	—	—	18070104	1.2	—	N	A, AH, AO	—
UNKNOWN 1 near Via Valmonte	Torrance, City of	—	—	18070104	0.1	—	N	A	1978
UNKNOWN 1 near Victory Boulevard	Los Angeles, City of	—	—	18070105	0.6	—	N	AH	—
UNKNOWN 1 and 2 near Vincent Street	Redondo Beach, City of	—	—	18070104	0.2	—	N	AE	1981
UNKNOWN 1 and 2 to Vine Creek	West Covina, City of	—	—	18070106	0.7	—	N	A	—
UNKNOWN 1 near Walker Avenue	Los Angeles, City of	—	—	18070104	0.1	—	N	A	—
UNKNOWN 1 and 1-A to Weldon Canyon Creek	Los Angeles, City of	—	—	18070105	0.2	—	N	AE	—
UNKNOWN WEST of Edwards AF Base	Los Angeles County	—	—	18090206	13.8	—	N	A	—
UNKNOWN 1, 1-A, 2, 2-A, 3, 3-A, 4, 5 and 6 to UNKNOWN WEST	Los Angeles County	—	—	18090206	10.8	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
UNKNOWN 1, 2 and 3 near Wilshire Boulevard	Los Angeles, City of	—	—	18070104	3.0	—	N	AH, AO, A	—
UNKNOWN 1 near Woodman Place	Los Angeles, City of	—	—	18070105	1.2	—	N	A	—
Unnamed Canyon Creek (Serra Retreat Area)	Los Angeles County, Malibu, City of	—	—	18070104	0.5	—	N	AE	—
Unnamed Stream Main Reach, Tributary 1 and 2	Palos Verdes Estates, City of	—	—	18070104	2.3	—	Y	AE	2010
Upper Los Angeles River Left Overbank	Los Angeles, City of	—	—	18070105	1.6	—	N	AE	—
Vasquez Canyon	Los Angeles County	—	—	18070102	2.6	—	N	A, AO	—
Villa Canyon Creek	Los Angeles County	—	—	18070102	0.1	—	N	A	—
Vine Creek	West Covina, City of	—	—	18070106	0.9	—	N	A	—
Violin Canyon Creek	Los Angeles County	Confluence with Castaic Creek	At I-5 (Golden State Freeway)	18070102	1.5	—	N	AE, AO	—
Violin Canyon Creek	Los Angeles County	—	—	18070102	1.7	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Wayside Canyon Creek	Los Angeles County	—	—	18070102	2.2	—	N	A	—
Weldon Canyon	Los Angeles, City of	—	—	18070105	0.3	—	Y	AE	—
West Basin	Los Angeles, City of	—	—	18070104	1.3	—	N	AE	—
West Channel	Los Angeles, City of	—	—	18070104	0.7	—	N	AE	—
Westlake Reservoir	Westlake Village, City of	—	—	18070104	0.9	0.2	N	A	—
Whitney Canyon Creek	Los Angeles County, Santa Clarita, City of	—	—	18070102	0.4	—	N	A	1984
Wildwood Canyon Creek	Santa Clarita, City of	—	—	18070102	0.5	—	N	A, AO	1984
Wiley Canyon Creek	Los Angeles County, Santa Clarita, City of	—	—	18070102	0.4	—	N	A	1984
Willow Springs Canyon Creek	Los Angeles County	—	—	18090206	5.1	—	N	A	—
Young Canyon Creek	Los Angeles County	—	—	18070102	0.2	—	N	A	—
Zuma Canyon	Malibu, City of	—	—	18070104	0.2	—	N	A	—

Table 2: Flooding Sources Included in this FIS Report, Continued

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi ²) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Zuma Canyon	Malibu, City of	—	—	18070104	1.8	—	N	AE	—
Zuma Canyon	Los Angeles County, Malibu, City of	—	—	18070104	0.6	—	N	A	—

* Data Not Available

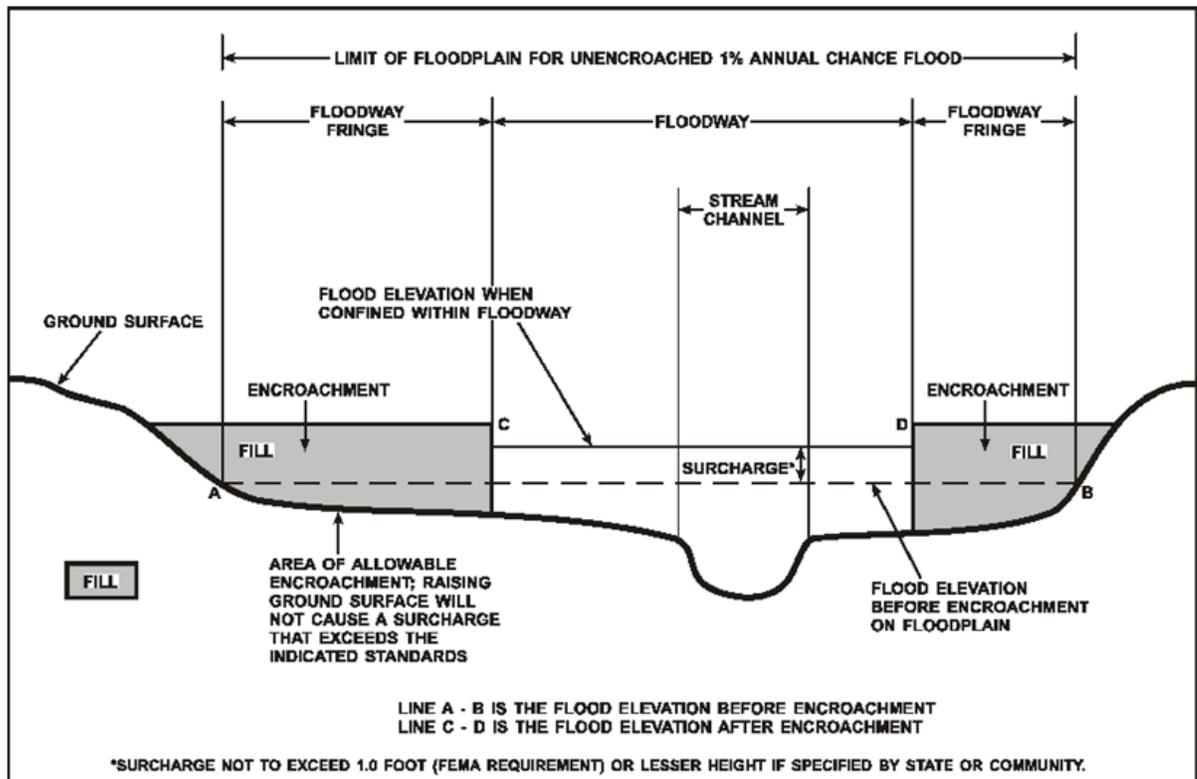
2.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard.

For purposes of the NFIP, a floodway is used as a tool to assist local communities in balancing floodplain development against increasing flood hazard. With this approach, the area of the 1% annual chance floodplain on a river is divided into a floodway and a floodway fringe based on hydraulic modeling. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order to carry the 1% annual chance flood. The floodway fringe is the area between the floodway and the 1% annual chance floodplain boundaries where encroachment is permitted. The floodway must be wide enough so that the floodway fringe could be completely obstructed without increasing the water surface elevation of the 1% annual chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4.

To participate in the NFIP, Federal regulations require communities to limit increases caused by encroachment to 1.0 foot, provided that hazardous velocities are not produced.

Figure 4: Floodway Schematic



Floodway widths presented in this FIS Report and on the FIRM were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For certain stream segments, floodways were adjusted so that the amount of floodwaters conveyed on each side of the floodplain would be reduced equally. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 24, "Floodway Data."

All floodways that were developed for this Flood Risk Project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and 1% annual chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown on the FIRM. For information about the delineation of floodways on the FIRM, refer to Section 6.3.

2.3 Base Flood Elevations

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The Base Flood Elevation (BFE) is the elevation of the 1% annual chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM.

Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. BFEs are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM.

2.4 Non-Encroachment Zones

This section is not applicable to this Flood Risk Project

2.5 Coastal Flood Hazard Areas

For most areas along rivers, streams, and small lakes, BFEs and floodplain boundaries are based on the amount of water expected to enter the area during a 1% annual chance flood and the geometry of the floodplain. Floods in these areas are typically caused by storm events. However, for areas on or near ocean coasts, large rivers, or large bodies of water, BFE and floodplain boundaries may need to be based on additional components, including storm surges and waves. Communities on or near ocean coasts face flood hazards caused by offshore seismic events as well as storm events.

Coastal flooding sources that are included in this Flood Risk Project are shown in Table 2.

2.5.1 Water Elevations and the Effects of Waves

Specific terminology is used in coastal analyses to indicate which components have been included in evaluating flood hazards.

The stillwater elevation (SWEL or still water level) is the surface of the water resulting from astronomical tides, storm surge, and freshwater inputs, but excluding wave setup contribution or the effects of waves.

- *Astronomical tides* are periodic rises and falls in large bodies of water caused by the rotation of the earth and by the gravitational forces exerted by the earth, moon and sun.
- *Storm surge* is the additional water depth that occurs during large storm events. These events can bring air pressure changes and strong winds that force water up against the shore.
- *Freshwater inputs* include rainfall that falls directly on the body of water, runoff from surfaces and overland flow, and inputs from rivers.

The 1% annual chance stillwater elevation is the stillwater elevation that has been calculated for a storm surge from a 1% annual chance storm. The 1% annual chance storm surge can be determined from analyses of tidal gage records, statistical study of regional historical storms, or other modeling approaches. Stillwater elevations for storms of other frequencies can be developed using similar approaches.

The total stillwater elevation (also referred to as the mean water level) is the stillwater elevation plus wave setup contribution but excluding the effects of waves.

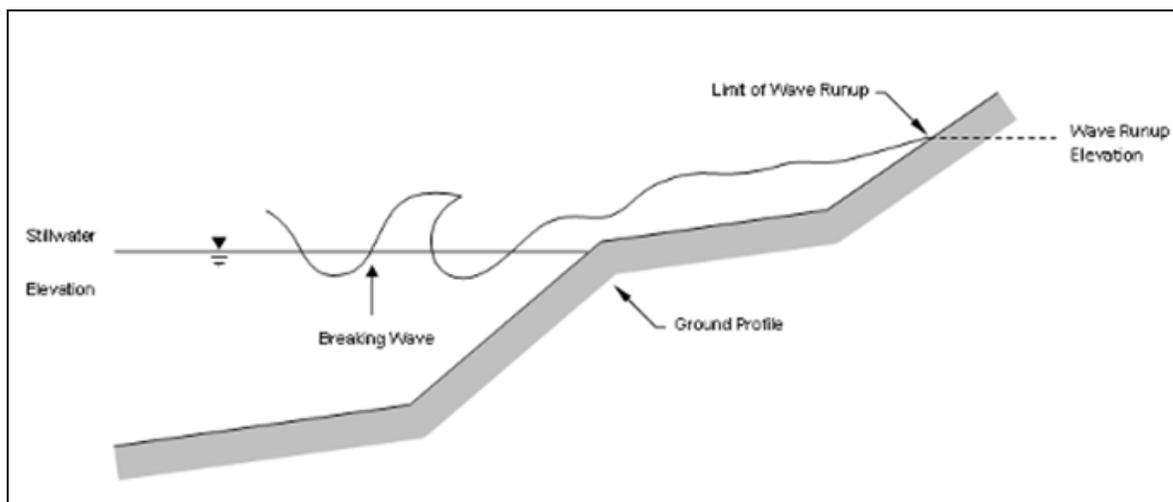
- *Wave setup* is the increase in stillwater elevation at the shoreline caused by the reduction of waves in shallow water. It occurs as breaking wave momentum is transferred to the water column.

Like the stillwater elevation, the total stillwater elevation is based on a storm of a particular frequency, such as the 1% annual chance storm. Wave setup is typically estimated using standard engineering practices or calculated using models, since tidal gages are often sited in areas sheltered from wave action and do not capture this information.

Coastal analyses may examine the effects of overland waves by analyzing storm-induced erosion, overland wave propagation, wave runup, and/or wave overtopping.

- *Storm-induced erosion* is the modification of existing topography by erosion caused by a specific storm event, as opposed to general erosion that occurs at a more constant rate
- *Overland wave propagation* describes the combined effects of variation in ground elevation, vegetation, and physical features on wave characteristics as waves move onshore.
- *Wave runup* is the uprush of water from wave action on a shore barrier. It is a function of the roughness and geometry of the shoreline at the point where the stillwater elevation intersects the land.
- *Wave overtopping* refers to wave runup that occurs when waves pass over the crest of a barrier.

Figure 5: Wave Runup Transect Schematic



2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

For coastal communities along the Atlantic and Pacific Oceans, the Gulf of Mexico, the Great Lakes, and the Caribbean Sea, flood hazards must take into account how storm surges, waves, and extreme tides interact with factors such as topography and vegetation. Storm surge and waves must also be considered in assessing flood risk for certain communities on rivers or large inland bodies of water.

Beyond areas that are affected by waves and tides, coastal communities can also have riverine floodplains with designated floodways, as described in previous sections.

Floodplain Boundaries

In many coastal areas, storm surge is the principle component of flooding. The extent of the 1% annual chance floodplain in these areas is derived from the total stillwater elevation (stillwater elevation including storm surge plus wave setup) for the 1% annual chance storm. The methods that were used for calculation of total stillwater elevations for coastal areas are described in Section 5.3 of this FIS Report. Location of total stillwater elevations for coastal areas are shown in Figure 8, “1% Annual Chance Total Stillwater Levels for Coastal Areas.”

In some areas, the 1% annual chance floodplain is determined based on the limit of wave runup or wave overtopping for the 1% annual chance storm surge. The methods that were used for calculation of wave hazards are described in Section 5.3 of this FIS Report.

Table 26 presents the types of coastal analyses that were used in mapping the 1% annual chance floodplain in coastal areas.

Coastal BFEs

Coastal BFEs are calculated as the total stillwater elevation (stillwater elevation including storm surge plus wave setup) for the 1% annual chance storm plus the additional flood hazard from overland wave effects (storm-induced erosion, overland wave propagation, wave runup and wave overtopping).

Where they apply, coastal BFEs are calculated along transects extending from offshore to the

limit of coastal flooding onshore. Results of these analyses are accurate until local topography, vegetation, or development type and density within the community undergoes major changes.

Parameters that were included in calculating coastal BFEs for each transect included in this FIS Report are presented in Table 17, “Coastal Transect Parameters.” The locations of transects are shown in, Figure 9 “Transect Location Map.” More detailed information about the methods used in coastal analyses and the results of intermediate steps in the coastal analyses are presented in Section 5.3 of this FIS Report. Additional information on specific mapping methods is provided in Section 6.4 of this FIS Report.

2.5.3 Coastal High Hazard Areas

Certain areas along the open coast and other areas may have higher risk of experiencing structural damage caused by wave action and/or high-velocity water during the 1% annual chance flood. These areas will be identified on the FIRM as Coastal High Hazard Areas.

- *Coastal High Hazard Area (CHHA)* is a SFHA extending from offshore to the inland limit of the primary frontal dune (PFD) or any other area subject to damages caused by wave action and/or high-velocity water during the 1% annual chance flood.
- *Primary Frontal Dune (PFD)* is a continuous or nearly continuous mound or ridge of sand with relatively steep slopes immediately landward and adjacent to the beach. The PFD is subject to erosion and overtopping from high tides and waves during major coastal storms.

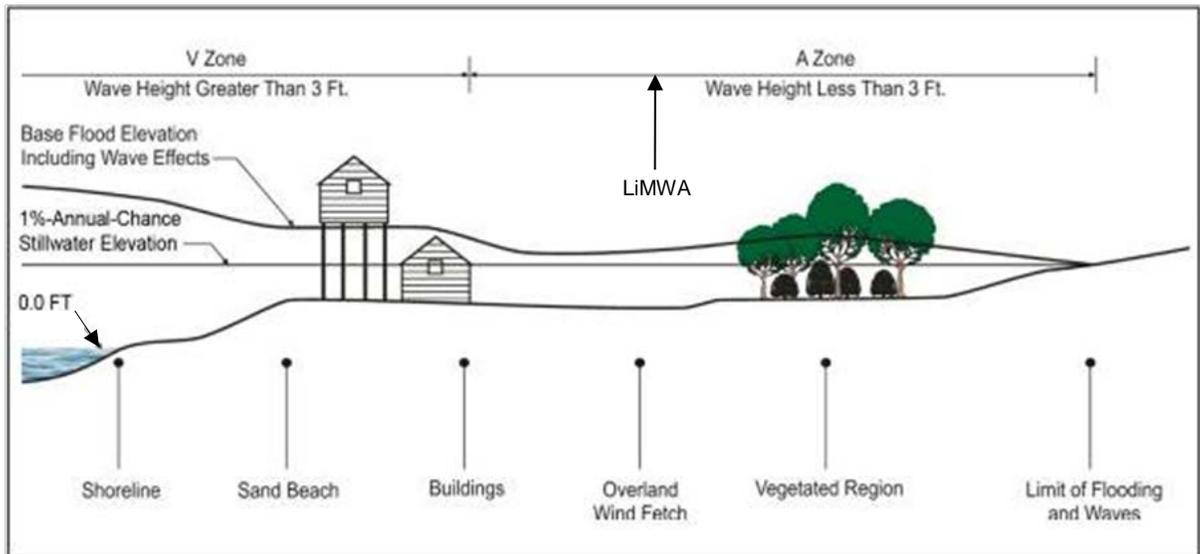
CHHAs are designated as “V” zones (for “velocity wave zones”) and are subject to more stringent regulatory requirements and a different flood insurance rate structure. The areas of greatest risk are shown as VE on the FIRM. Zone VE is further subdivided into elevation zones and shown with BFEs on the FIRM.

The landward limit of the PFD occurs at a point where there is a distinct change from a relatively steep slope to a relatively mild slope; this point represents the landward extension of Zone VE. Areas of lower risk in the CHHA are designated with Zone V on the FIRM. More detailed information about the identification and designation of Zone VE is presented in Section 6.4 of this FIS Report.

Areas that are not within the CHHA but are SFHAs may still be impacted by coastal flooding and damaging waves; these areas are shown as “A” zones on the FIRM.

Figure 6, “Coastal Transect Schematic,” illustrates the relationship between the base flood elevation, the 1% annual chance stillwater elevation, and the ground profile as well as the location of the Zone VE and Zone AE areas in an area without a PFD subject to overland wave propagation. This figure also illustrates energy dissipation and regeneration of a wave as it moves inland.

Figure 6: Coastal Transect Schematic



Methods used in coastal analyses in this Flood Risk Project are presented in Section 5.3 and mapping methods are provided in Section 6.4 of this FIS Report.

Coastal floodplains are shown on the FIRM using the symbology described in, “Map Legend for FIRM.” In many cases, the BFE on the FIRM is higher than the stillwater elevations shown in Table 17 due to the presence of wave effects. The higher elevation should be used for construction and/or floodplain management purposes.

2.5.4 Limit of Moderate Wave Action

Laboratory tests and field investigations have shown that wave heights as little as 1.5 feet can cause damage to and failure of typical Zone AE building construction. Wood-frame, light gage steel, or masonry walls on shallow footings or slabs are subject to damage when exposed to waves less than 3 feet in height. Other flood hazards associated with coastal waves (floating debris, high velocity flow, erosion, and scour) can also damage Zone AE construction.

Therefore, a LiMWA boundary may be shown on the FIRM as an informational layer to assist coastal communities in safe rebuilding practices. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. The location of the LiMWA relative to Zone VE and Zone AE is shown in Figure 6.

The effects of wave hazards in Zone AE between Zone VE (or the shoreline where Zone VE is not identified) and the limit of the LiMWA boundary are similar to, but less severe than, those in Zone VE where 3-foot or greater breaking waves are projected to occur during the 1% annual chance flooding event. Communities are therefore encouraged to adopt and enforce more stringent floodplain management requirements than the minimum NFIP requirements in the LiMWA. The NFIP Community Rating System provides credits for these actions.

Where wave runup elevations dominate over wave heights, there is no evidence to date of significant damage to residential structures by runup depths less than 3 feet. Examples of these

areas include areas with steeply sloped beaches, bluffs, or flood protection structures that lie parallel to the shore. In these areas, the FIRM shows the LiMWA immediately landward of the VE/AE boundary. Similarly, in areas where the zone VE designation is based on the presence of a primary frontal dune or wave overtopping, the LiMWA is delineated immediately landward of the Zone VE/AE boundary.

The LiMWA is not applicable to coastal areas within Los Angeles County.

SECTION 3.0 – INSURANCE APPLICATIONS

3.1 National Flood Insurance Program Insurance Zones

For flood insurance applications, the FIRM designates flood insurance rate zones as described in, “Map Legend for FIRM.” Flood insurance zone designations are assigned to flooding sources based on the results of the hydraulic or coastal analyses. Insurance agents use the zones shown on the FIRM and depths and base flood elevations in this FIS Report in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

The 1% annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (e.g. Zones A, AE, V, VE, etc.), and the 0.2% annual chance floodplain boundary corresponds to the boundary of areas of additional flood hazards.

Table 3 lists the flood insurance zones in the unincorporated and incorporated areas of Los Angeles County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Agoura Hills, City of	A, AE, D, X
Avalon, City of	A, AE, D, VE, X
Azusa, City of	A, D, X
Bell Gardens, City of	A, X
Bellflower, City of	AE, X
Burbank, City of	A, AE, AO, D, X
Calabasas, City of	A, AE, D, X
Carson, City of	A, X
Cerritos, City of	A, AE, X
Commerce, City of	A, X
Compton, City of	A, X
Cudahy, City of	A, X
Culver City, City of	A, AE, AO, X
Diamond Bar, City of	A, AO, D, X
Downey, City of	A, AE, X
El Segundo, City of	A, X
Gardena, City of	A, X
Hermosa Beach, City of	A, X
Hidden Hills, City of	A, D, X
La Mirada, City of	AE, X
Lakewood, City of	A, X
Lancaster, City of	A, AE, AH, AO, X
Long Beach, City of	A, AE, AH, VE, X
Los Angeles, City of	A, AE, AH, AO, D, VE, X
Los Angeles County, Unincorporated Areas	A, AE, AH, AO, D, V, VE, X
Lynwood, City of	AH, X
Malibu, City of	A, AE, AO, D, VE, X
Manhattan Beach, City of	A, X
Montebello, City of	A, AE, D, X
Norwalk, City of	AE, X
Palmdale, City of	A, AE, AO, D, X
Palos Verdes Estates, City of	A, D, V, X

Table 3: Flood Zone Designations by Community, Continued

Community	Flood Zone(s)
Paramount, City of	A, AH, X
Pico Rivera, City of	A, AE, D, X
Redondo Beach, City of	A, AE, V, VE, X
San Dimas, City of	AE, D, X
Santa Clarita, City of	A, AE, AH, AO, D, X
Santa Fe Springs, City of	AE, AH, X
Santa Monica, City of	A, D, X
South Gate, City of	A, X
Torrance, City of	A, AE, AH, V, X
West Covina, City of	A, D, X
Westlake Village, City of	A, AE, X
Whittier, City of	A, AE, AO, D, X

3.2 Coastal Barrier Resources System

The Coastal Barrier Resources Act (CBRA) of 1982 was established by Congress to create areas along the Atlantic and Gulf coasts and the Great Lakes, where restrictions for Federal financial assistance including flood insurance are prohibited. In 1990, Congress passed the Coastal Barrier Improvement Act (CBIA), which increased the extent of areas established by the CBRA and added “Otherwise Protected Areas” (OPA) to the system. These areas are collectively referred to as the John. H Chafee Coastal Barrier Resources System (CBRS).

CBRS areas are not applicable to Los Angeles County.

Table 4: Coastal Barrier Resources System Information

[Not Applicable to this Flood Risk Project]

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

Table 5 contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its drainage area.

Table 5: Basin Characteristics

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (square miles)
Santa Clara	18070102	Santa Clara River	Encompasses majority of Los Angeles County and Ventura County, as well as Cities of Fillmore, San Buenaventura, Santa Clarita, and Santa Paula	1,610
Santa Monica Bay	18070104	Malibu Creek/Ballona Creek	Mostly highly urbanized areas. Major communities include the Cities of Agoura Hills, Calabasas, Culver City, Inglewood, Los Angeles, Malibu, Santa Monica, and West Hollywood	575
Los Angeles	18070105	Los Angeles River	Majority of the upper portion is covered by forest and open space. Cities of Long Beach and Los Angeles are highly developed with residential and urban use	819
San Gabriel	18070106	San Gabriel River	Majority of areas are not developed. It runs through Angeles National Forest and Cities of Covina, Long Beach, Los Angeles, Pomona, and Whittier	713
San Pedro Channel Islands	18070107	Pacific Ocean	Minor islands off the coast	154
Antelope-Fremont Valleys	18090206	Big Rock Creek / Little Rock Creek	Extended into Los Angeles County and Cities of Lancaster, and Palmdale. Development in the east is generally commercial and industrial.	12,000

4.2 Principal Flood Problems

Table 6 contains a description of the principal flood problems that have been noted for Los Angeles County by flooding source.

Table 6: Principal Flood Problems

Flooding Source	Description of Flood Problems
All sources	Los Angeles County has a long history of destructive flooding. In the Los Angeles basin area, an extensive flood control system eliminated much of the flood hazard experienced in years past. However, in the less densely populated areas of Malibu, Santa Clarita Valley, and Antelope Valley, relatively few flood controls have been constructed. These areas remain subject to flood hazard during major storms.
Los Angeles River	The cities of Bellflower, Carson, Compton, Downey, Gardena, Lakewood, Long Beach, Los Angeles, Lynwood, Montebello, Paramount, Pico Rivera, Santa Fe Springs, South Gate, and Whittier have a history of flooding roughly parallel to that of the larger Los Angeles River watershed. Prior to the construction of the extensive storm drain and flood control channel system protecting numerous communities within the county, these cities suffered the continual damage wrought by overflow of the Los Angeles River and/or its tributaries. Following completion of this system, and due to the lack of a very large flood event during the intervening period, the major cause of flood damage within these cities has been flooding by overflow of local drainage systems and smaller tributaries to the Los Angeles River system. Of particular concern are mudflows that frequently occur in the foothill areas during intense rainfall, usually following wildfires in the upstream watershed.
Pacific Ocean	<p>The Southern California coastline is exposed to waves generated by winter and summer storms originating in the Pacific Ocean. It is not uncommon for these storms to cause 15-foot breakers. The occurrence of such a storm event in combination with high astronomical tides and strong winds can cause a significant wave runup and allow storm waves to attack higher than normal elevations along the coastline. When this occurs, shoreline erosion and coastal flooding frequently results in damage to inadequately protected structures and facilities located along low-lying portions of the shoreline.</p> <p>Oil pumping in past years has caused subsidence along the ocean front areas of Long Beach. Settlements of up to 30 feet have occurred in some areas of the Long Beach Harbor subjecting many locations along the coast to damage from direct wave action. Much of Naples Island and Belmont Shores in southeastern Long Beach, lie at elevations less than the maximum recorded tide.</p>
Ballona Creek	Sources of flooding include the Ballona Creek channel and associated tributaries, as well as drainage channels originating in the Baldwin Hills and surrounding cities. The Los Angeles County Flood Control District's flood overflow maps also indicate a history of flooded streets and low-lying areas along the streams of Culver City.

Table 6: Principal Flood Problems, Continued

Flooding Source	Description of Flood Problems
La Mirada Creek	<p>La Mirada Creek is an unimproved watercourse that flows southwest through the La Mirada. Overflow maps indicate a history of flooded streets and natural watercourses in the city. Between Santa Gertrudes Avenue and Stamy Road, the channel runs into La Mirada Creek Park. The park has been designed as a greenbelt flood plain management area and the 1-Percent Annual Chance discharge is contained within city-owned park property. Downstream of Stamy Road, the flood flows follow the natural watercourse alignment of La Mirada Creek. Between Stamy Road and Imperial Highway, the existing development is rural-residential and the flood plain is occupied by horse corrals and small barns. The water ponds upstream of Imperial Highway inundate approximately 3 acres of undeveloped property. Between Imperial Highway and La Mirada Boulevard, the flows continue through a miniature golf course and a residential development. The residential structures are located on high ground substantially above the flood plain. Downstream of La Mirada Boulevard, the watercourse traverses an open field that is part of Biola College. An existing flood control channel, downstream of the field, collects floodwaters, which are ultimately conveyed to North Fork Coyote Creek.</p> <p>Watersheds of less than one square mile within the city have historically caused flooding in developed low-lying areas. These areas are located in the vicinity of the intersection of Valeda Drive and De Alcala Drive, between Goldendale Drive and Telegraph Road, the eastern end of Capella Street, the intersection of San Feliciano Drive and Figueras Road, the intersection of Crosswood Road and Pemberton Drive, the intersection of Borda Drive and San Ardo Drive, and north of the Atchison, Topeka, and Santa Fe Railway near Castellon Road.</p>
Antelope Valley	<p>The city of Lancaster is on the alluvial floodplain of the Antelope Valley. Consequently, the type of flooding experienced in the city is typical of that experienced by communities developed on alluvial fans. Flood flows discharge from the mountainous canyons onto the desert floor, where, due to the lack of well-incised streambeds, it spreads out in uncontrolled patterns.</p> <p>Flood discharges have overflowed in normally dry streambeds, resulting in heavy damage as floodwaters pass through developed areas. Flooding from Little Rock Creek was experienced in the eastern portion of the city.</p>

Table 6: Principal Flood Problems, Continued

Flooding Source	Description of Flood Problems
Alluvial Fans	<p>The type of flooding in the city of Palmdale is typical of that experienced by communities developed on alluvial fans. Flood flows discharge from the mountainous canyons onto the desert floor, where, due to the lack of well incised streambeds, water spreads out in uncontrolled patterns. Intense, short-duration summer thunderstorms are not uncommon and have created flooding in downstream areas.</p> <p>The principal flood problems for both the Little Rock and Big Rock Washes can be attributed to three factors: the very flat topography, the absence of well-defined natural channels, and the lack of a developed flood control system. In the steeper upstream reaches of both washes, water is confined mostly to the main channel. Flooding problems occur when the flows reach the valley floor where the channels flatten out. This allows the flows to spread over great distances, inundating the surrounding areas.</p> <p>In some instances, flooding from different sources converges in specific drainage areas of the city. In the east-central part of the city, flooding studied by approximate methods originates in the north, east of Amargosa Creek, and converges with flooding studied by detailed methods that originate in the foothills to the south.</p> <p>Flood discharges have overflowed normally dry streambeds, resulting in heavy damage as floodwaters travel through developed areas. During the period of comparatively recent record, floods of major proportions have occurred. The office of the County Engineer has identified the areas in which moderate to severe flooding was observed during heavy storms in 1938, 1965, and 1969 on flood overflow maps. During these floods, widespread damage to orchards, irrigation systems, buildings, and roads occurred.</p>
Redondo Beach Watersheds	<p>The watersheds of Redondo Beach are relatively small with storm flows either draining directly into the ocean or accumulating in numerous small sumps. The Los Angeles County Flood Control District flood overflow maps indicate a history of flooded streets and sumps in the community which resulted from the major storms of 1938, 1965, 1969, 1978, 1980, 1983, and 1994.</p> <p>Flooding caused by the 1-percent annual chance flood is limited to street rights of way, areas of shallow flooding less than one foot deep, and ponding areas. Shallow flooding occurs along Avenue I between South Elena and Esplanade Avenues; along Julia Avenue between Camino Real and South Juanita Avenue; between Del Amo, Diamond, Garnsey, and Vincent Streets; between Vincent Street, South Irena Avenue, Spencer Street, and El Rondo; between Anita Street, North Prospect Avenue, Agate Street, and Harkness Lane; along Carnegie Lane between Blossom and Green Lanes; between Aviation Way and Artesia and Aviation Boulevards; between Gibson Avenue, Deland Boulevard, Dow Avenue, and Manhattan Beach Boulevard; at the intersection of the Atchinson, Topeka, and Santa Fe Railway and Inglewood Avenue; and along Compton Boulevard between Freeman and Aviation Boulevards.</p>

Table 6: Principal Flood Problems, Continued

Flooding Source	Description of Flood Problems
Foothills of Santa Clarita	Los Angeles County Flood Control District flood-overflow maps indicate a history of flooding in this area from major storms. These events demonstrate that the city of Santa Clarita is susceptible to flood damage. Of particular concern are mudflows that frequently occur in the foothill areas during intense rainfall, usually following brush fires in the upstream watershed. This hazard has not been addressed in this study.
Rainfall Runoff	In the City of Los Angeles, city engineers have indicated that an inland strip along the beach, northwest of Ballona Creek outlet, has historically been subject to shallow flooding because, during major storms, the drains serving the area have not functioned at high tide.

Table 7 contains information about historic flood elevations in the communities within Los Angeles County.

Table 7: Historic Flooding Elevations

Flooding Source	Location	Historic Peak (Feet NAVD88)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Big Rock Creek	Near Valyermo, CA	4053.3	1/25/1969		USGS gage
Big Tujunga Creek	Near Sunland, CA	1574.6	1/23/1943		USGS gage
Malibu Creek	At Crater Camp near Calabasas, CA	433.0	1/25/1969		USGS gage
Santa Clara River	450 feet downstream of I-5	797.5	11/15/1952		USGS gage
Santa Clara River	At Los Angeles County/Ventura County Line	1046.2	1/9/2005		USGS gage
Topanga Canyon	Near Topanga Beach, CA	268.2	1/25/1969		USGS gage

4.3 Non-Levee Flood Protection Measures

Table 8 contains information about non-levee flood protection measures within Los Angeles County. Levees are addressed in Section 4.4 of this FIS Report.

Table 8: Non-Levee Flood Protection Measures

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Tujunga Wash	Hansen Flood Control Reservoir	Earthen Dam	Los Angeles, California	Flood control facility built in 1939 in response to significant flooding along the Tujunga Wash
Los Angeles River	Sepulveda Flood Control Basin	Earthen Dam	Los Angeles, California	Flood control facility that was constructed in response to the historic 1938 floods. It is designed to withhold winter flood waters along the Los Angeles River
San Gabriel River	Whittier Narrows Flood Control Basin	Earthen Dam	Montebello, California	Flood control facility that controls runoff originating in the northeastern portion of Los Angeles County. The Rio Hondo originates at Whittier Narrows Dam

4.4 Levees

For purposes of the NFIP, FEMA only recognizes levee systems that meet, and continue to meet, minimum design, operation, and maintenance standards that are consistent with comprehensive floodplain management criteria. The Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10) describes the information needed for FEMA to determine if a levee system reduces the risk from the 1% annual chance flood. This information must be supplied to FEMA by the community or other party when a flood risk study or restudy is conducted, when FIRMs are revised, or upon FEMA request. FEMA reviews the information for the purpose of establishing the appropriate FIRM flood zone.

Levee systems that are determined to reduce the risk from the 1% annual chance flood are accredited by FEMA. FEMA can also grant provisional accreditation to a levee system that was previously accredited on an effective FIRM and for which FEMA is awaiting data and/or documentation to demonstrate compliance with Section 65.10. These levee systems are referred to as Provisionally Accredited Levees, or PALs. Provisional accreditation provides communities and levee owners with a specified timeframe to obtain the necessary data to confirm the levee's certification status. Accredited levee systems and PALs are shown on the FIRM using the symbology shown in Figure 3 and in Table 9. If the required information for a PAL is not submitted within the required timeframe, or if information indicates that a levee system no longer meets Section 65.10, FEMA will de-accredit the levee system and issue an effective FIRM showing the levee-impacted area as a SFHA.

FEMA coordinates its programs with USACE, who may inspect, maintain, and repair levee systems. The USACE has authority under Public Law 84-99 to supplement local efforts to repair flood control projects that are damaged by floods. Like FEMA, the USACE provides a program to allow public sponsors or operators to address levee system maintenance deficiencies. Failure to do so within the required timeframe results in the levee system being placed in an inactive status

in the USACE Rehabilitation and Inspection Program. Levee systems in an inactive status are ineligible for rehabilitation assistance under Public Law 84-99.

FEMA coordinated with the USACE, the local communities, and other organizations to compile a list of levees that exist within Los Angeles County. Table 9, "Levees," lists all accredited levees, PALs, and de-accredited levees shown on the FIRM for this FIS Report. Other categories of levees may also be included in the table. The Levee ID shown in this table may not match numbers based on other identification systems that were listed in previous FIS Reports. Levees identified as PALs in the table are labeled on the FIRM to indicate their provisional status.

Please note that the information presented in Table 9 is subject to change at any time. For that reason, the latest information regarding any USACE structure presented in the table should be obtained by contacting USACE and accessing the USACE national levee database. For levees owned and/or operated by someone other than the USACE, contact the local community shown in

Table 9: Levees

Community	Flooding Source	Levee Location	Levee Owner	USACE Levee	Levee ID	Covered Under PL84-99 Program?	FIRM Panel(s)
City of Bell	Los Angeles River	Left Bank	USACE, LA District	Yes	1901057931	Yes	06037C1810F
City of Bell	Los Angeles River	Right Bank	USACE, LA District	Yes	1901057921	Yes	06037C1810F
City of Bell Gardens	Rio Hondo Channel	Right Bank	County of Los Angeles	Yes	1901057060	Yes	06037C1664F
City of Carson	Compton Creek	Left Bank	County of Los Angeles	Yes	1901057139	Yes	06037C1815F
City of Carson	Compton Creek	Right Bank	County of Los Angeles	Yes	1901057158	Yes	06037C1815F
City of Carson	Dominguez Channel	Left Bank	County of Los Angeles	Yes	1901057016	No	06037C1935F
City of Carson	Dominguez Channel	Right Bank	County of Los Angeles	Yes	1901057114	No	06037C1935F
City of Carson	Dominguez Channel	Left Bank	County of Los Angeles	Yes	1901057202	No	06037C1935F
City of Carson	Dominguez Channel	Right Bank	County of Los Angeles	Yes	1901057132	No	06037C1935F
City of Long Beach	Los Angeles River	Right Bank	County of Los Angeles	Yes	1901057176	Yes	06037C1962F
City of Montebello	Rio Hondo Channel	Right Bank	County of Los Angeles	Yes	1901057052	Yes	06037C1664F
City of Santa Clarita	Bouquet Canyon Creek	Left Bank	County of Los Angeles	Yes	1901057140	No	06037C0820F
City of Santa Clarita	Bouquet Canyon Creek	Right Bank	County of Los Angeles	Yes	1901057131	No	06037C0820F
City of Santa Clarita	Santa Clara River	Left Bank	County of Los Angeles	Yes	1901057092	No	06037C0820F

Table 9: Levees, Continued

Community	Flooding Source	Levee Location	Levee Owner	USACE Levee	Levee ID	Covered Under PL84-99 Program?	FIRM Panel(s)
City of Santa Clarita	Santa Clara River	Right Bank	County of Los Angeles	Yes	1901057115	No	06037C0840F
City of Santa Clarita	Santa Clara River	Left Bank	County of Los Angeles	Yes	1901057148	No	06037C0820F
City of Santa Clarita	Santa Clara River	Right Bank	County of Los Angeles	Yes	1901057135	No	06037C0840F
City of Santa Clarita	Santa Clara River	Right Bank	County of Los Angeles	Yes	1901057199	No	06037C0820F
City of Santa Clarita	Santa Clara River	Right Bank	County of Los Angeles	Yes	1901057906	No	06037C0840F
City of South Gate	Los Angeles River	Left Bank	County of Los Angeles	Yes	1901057053	Yes	06037C1815F
City of South Gate	Los Angeles River	Right Bank	County of Los Angeles	Yes	1901057054	Yes	06037C1815F
City of South Gate	Los Angeles River	Left Bank	USACE, LA District	Yes	1901057064	Yes	06037C1810F
City of Long Beach	Coyote Creek	Right Bank	USACE, LA District	Yes	1901057050	Yes	06037C1990F
City of Santa Clarita	Santa Clara River	Right Bank	USACE, LA District	No	1901057908	Unknown	06037C0840G
City of Long Beach	San Gabriel River	Right Bank	USACE, LA District	Yes	1901057051	Yes	06037C1990F
City of Santa Clarita	Bouquet Canyon Creek	Right Bank	USACE, LA District	No	1901057909	Unknown	06037C0817G
City of Santa Clarita	Santa Clara River	Left Bank	USACE, LA District	No	1901057183	No	06037C0840G
City of Santa Clarita	Santa Clara River	Left Bank	USACE, LA District	No	1901057911	Unknown	06037C0840G
City of Santa Clarita	South Fork Santa Clara River	Left Bank	USACE, LA District	No	1901058269	No	06037C0818G

SECTION 5.0 – ENGINEERING METHODS

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least once on the average during any 10-, 25-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 2-, 1-, and 0.2% annual chance, respectively, of being equaled or exceeded during any year.

Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

The engineering analyses described here incorporate the results of previously issued Letters of Map Change (LOMCs) listed in Table 27, “Incorporated Letters of Map Change”, which include Letters of Map Revision (LOMRs). For more information about LOMRs, refer to Section 6.5, “FIRM Revisions.”

5.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. A summary of the hydrologic methods applied to develop the discharges used in the hydraulic analyses for each stream is provided in Table 13. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 10. Frequency Discharge-Drainage Area Curves used to develop the hydrologic models may also be shown in Figure 7 for selected flooding sources. A summary of stillwater elevations developed for non-coastal flooding sources is provided in Table 11. (Coastal stillwater elevations are discussed in Section 5.3 and shown in Table 17.) Stream gage information is provided in Table 12.