

FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 5



VENTURA COUNTY, CALIFORNIA AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
CAMARILLO, CITY OF	065020
FILLMORE, CITY OF	060415
MOORPARK, CITY OF	060712
OJAI, CITY OF	060416
OXNARD, CITY OF	060417
PORT HUENEME, CITY OF	065051
SAN BUENAVENTURA, CITY OF	060419
SANTA PAULA, CITY OF	060420
SIM VALLEY, CITY OF	060421
THOUSAND OAKS, CITY OF	060422
VENTURA COUNTY, UNINCORPORATED AREAS	060413



FEMA

PRELIMINARY

09/30/2016

REVISED:

FLOOD INSURANCE STUDY NUMBER
06111CV001D

Version Number 2.3.3.3

TABLE OF CONTENTS

Volume 1

	<u>Page</u>
SECTION 1.0 – INTRODUCTION	1
1.1 The National Flood Insurance Program	1
1.2 Purpose of this Flood Insurance Study Report	2
1.3 Jurisdictions Included in the Flood Insurance Study Project	2
1.4 Considerations for using this Flood Insurance Study Report	9
SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS	21
2.1 Floodplain Boundaries	21
2.2 Floodways	53
2.3 Base Flood Elevations	54
2.4 Non-Encroachment Zones	54
2.5 Coastal Flood Hazard Areas	54
2.5.1 Water Elevations and the Effects of Waves	54
2.5.2 Floodplain Boundaries and BFEs for Coastal Areas	56
2.5.3 Coastal High Hazard Areas	57
2.5.4 Limit of Moderate Wave Action	58
SECTION 3.0 – INSURANCE APPLICATIONS	59
3.1 National Flood Insurance Program Insurance Zones	59
3.2 Coastal Barrier Resources System	59
SECTION 4.0 – AREA STUDIED	60
4.1 Basin Description	60
4.2 Principal Flood Problems	61
4.3 Non-Levee Flood Protection Measures	75
4.4 Levees	82

Figures

	<u>Page</u>
Figure 1: FIRM Panel Index	12
Figure 2: FIRM Notes to Users	14
Figure 3: Map Legend for FIRM	17
Figure 4: Floodway Schematic	53
Figure 5: Wave Runup Transect Schematic	56
Figure 6: Coastal Transect Schematic	58

Tables

	<u>Page</u>
Table 1: Listing of NFIP Jurisdictions	2
Table 2: Flooding Sources Included in this FIS Report	22
Table 3: Flood Zone Designations by Community	59
Table 4: Coastal Barrier Resources System Information	59
Table 5: Basin Characteristics	60
Table 6: Principal Flood Problems	61
Table 7: Historic Flooding Elevations	71
Table 8: Non-Levee Flood Protection Measures	75
Table 9: Levees	84

Volume 2

	<u>Page</u>
SECTION 5.0 – ENGINEERING METHODS	89
5.1 Hydrologic Analyses	89
5.2 Hydraulic Analyses	107
5.3 Coastal Analyses	146
5.3.1 Total Stillwater Elevations	146
5.3.2 Waves	148
5.3.3 Coastal Erosion	148
5.3.4 Wave Hazard Analyses	149
5.4 Alluvial Fan Analyses	166
SECTION 6.0 – MAPPING METHODS	167
6.1 Vertical and Horizontal Control	167
6.2 Base Map	168
6.3 Floodplain and Floodway Delineation	168

Figures

	<u>Page</u>
Figure 7: Frequency Discharge-Drainage Area Curves	105
Figure 8: 1% Annual Chance Total Water Levels for Coastal Areas	147
Figure 9: Transect Location Map	162

Tables

	<u>Page</u>
Table 10: Summary of Discharges	90
Table 11: Summary of Non-Coastal Stillwater Elevations	106
Table 12: Stream Gage Information used to Determine Discharges	107
Table 13: Summary of Hydrologic and Hydraulic Analyses	108
Table 14: Roughness Coefficients	145

Table 15: Summary of Coastal Analyses	146
Table 16: Tide Gage Analysis Specifics	148
Table 17: Coastal Transect Parameters	150
Table 18: Summary of Alluvial Fan Analyses	166
Table 19: Results of Alluvial Fan Analyses	166
Table 20: Countywide Vertical Datum Conversion	167
Table 21: Stream-Based Vertical Datum Conversion	167
Table 22: Base Map Sources	168
Table 23: Summary of Topographic Elevation Data used in Mapping	169

Volume 3

	<u>Page</u>
SECTION 6.0 – MAPPING METHODS, continued	
6.4 Coastal Flood Hazard Mapping	198
6.5 FIRM Revisions	202
6.5.1 Letters of Map Amendment	202
6.5.2 Letters of Map Revision Based on Fill	203
6.5.3 Letters of Map Revision	203
6.5.4 Physical Map Revisions	204
6.5.5 Contracted Restudies	204
6.5.6 Community Map History	204
SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION	206
7.1 Contracted Studies	206
7.2 Community Meetings	226
SECTION 8.0 – ADDITIONAL INFORMATION	229
SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES	231

Tables

	<u>Page</u>
Table 24: Floodway Data	171
Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams	198
Table 26: Summary of Coastal Transect Mapping Considerations	199
Table 27: Incorporated Letters of Map Change	204
Table 28: Community Map History	205
Table 29: Summary of Contracted Studies Included in this FIS Report	207
Table 30: Community Meetings	227
Table 31: Map Repositories	229
Table 32: Additional Information	230
Table 33: Bibliography and References	232

Exhibits

Flood Profiles	<u>Panel</u>
Adams Canyon	01 P
Arroyo Santa Rosa	02-07 P
Arroyo Santa Rosa Tributary	08-09 P
Beardsley Wash	10-12 P
Bell Canyon Creek	13-15 P
Brown Barranca	16 P
Bus Canyon Drain	17-19 P
Bus Canyon Drain Tributary	20 P

Volume 4 Exhibits

Flood Profiles	<u>Panel</u>
Calleguas Creek – Arroyo Las Posas- Arroyo Simi	21-53 P
Camarillo Hills Drain	54-56 P
Conejo Creek	57-63 P
Coyote Creek	64-66 P
Dry Canyon Drain	67-68 P
Erringer Drain	69-71 P
Fagan Canyon	72-73 P
Fox Canyon Storm Drain	74-78 P
Happy Valley Drain	79-80 P
Happy Valley Drain South	81-82 P
Harmon Barranca	83-84 P
Lang Creek	85-86 P
Las Lajas Canyon Channel	87-91 P
Las Posas Estates Drain	92-93 P
Miramonte Drain	94 P
North Simi Drain	95-100 P
Peach Hill Wash	101 P
Piru Creek	102-103 P
Pole Creek	104-106 P
Reeves Creek	107-110 P
Rincon Creek	111 P

Volume 5
Exhibits

Flood Profiles	<u>Panel</u>
San Antonio Creek	112-120 P
Santa Clara River	121-136 P
Santa Clara River Breakout	137-138 P
Santa Paula Creek	139-141 P
Sespe Creek	142-145 P
South Branch Arroyo Conejo	146-149 P
Stewart Canyon Creek	150-154 P
Tapo Canyon Channel	155-157 P
Thacher Creek	158-167 P
Thousand Oaks North Drain	168-169 P
Ventura River	170-187 P
Ventura River without Levee	188 P
Walnut Creek Drain/Gabbart Canyon Creek	189-192 P

Published Separately

Flood Insurance Rate Map (FIRM)

FLOOD INSURANCE STUDY REPORT VENTURA 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 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 Ventura 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.

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
Camarillo, City of	065020	18070103	06111C0790E 06111C0926E 06111C0927F 06111C0928E 06111C0929F 06111C0931F 06111C0932F 06111C0933F 06111C0934E 06111C0951E 06111C0952E 06111C0953E 06111C0954E	
Fillmore, City of	060415	18070102	06111C0640E 06111C0641E 06111C0642E 06111C0643E 06111C0644E	
Moorpark, City of	060712	18070103	06111C0816E 06111C0817E 06111C0818E	

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
Moorpark, City of (continued)	060712	18070103	06111C0819E 06111C0836E 06111C0837E 06111C0838E	
Ojai, City of	060416	18070101	06111C0559E 06111C0560E 06111C0567E 06111C0578E 06111C0580E 06111C0586E	
Oxnard, City of	060417	18070102, 18070103	06111C0770E 06111C0882F 06111C0884F 06111C0901F 06111C0902F 06111C0903F 06111C0904F 06111C0910E 06111C0911F 06111C0912E 06111C0914F 06111C0916E 06111C0917F ¹ 06111C0918F 06111C0919F 06111C0926E 06111C0928E 06111C1081F 06111C1082F	
Port Hueneme, City of	065051	18070103	06111C0911F 06111C0912E 06111C0913F 06111C0914F 06111C0916E 06111C0918F	
San Buenaventura, City of	060419	18070101, 18070102	06111C0727F 06111C0731E 06111C0733E 06111C0737F 06111C0739F 06111C0741F 06111C0742F ¹ 06111C0743F 06111C0744F 06111C0765E 06111C0770E	

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
San Buenaventura, City of (continued)	060419	18070101, 18070102	06111C0882F 06111C0901F 06111C0902F	
Santa Paula, City of	060420	18070102	06111C0614E 06111C0618E 06111C0776E 06111C0777E 06111C0778E 06111C0779E 06111C0781E 06111C0783E	
Simi Valley, City of	060421	18070103, 18070104, 18070105	06111C0835E 06111C0837E 06111C0839E 06111C0841E 06111C0842E 06111C0843E 06111C0844E 06111C0855E 06111C0861E 06111C0862E 06111C0863E 06111C0864E 06111C0866E 06111C0867E ¹ 06111C0868E 06111C0869E 06111C0980E 06111C0985E 06111C1005E	
Thousand Oaks, City of	060422	18070103, 18070104	06111C0838E 06111C0839E 06111C0942E 06111C0952E 06111C0953E 06111C0954E 06111C0956E 06111C0957E 06111C0958E 06111C0959E 06111C0962E 06111C0965E 06111C0966E 06111C0967E 06111C0970E 06111C0978E 06111C0980E 06111C0985E	

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
Thousand Oaks, City of (continued)	060422	18070103, 18070104	06111C0986E 06111C0990E 06111C0995E 06111C1155E ¹	
Ventura County, Unincorporated Areas	060413	18030003, 18060007, 18060010, 18060013, 18060014, 18070101, 18070102, 18070103, 18070104, 18070105, 18070107	06111C0025E ¹ 06111C0050E ¹ 06111C0075E ¹ 06111C0100E ¹ 06111C0125E ¹ 06111C0150E ¹ 06111C0175E 06111C0200E 06111C0225E ¹ 06111C0250E ¹ 06111C0275E ¹ 06111C0300E ¹ 06111C0325E 06111C0350E 06111C0375E ¹ 06111C0400E ¹ 06111C0425E ¹ 06111C0450E ¹ 06111C0475E ¹ 06111C0500E ¹ 06111C0525E ¹ 06111C0530E ¹ 06111C0535E ¹ 06111C0537F ¹ 06111C0538F 06111C0539F 06111C0545E ¹ 06111C0555E ¹ 06111C0559E 06111C0560E 06111C0565E 06111C0566E 06111C0567E 06111C0568E 06111C0569E 06111C0578E 06111C0580E 06111C0585E 06111C0586E 06111C0590E 06111C0595E 06111C0605E ¹ 06111C0610E ¹ 06111C0612E 06111C0614E	

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
Ventura County, Unincorporated Areas (continued)	060413	18030003, 18060007, 18060010, 18060013, 18060014, 18070101, 18070102, 18070103, 18070104, 18070105, 18070107	06111C0615E 06111C0618E 06111C0620E 06111C0630E ¹ 06111C0635E 06111C0640E 06111C0641E 06111C0642E 06111C0643E 06111C0644E 06111C0655E ¹ 06111C0660E 06111C0665E 06111C0670E 06111C0680E 06111C0690E 06111C0695E 06111C0701F 06111C0702F 06111C0706F 06111C0707F ¹ 06111C0708F 06111C0709F 06111C0726F 06111C0727F 06111C0728F 06111C0729F ¹ 06111C0731E 06111C0733E 06111C0735E 06111C0736F 06111C0737F 06111C0741F 06111C0742F ¹ 06111C0744F 06111C0755E 06111C0760E 06111C0765E 06111C0770E 06111C0776E 06111C0777E 06111C0778E 06111C0779E 06111C0781E 06111C0782E 06111C0783E 06111C0784E ¹ 06111C0790E 06111C0791E 06111C0792E	

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
Ventura County, Unincorporated Areas (continued)	060413	18030003, 18060007, 18060010, 18060013, 18060014, 18070101, 18070102, 18070103, 18070104, 18070105, 18070107	06111C0793E 06111C0794E 06111C0805E 06111C0810E 06111C0811E 06111C0812E 06111C0813E 06111C0814E 06111C0816E 06111C0817E 06111C0818E 06111C0819E 06111C0830E 06111C0835E 06111C0836E 06111C0837E 06111C0838E 06111C0839E 06111C0841E 06111C0842E 06111C0843E 06111C0855E 06111C0860E ¹ 06111C0861E 06111C0862E 06111C0863E 06111C0864E 06111C0866E 06111C0867E ¹ 06111C0868E 06111C0869E 06111C0882F 06111C0884F 06111C0901F 06111C0902F 06111C0903F 06111C0904F 06111C0910E 06111C0911F 06111C0912E 06111C0913F 06111C0914F 06111C0916E 06111C0917F ¹ 06111C0918F 06111C0919F 06111C0926E 06111C0927F 06111C0928E 06111C0929F	

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
Ventura County, Unincorporated Areas (continued)	060413	18030003, 18060007, 18060010, 18060013, 18060014, 18070101, 18070102, 18070103, 18070104, 18070105, 18070107	06111C0931F 06111C0932F 06111C0933F 06111C0934E 06111C0936E 06111C0937E 06111C0938E 06111C0939E 06111C0941E 06111C0942E 06111C0943E 06111C0944E ¹ 06111C0951E 06111C0952E 06111C0953E 06111C0954E 06111C0956E 06111C0957E 06111C0958E 06111C0959E 06111C0962E 06111C0965E 06111C0966E 06111C0967E 06111C0970E 06111C0980E 06111C0985E 06111C0986E 06111C0990E 06111C0995E 06111C1005E 06111C1010E 06111C1015E 06111C1020E ¹ 06111C1050E ¹ 06111C1075E ¹ 06111C1081F 06111C1082F 06111C1101F 06111C1102F 06111C1104F 06111C1106F ¹ 06111C1107F 06111C1108F 06111C1109F 06111C1126F 06111C1127F ¹ 06111C1128F 06111C1129F ¹ 06111C1135E ¹	

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
Ventura County, Unincorporated Areas (continued)	060413	18030003, 18060007, 18060010, 18060013, 18060014, 18070101, 18070102, 18070103, 18070104, 18070105, 18070107	06111C1136F 06111C1137F 06111C1155E ¹ 06111C1200E ¹ 06111C1225E ¹ 06111C1250E ¹ 06111C1275E ¹	

¹Panel 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 Ventura County became effective on January 20, 2010. Refer to Table 28 for information about subsequent revisions to the FIRMs.

- FEMA does not impose floodplain management requirements or special insurance ratings based on Limit of Moderate Wave Action (LiMWA) delineations at this time. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. If the LiMWA is shown on the FIRM, it is being provided by FEMA as information only. For communities that do adopt Zone VE building standards in the area defined by the LiMWA, additional Community Rating System (CRS) credits are available. Refer to Section 2.5.4 for additional information about the LiMWA.

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 www.fema.gov/national-flood-insurance-program-community-rating-system 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.”

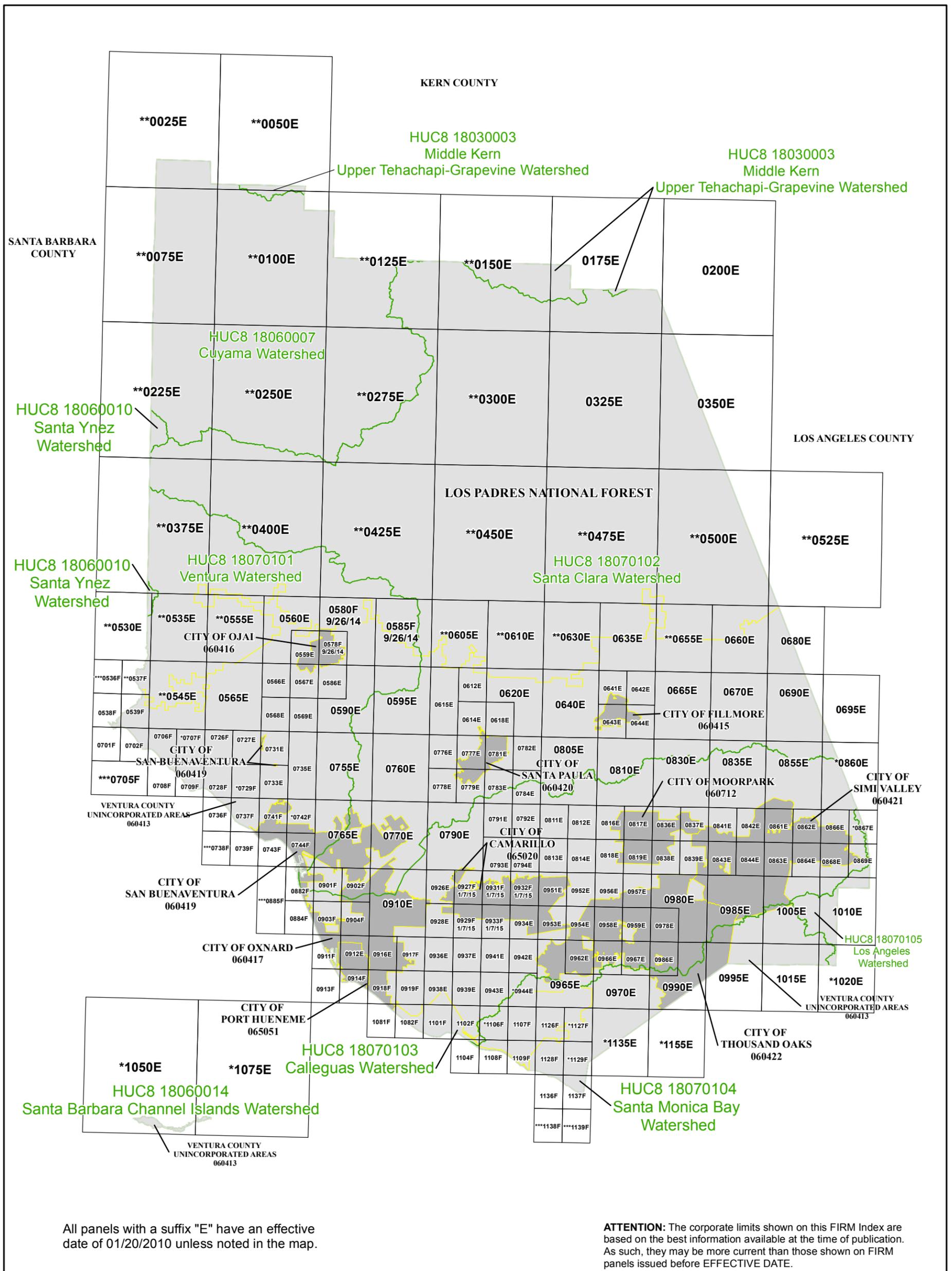
Since the status of levees is subject to change at any time, the user should contact the appropriate agency for the latest information regarding levees presented in Table 9 of this FIS Report. For levees owned or operated by the U.S. Army Corps of Engineers (USACE), information may be obtained from the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

Please also note that FEMA has identified one or more levees in this jurisdiction that have not been demonstrated by the community or levee owner to meet the requirements of 44CFR Part 65.10, of the NFIP regulations as it relates to the levee’s capacity to provide 1-percent-annual-chance flood protection. As such, temporary actions are being taken until such time as FEMA is able to initiate a new flood risk project to apply new levee analysis and mapping procedures to leveed areas. These temporary actions involve using the flood hazard data shown on the previous effective FIRM exactly as shown on that prior FIRM and identifying the area with bounding lines and special map notes. If a vertical datum conversion was executed for the county, then the Base Flood Elevations shown on the FIRM will now reflect elevations referenced to the North American Vertical Datum of 1988 (NAVD88). These levees are on FIRM panel(s) 06111C0770E, 06111C0790E, 06111C0910E, on the Ventura County Levee/Santa Clara River, and are identified on FIRM panels as potential areas of flood hazard data changes based on further review. Please refer to Section 4.4 of this FIS Report for more information.

- 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 Ventura 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, flooding sources, watershed boundaries, and United States Geological Survey (USGS) Hydrologic Unit Code – 8 (HUC-8) codes.

Figure 1: FIRM Panel Index

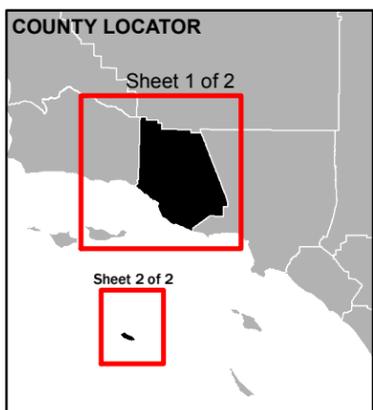


1 in = 6 miles 1:380,000
 0 3 6 12 Miles

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 IN ZONE D
 ***PANEL NOT PRINTED - OPEN WATER AREA



NATIONAL FLOOD INSURANCE PROGRAM
 FLOOD INSURANCE RATE MAP INDEX (Sheet 1 of 2)
 VENTURA COUNTY, CALIFORNIA and Incorporated Areas

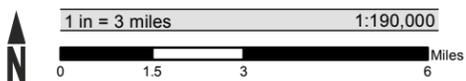
PANELS PRINTED:
 0175, 0200, 0325, 0350, 0538, 0539, 0559, 0560, 0565, 0566, 0567, 0568, 0569, 0578, 0580, 0585, 0586, 0590, 0595, 0612, 0614, 0615, 0618, 0620, 0635, 0640, 0641, 0642, 0643, 0644, 0660, 0665, 0670, 0680, 0690, 0695, 0701, 0702, 0706, 0708, 0709, 0726, 0727, 0728, 0731, 0733, 0735, 0736, 0737, 0739, 0741, 0743, 0744, 0755, 0760, 0765, 0770, 0776, 0777, 0778, 0779, 0781, 0782, 0783, 0790, 0791, 0792, 0793, 0794, 0805, 0810, 0811, 0812, 0813, 0814, 0815, 0817, 0818, 0819, 0830, 0835, 0836, 0837, 0838, 0839, 0841, 0842, 0843, 0844, 0855, 0861, 0862, 0863, 0864, 0866, 0868, 0869, 0882, 0884, 0901, 0902, 0903, 0904, 0910, 0911, 0912, 0913, 0914, 0916, 0918, 0919, 0926, 0927, 0928, 0929, 0931, 0932, 0933, 0934, 0936, 0937, 0938, 0939, 0941, 0942, 0943, 0951, 0952, 0953, 0954, 0956, 0957, 0958, 0959, 0962, 0965, 0966, 0967, 0970, 0978, 0980, 0985, 0986, 0990, 0995, 1005, 1010, 1015, 1081, 1082, 1101, 1102, 1104, 1107, 1108, 1109, 1126, 1128, 1136, 1137

FEMA
 PRELIMINARY
 MAP NUMBER 06111CIND1D
 MAP REVISED

Figure 1: FIRM Panel Index, continued



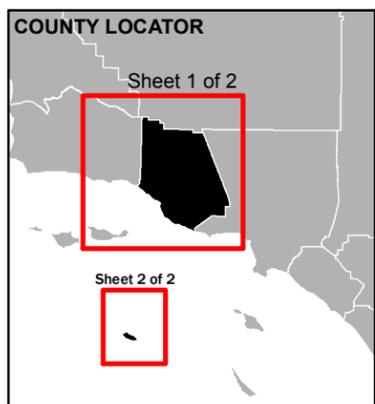
ATTENTION: The corporate limits shown on this FIRM Index are based on the best information available at the time of publication. As such, they may be more current than those shown on FIRM panels issued before EFFECTIVE DATE



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



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

VENTURA COUNTY, CALIFORNIA and Incorporated Areas

SHEET 2 OF 2

PANELS PRINTED:
None



FEMA

PRELIMINARY

MAP NUMBER
06111CIND2D

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 Flood 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 Flood 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 Flood 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 Non-Coastal 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.

Figure 2. FIRM Notes to Users

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.

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 the FIRM was derived from digital orthophotography collected by the Coastal Service Center and U.S. Department of Agriculture Farm Service Agency. Coastal Service Center imagery was flown in 2011 and was produced with a sub-meter ground sample distance. Department of Agriculture 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.

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.

Figure 2. FIRM Notes to Users

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Ventura 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.

ATTENTION: The corporate limits shown are based on the best information available at the time of publication of the FIRM Index. As such, they may be more current than those shown on FIRM panels issued before **EFFECTIVE DATE**.

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Ventura County, California, effective **<date>**.

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 Ventura County.

Figure 3: Map Legend for FIRM

<p>SPECIAL FLOOD HAZARD AREAS: <i>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.</i></p>	
	<p>Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)</p>
<p>Zone A</p>	<p>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.</p>
<p>Zone AE</p>	<p>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.</p>
<p>Zone AH</p>	<p>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.</p>
<p>Zone AO</p>	<p>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.</p>
<p>Zone AR</p>	<p>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.</p>
<p>Zone A99</p>	<p>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.</p>
<p>Zone V</p>	<p>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.</p>
<p>Zone VE</p>	<p>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.</p>

Figure 3: Map Legend for FIRM

	Regulatory Floodway determined in Zone AE.
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	
	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	
<p><i>Aqueduct</i> <i>Channel</i> <i>Culvert</i> <i>Storm Sewer</i></p>	Channel, Culvert, Aqueduct, or Storm Sewer
<p><i>Dam</i> <i>Jetty</i> <i>Weir</i></p>	Dam, Jetty, Weir

Figure 3: Map Legend for FIRM

	Levee, Dike, or Floodwall
<p style="text-align: center;">Bridge</p>	Bridge
<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>	
<p style="text-align: center;">CBRS AREA 09/30/2009</p>	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.
<p style="text-align: center;">OTHERWISE PROTECTED AREA 09/30/2009</p>	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
	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.
	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.
	Base Flood Elevation Line
<p>ZONE AE (EL 16)</p>	Static Base Flood Elevation value (shown under zone label)

Figure 3: Map Legend for FIRM

ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity
BASE MAP FEATURES	
	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
	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
42⁷⁶000m 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 Ventura 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 Ventura County, California, 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
Adams Canyon	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	At Telegraph Road	18070102	0.9		N	A	1988
Adams Canyon	Santa Paula, City of; Ventura County, Unincorporated Areas	At Telegraph Road	Approximately 1.1 miles upstream of Telegraph Road	18070102	1.1		N	AE	1988
Adams Canyon	Ventura County, Unincorporated Areas	Approximately 1.1 miles upstream of Telegraph Road	Approximately 4,620 feet upstream of Foothill Road	18070102	1.8		N	A	1988
Alamos Canyon	Simi Valley, City of; Ventura County, Unincorporated Areas	Confluence with Arroyo Simi	Approximately 3,835 feet upstream of Scarab Fire Road	18070103	3.7		N	A	1988
Arroyo Colorado	Ventura County, Unincorporated Areas	Confluence with Honda Barranca	Approximately 1,850 feet upstream of East La Loma Avenue	18070103	2.4		N	A	1988
Arroyo Conejo	Thousand Oaks, City of; Ventura County, Unincorporated Areas	Confluence with Conejo Creek	Approximately 190 feet upstream of El Camino Real	18070103	5.8		N	A	1976
Arroyo Las Posas	Ventura County, Unincorporated Areas	Confluence with Calleguas Creek	Confluence with Arroyo Simi	18070103	6.0		Y	AE	1988
Arroyo Santa Rosa	Ventura County, Unincorporated Areas	Confluence with Conejo Creek	Approximately 3,035 feet upstream of East Las Posas Road	18070103	2.8		Y	AE	2004; Revised 2008
Arroyo Santa Rosa	Ventura County, Unincorporated Areas	Approximately 3,035 feet upstream of East Las Posas Road	Approximately 740 feet upstream of Lexington Hills Drive	18070103	1.7		N	A	2004; Revised 2008
Arroyo Santa Rosa	Ventura County, Unincorporated Areas	Approximately 740 feet upstream of Lexington Hills Drive	Approximately 2,600 feet upstream of State Highway 23 (Moorpark Freeway)	18070103	1.9		Y	AE	2004; Revised 2008

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
Arroyo Santa Rosa Tributary	Ventura County, Unincorporated Areas	Confluence with Arroyo Santa Rosa	Approximately 420 feet upstream of Santa Rosa Bridge	18070103	2.1		Y	AE	2004; Revised 2008
Arroyo Simi	Moorpark, City of; Simi Valley, City of; Ventura County, Unincorporated Areas	Confluence with Arroyo Las Posas	Approximately 4,095 feet upstream of Kuehner Drive	18070103	21.5		Y	AE	1995
Arundell Barranca	San Buenaventura, City of; Ventura County, Unincorporated Areas	At Beachmont Street	Approximately 1,700 feet upstream of Mills Road Drain	18070101	1.7		N	A	1983
Arundell Barranca	San Buenaventura, City of	At Highway 126 West Drain	Approximately 465 feet upstream of Highway 126 West Drain	18070101	0.1		N	A	1983
Arundell Barranca	San Buenaventura, City of; Ventura County, Unincorporated Areas	Approximately 35 feet downstream of Foothill Road	Approximately 2,000 feet upstream of Foothill Road	18070101	0.4		N	A	1983
Arundell Barranca	San Buenaventura, City of	Approximately 16 feet upstream of Plainview Street	Approximately 85 feet upstream of Plainview Street	18070101		0.1	N	A	1983
Auto Center Drain	Ventura County, Unincorporated Areas	Approximately 80 feet East of the intersection of Santa Clara Avenue and Fredrich Road	Approximately 4,400 feet upstream of the intersection of Santa Clara Avenue and Fredrich Road	18070103	0.8		N	AH	1988
Balcom Canyon Wash	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 3,000 feet upstream of Hardnego Road	18070102	1.8		N	A	1988

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
Barbara Drive Drain	Ventura County, Unincorporated Areas	Confluence with Conejo Creek	Approximately 1,770 feet upstream of Rosita Road	18070103	1.1		N	A	1988
Bardsdale Ditch	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 2,560 feet upstream of Los Angeles Avenue	18070102	2.6		N	A	1988
Basolo Ditch	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 1,800 feet upstream of East Guiberson Road	18070102	1.0		N	A	1988
Bear Creek	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 4,750 feet upstream of Sycamore Road	18070102	2.4		N	A	1988
Beardsley Wash	Camarillo, City of; Ventura County, Unincorporated Areas	Approximately 2,088 feet downstream of Wright Road	Approximately 1,290 feet upstream of Wright Road	18070103	0.8		Y	AE	1988
Beardsley Wash	Camarillo, City of; Ventura County, Unincorporated Areas	Approximately 1,290 feet upstream of Wright Road	Confluence of Honda Barranca	18070103	1.8		N	A	1988
Bell Canyon Creek	Ventura County, Unincorporated Areas	Ventura/Los Angeles county boundary	Approximately 70 feet downstream of North Buckskin Court	18070105	2.1		N	AE	1988
Big Canyon	Ventura County, Unincorporated Areas	Confluence with Lion Canyon Creek	Approximately 1,600 feet upstream of confluence with Lion Canyon Creek	18070101	0.3		N	A	1988
Big Mountain Canyon	Simi Valley, City of	Confluence with Tapo Canyon Creek	Approximately 475 feet upstream of Tapo Canyon Road	18070103	0.5		N	A	1988
Big Sycamore Canyon Creek	Ventura County, Unincorporated Areas	Mouth at Pacific Ocean	Approximately 2,500 feet upstream of Ranch Center Road	18070104	6.6		N	A	1988

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
Big Sycamore Canyon Tributary	Ventura County, Unincorporated Areas	Confluence with Big Sycamore Canyon Creek	Approximately 900 feet upstream of confluence with Big Sycamore Canyon Creek	18070104	0.2		N	A	1988
Blanchard Canyon	Ventura County, Unincorporated Areas	Confluence with Piru Creek	Approximately 690 feet upstream of Piru Canyon Road	18070102	0.2		N	A	1988
Boosey Canyon	Ventura County, Unincorporated Areas	Confluence with Timber Canyon	Approximately 2,760 feet upstream of the confluence with Timber Canyon	18070102	0.5		N	A	1988
Boulder Canyon	Ventura County, Unincorporated Areas	Confluence with Sespe Creek	Approximately 1.1 miles upstream of Sycamore Road	18070102	2.6		N	A	1988
Brea Canyon	Simi Valley, City of; Ventura County, Unincorporated Areas	Approximately 1,600 feet downstream of American Street	Approximately 200 feet upstream of Brea Canyon Road	18070103	1.9		N	A	1988
Brown Barranca	San Buenaventura, City of; Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 200 feet downstream of Blackburn Road	18070102	1.4		N	A, AH	1983
Brown Barranca	San Buenaventura, City of; Ventura County, Unincorporated Areas	Approximately 200 feet downstream of Blackburn Road	Approximately 500 feet upstream of Telegraph Avenue	18070102	0.5		N	AE	1983
Bus Canyon Drain	Simi Valley, City of	Confluence with Arroyo Simi	At Los Angeles Avenue	18070103	0.07		N	AE	1995
Bus Canyon Drain	Simi Valley, City of	At Los Angeles Avenue	Approximately 795 feet downstream of Ventura Avenue	18070103	0.1		N	AO	1995

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
Bus Canyon Drain	Simi Valley, City of	Approximately 795 feet downstream of Ventura Avenue	At Royal Avenue	18070103	0.4		N	AE	1955
Bus Canyon Drain	Simi Valley, City of	At Royal Avenue	Approximately 330 feet upstream of Royal Avenue	18070103	0.06		N	AO	1995
Bus Canyon Drain	Simi Valley, City of	Approximately 330 feet upstream of Royal Avenue	Approximately 250 feet upstream of East Bennet Street	18070103	0.7		N	AE	1995
Bus Canyon Drain	Simi Valley, City of	Approximately 250 feet upstream of East Bennet Street	At 1 st Street	18070103	0.7		N	A	1995
Bus Canyon Drain Tributary	Simi Valley, City of	Confluence with Bus Canyon Drain	At Newman Street	18070103	0.4		N	AH, AO	1995
Bus Canyon Drain Tributary	Simi Valley, City of	At Newman Street	At Dakin Avenue	18070103	0.2		N	AE	1995
Bus Canyon Drain Tributary	Simi Valley, City of	At Dakin Avenue	Approximately 630 feet upstream of Dakin Avenue	18070103	0.1		N	AH, AO	1995
Bus Canyon Drain Tributary	Simi Valley, City of	Approximately 630 feet upstream of Dakin Avenue	Approximately 1,975 feet upstream of Dakin Avenue	18070103	0.2		N	AE	1995
Calleguas Creek	Camarillo, City of; Ventura County, Unincorporated Areas	Approximately 900 feet downstream of Southbound Highway 1	Approximately 2.4 miles upstream of Upland Road	18070103	13.5		Y	AE	2004
Camarillo Hills Drain	Ventura County, Unincorporated Areas	Confluence with Revolon slough	Approximately 2,860 feet downstream of Las Posas Estates Drain	18070103	0.4		N	A	2011

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
Camarillo Hills Drain	Camarillo, City of; Ventura County, Unincorporated Areas	Approximately 2,860 feet downstream of Las Posas Estates Drain	Approximately 2.25 miles upstream of Las Posas Estates Drain	18070103	2.6		Y	AE	2011
Camarillo Hills Drain	Camarillo, City of	Approximately 2.25 miles upstream of Las Posas Estates Drain	At Arneill Road	18070103	3.0		N	AE	2011
Canada De Aliso	Ventura County, Unincorporated Areas	Confluence with Canada Larga	Approximately 145 feet upstream of Canada Larga Road	18070101	0.3		N	A	1988
Canada Larga	Ventura County, Unincorporated Areas	Confluence with Ventura River	Approximately 825 feet upstream of confluence of Sulphur Canyon	18070101	5.9		N	A	1988
Chivo Canyon	Simi Valley, City of; Ventura County, Unincorporated Areas	Confluence with Las Lajas Canyon Channel	Approximately 3,545 feet upstream of Cottonwood Drive	18070103	0.7		N	A	1995
Conejo Creek	Camarillo, City of; Ventura County, Unincorporated Areas	Confluence with Calleguas Creek	Approximately 3.5 miles upstream of confluence with Upland Road Drain	18070103	8.2		Y	AE	2004
Conejo Mountain Creek	Thousand Oaks, City of	Approximately 1,300 feet upstream of Desert Creek Court	Approximately 390 feet upstream of Calle del Prado	18070103	0.6		N	A	1976
Conejo Mountain Creek	Thousand Oaks, City of	At Via de la Mesa	Approximately 2,700 feet upstream of Via Rincon	18070103	0.7		N	A	1976
Conejo Park Creek	Ventura County, Unincorporated Areas	Confluence with Conejo Creek	Approximately 350 feet upstream of Howard Road	18070103	0.6		N	A	1983

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
Cooper Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Santa Ana Creek	Approximately 1,360 feet upstream of confluence with Santa Ana Creek	18070101	0.2		N	A	1988
Coyote Canyon	Ventura County, Unincorporated Areas	Confluence with Arroyo Las Posas	Approximately 2,810 feet upstream of State Route 118	18070103	1.1		N	A	1988
Coyote Canyon	Ventura County, Unincorporated Areas	Approximately 855 feet downstream of Bradley Road	Approximately 1,345 feet upstream of Solano Verde Road	18070103	0.4		N	A	1988
Coyote Canyon Wash	Ventura County, Unincorporated Areas	Confluence with Coyote Canyon	Approximately 150 feet upstream of La Cumbre Road	18070103	0.8		N	A	1988
Coyote Creek	Ventura County, Unincorporated Areas	Confluence with Ventura River	Approximately 1.9 miles upstream of Camp Chaffee Road	18070101	2.5		N	AE	1988
Coyote Creek	Ventura County, Unincorporated Areas	Approximately 1.9 miles upstream of Camp Chaffee Road	Approximately 2 miles upstream of Camp Chaffee Road	18070101	0.1		N	A	1988
Cozy Del Canyon	Ventura County, Unincorporated Areas	Confluence with Ventura River	Approximately 950 feet upstream of North Rice Road	18070101	0.9		N	AE	1988
Cozy Del Canyon	Ventura County, Unincorporated Areas	Approximately 950 feet upstream of North Rice Road	Approximately 1,110 feet upstream of Maricopa Highway	18070101	0.5		N	A	1988
Donlon Drain	Ventura County, Unincorporated Areas	Confluence with Puerta Zuela Barranca	Approximately 1,400 feet upstream of confluence with Puerta Zuela Barranca	18070103	0.3		N	A	1988

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
Doris Avenue Drain	Ventura County, Unincorporated Areas	Confluence with East Street Drain	Approximately 0.8 miles upstream of confluence with East Street Drain	18070103	0.8		N	A	1988
Dron Creek	Ventura County, Unincorporated Areas	Confluence with San Antonio Creek	Approximately 440 feet upstream of Gridley Road	18070101	0.9		N	AE, AO	1988
Dry Canyon Creek	Simi Valley, City of	Confluence with Arroyo Simi	Approximately 1,190 feet upstream of Alamo Street	18070103	2.1		N	AE	1995
Dry Canyon Creek	Simi Valley, City of	Approximately 1,190 feet upstream of Alamo Street	Approximately 600 feet upstream of confluence of Dry Canyon Tributary	18070103	1.3		N	A	1995
Dry Canyon Creek	Simi Valley, City of	Approximately 600 feet upstream of confluence of Dry Canyon Tributary	Approximately 125 feet downstream of Lost Canyons Drive	18070103	0.3		N	AE	1995
Dry Canyon Tributary	Simi Valley, City of	Confluence with Dry Canyon Creek	Approximately 540 feet upstream of confluence with Dry Canyon Creek	18070103	0.1		N	A	1995
E Street Drain	Oxnard, City of; Ventura County, Unincorporated Areas	Approximately 2,240 feet downstream of West Wooley Road	Approximately 3,830 feet upstream of West 5 th Street	18070103	0.7		N	A	1977
East Camarillo Drain	Camarillo, City of	At Adolfo Road	Approximately 870 feet upstream of confluence of East Camarillo Drain Tributary	18070103	0.5		N	AE	2011

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
East Camarillo Drain Tributary	Camarillo, City of	Confluence with East Camarillo Drain	Approximately 660 feet upstream of confluence with East Camarillo Drain	18070103	0.1		N	AE	2011
East Fork Honda Barranca	Ventura County, Unincorporated Areas	Confluence with Honda Barranca	Approximately 1,630 feet upstream of East La Loma Avenue	18070103	0.9		N	A	1988
East Fork Lord Creek	Ventura County, Unincorporated Areas	Confluence with Boulder Creek	Approximately 2,600 feet upstream of Young Road	18070102	1.9		N	A	1988
East Fork Tripas Canyon	Ventura County, Unincorporated Areas	Approximately 605 feet downstream of Tripps Canyon Road	Approximately 3,085 feet upstream of Tripps Canyon Road	18070103	0.7		N	A	1988
East Las Virgenes Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Las Virgenes Canyon Creek	Approximately 2,630 feet upstream of confluence of East Las Virgenes Creek	18070104	1.4		N	A	1988
East Las Virgenes Creek	Ventura County, Unincorporated Areas	Confluence with East Las Virgenes Canyon Creek	Approximately 2,620 feet upstream of confluence with East Las Virgenes Canyon Creek	18070104	0.5		N	A	1988
East Tributary	Simi Valley, City of	Confluence with Dry Canyon Creek	Approximately 235 feet upstream of Sycamore Drive	18070103	0.8		N	AO	1995
East Tributary Meier Canyon	Ventura County, Unincorporated Areas	Confluence with Meier Canyon Creek	Approximately 2,930 feet upstream of confluence with Meier Canyon Creek	18070103	0.5		N	A	1988

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
East Tributary Somis Drain	Camarillo, City of	Approximately 210 feet upstream of North Adolfo Road	Approximately 230 feet downstream of Las Posas Road	18070103	0.3		N	AO	2011
Edgemore Drain	Camarillo, City of	Confluence with Camarillo Hills Drain	Approximately 2,350 feet upstream of Aileen Street	18070103	0.6		N	AE, AO	2011
Edwards Canyon	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 1,770 feet upstream of Camulos Street	18070102	1.7		N	A	1988
Ellsworth Barranca	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 1.5 miles upstream of confluence of Aliso Canyon West Fork	18070102	8.5		N	A	1988
Erringer Drain	Simi Valley, City of	Confluence with Arroyo Simi	Approximately 1,500 feet upstream of Fitzgerald Road	18070103	0.9		N	AE, AO	1995
Eureka Canyon	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 0.6 miles upstream of confluence with Santa Clara River	18070102	0.6		N	A	1988
Fagan Canyon	Santa Paula, City of; Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 3,310 feet upstream of West Santa Paula Street	18070102	1.8		N	AE, AO	1995
Fagan Canyon	Ventura County, Unincorporated Areas	Approximately 3,310 feet upstream of West Santa Paula Street	Approximately 1 mile upstream of West Santa Paula Street	18070102	0.3		N	A	1995
Fairview Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 1,310 feet upstream of State Route 126	18070102	0.6		N	A	1988

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
Fox Barranca	Ventura County, Unincorporated Areas	Confluence with Coyote Canyon	Approximately 1,428 feet upstream of Berylwood Road	18070103	3.9		N	A	1988
Fox Canyon Storm Drain	Ojai, City of	Confluence with Stewart Canyon Creek	Approximately 1,424 feet upstream of North Montgomery Street	18070101	1.9		Y	AE	1977
Franklin Barranca	San Buenaventura, City of; Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 4,575 feet upstream of confluence with Santa Clara River	18070102	0.8		N	A	1983
Frey Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 2,165 feet upstream of East Guiberson Road	18070102	0.9		N	A	1988
Gabbert Canyon Creek	Moorpark, City of	Approximately 360 feet upstream of Los Angeles Avenue/State Route 118	Approximately 3,030 feet upstream of Los Angeles Avenue/State Route 118	18070103	0.6		N	A	1983
Gill Barranca	Ventura County, Unincorporated Areas	Confluence with Fox Barranca	Approximately 1,390 feet upstream of Berylwood Road	18070103	0.5		N	A	1988
Gillibrand Canyon Creek	Simi Valley, City of; Ventura County, Unincorporated Areas	Confluence with Tapo Canyon Creek	Approximately 3,570 feet upstream of confluence of Gillibrand Canyon Tributary	18070103	3.5		N	A	1988
Guadaluca Road Drain	Ventura County, Unincorporated Areas	Approximately 3,370 feet upstream of Broome Ranch Road	Approximately 1.6 miles upstream of Broome Ranch Road	18070103	1.0		N	A	1988

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
Haines Barranca	Ventura County, Unincorporated Areas	Confluence with Adams Canyon	Approximately 145 feet upstream of Foothill Road	18070102	2.0		N	A	1988
Hammond Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Sulphur Canyon	Approximately 1.6 miles upstream of confluence with Sulphur Canyon	18070101	1.6		N	AE	1988
Happy Camp Canyon Creek	Moorpark, City of; Ventura County, Unincorporated Areas	Confluence with Arroyo Simi	Approximately 1.9 miles upstream of Little Happy Camp Canyon	18070103	8.3		N	A	1983
Happy Camp Canyon Tributary	Ventura County, Unincorporated Areas	Confluence with Happy Camp Canyon Creek	Approximately 1,580 feet upstream of confluence with Happy Camp Canyon Creek	18070103	0.3		N	A	1983
Happy Valley Drain	Ventura County, Unincorporated Areas	Confluence with McDonald Canyon Drain	Approximately 80 feet upstream of divergence with Happy Valley Drain South	18070101	0.4		N	A	1988
Happy Valley Drain	Ventura County, Unincorporated Areas	Approximately 80 feet upstream of divergence with Happy Valley Drain South	Approximately 200 feet upstream of El Roblar Drive	18070101	0.8		N	AE	1988
Happy Valley Drain South	Ventura County, Unincorporated Areas	At mouth	Confluence with Miramonte Drain	18070101	1.2		N	AE	1988
Harmon Barranca	San Buenaventura, City of; Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 3,110 feet upstream of confluence with Santa Clara River	18070102	0.6		N	A	1983

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
Harmon Barranca	San Buenaventura, City of	At Southern Pacific Railroad	Approximately 500 feet upstream of Ralston Street	18070102	0.8		N	AE	1983
Hidden Valley Wash	Ventura County, Unincorporated Areas	Confluence with Lake Sherwood	Approximately 1,320 feet upstream of Hidden Valley Road	18070104	2.9		N	A	1988
Hill Canyon	Thousand Oaks, City of	Confluence with Arroyo Conejo	Approximately 2,130 feet upstream of confluence with Arroyo Conejo	18070103	0.4		N	A	1976
Hilltop Lane Drain	Ventura County, Unincorporated Areas	Confluence with Conejo Creek	Approximately 2,745 feet upstream of Santa Rosa Road	18070103	0.6		N	A	1988
Holser Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Piru Creek	Approximately 670 feet upstream of the confluence of Ramona Canyon	18070102	2.0		N	A	1988
Honda Barranca	Ventura County, Unincorporated Areas	Confluence with Beardsley Wash	Approximately 2,180 feet upstream of East La Loma Avenue	18070103	3.6		N	A	1988
Honda Barranca Tributary	Ventura County, Unincorporated Areas	Confluence with Honda Barranca	Approximately 1.1 miles upstream of Price Road	18070103	1.5		N	A	1988
Hopper Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 1.7 miles upstream of confluence of Toms Canyon	18070102	5.3		N	A	1988
Hummingbird Creek	Simi Valley, City of	Confluence with White Oak Creek	Approximately 895 feet upstream of Ronald Reagan Freeway	18070103	0.9		N	A, AH	1993

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
Hummingbird Creek Tributary	Simi Valley, City of	Confluence with Hummingbird Creek	Approximately 480 feet upstream of confluence with Hummingbird Creek	18070103	0.1		N	AH	1993
Hunt Wash	Ventura County, Unincorporated Areas	Confluence with Arroyo Las Posas	Approximately 870 feet upstream of confluence with Arroyo Las Posas	18070103	0.2		N	AE	1988
Hunt Wash	Ventura County, Unincorporated Areas	Approximately 870 feet upstream of confluence with Arroyo Las Posas	Approximately 1,100 feet upstream of Meadowglade Drive	18070103	2.5		N	A	1988
J Street Drain	Oxnard, City of; Port Hueneme, City of	At mouth	Approximately 550 feet upstream of mouth	18070103	0.1		N	AE	1977
Javon Canyon	Ventura County, Unincorporated Areas	At mouth	Approximately 775 feet upstream of U.S. Highway 101	18070101	0.3		N	A	1988
Jepson Wash	Ventura County, Unincorporated Areas	Confluence with Sespe Creek	Approximately 1,070 feet upstream of Oak Avenue	18070102	1.1		N	A	1988
Kenny Grove Creek	Ventura County, Unincorporated Areas	Confluence with Sespe Creek	Approximately 700 feet upstream of Oak Avenue	18070102	0.6		N	A	1988
Koenigstein Road Wash	Ventura County, Unincorporated Areas	Confluence with Sisar Creek	Approximately 1,730 feet upstream of confluence with Sisar Creek	18070102	0.3		N	A	1988
La Jolla Canyon	Ventura County, Unincorporated Areas	At mouth	Approximately 1,915 feet upstream of mouth	18070104	0.3		N	A	1988

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
Lake Eleanor Creek	Thousand Oaks, City of	Approximately 2,070 feet upstream of Carlise Road	Approximately 3,750 feet upstream of Carlise Road	18070104	0.3		N	A	1976
Lake Piru	Ventura County, Unincorporated Areas	At Santa Felicia Dam	At Las Padres National Forest	18070102		1.1	N	A	1988
Lake Sherwood	Ventura County, Unincorporated Areas	Confluence with Potrero Creek	Confluence with Hidden Valley Wash	18070104		0.2	N	A	1988
Lake Sherwood	Thousand Oaks, City of; Ventura County, Unincorporated Areas	Approximately 300 feet upstream of East Potrero Road	Approximately 4,245 feet upstream of East Potrero Road	18070104	0.7		N	A	1988
Lang Creek	Thousand Oaks, City of	Approximately 3,060 feet downstream of Hillcrest Drive	Approximately 515 feet upstream of Combes Avenue	18070103	1.4		N	AE	2004
Las Lajas Canyon Channel	Simi Valley, City of	Confluence with Arroyo Simi	Approximately 1.1 miles upstream of Alamo Street	18070103	2.3		N	AE	1995
Las Lajas Canyon Channel	Simi Valley, City of; Ventura County, Unincorporated Areas	Approximately 1.1 miles upstream of Alamo Street	Approximately 4,570 feet upstream of Yosemite Avenue	18070103	0.9		N	A	1995
Las Posas Estates Drain	Camarillo, City of; Ventura County, Unincorporated Areas	Confluence with Camarillo Hills Drain	Approximately 3,000 feet upstream of Camarillo Hills Drain	18070103	0.5		N	A	1983
Las Posas Estates Drain	Camarillo, City of; Ventura County, Unincorporated Areas	Approximately 3,000 feet upstream of Camarillo Hills Drain	Approximately 1.6 miles upstream of Central Avenue	18070103	1.7		Y	AE	1983
Las Posas Estates Drain	Ventura County, Unincorporated Areas	Approximately 1.6 miles upstream of Central Avenue	Approximately 530 feet upstream of Avocado Place	18070103	0.3		N	A	1983
Las Sauces Creek	Ventura County, Unincorporated Areas	At mouth	Approximately 830 feet upstream of State Route 1	18070101	0.3		N	A, VE	1988

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 Virgenes Canyon Creek	Ventura County, Unincorporated Areas	At county boundary	Approximately 870 feet upstream of confluence of Las Virgenes Creek Tributary	18070104	2.9		N	A	1988
Las Virgenes Canyon Tributary	Ventura County, Unincorporated Areas	Confluence with Las Virgenes Canyon Creek	Approximately 355 feet upstream of confluence with Las Virgenes Canyon Creek	18070104	0.06		N	A	1988
Laskey Mesa West	Ventura County, Unincorporated Areas	Confluence with East Las Vingenes Canyon Creek	Approximately 2,225 feet upstream of confluence with East Las Vingenes Canyon Creek	18070104	0.4		N	A	1988
Lime Canyon	Ventura County, Unincorporated Areas	Confluence with Piru Creek	Approximately 1,140 feet upstream of Piru Canyon Road	18070102	0.4		N	A	1988
Lindero Creek	Ventura County, Unincorporated Areas	At county boundary	Approximately 2,815 feet upstream of county boundary	18070104	0.5		N	A	1988
Lion Canyon Creek	Ventura County, Unincorporated Areas	Confluence with San Antonio Creek	Approximately 3,285 feet upstream of confluence of Big Canyon	18070101	8.6		N	A	1988
Little Happy Camp Canyon	Ventura County, Unincorporated Areas	Confluence with Happy Camp Canyon Creek	Approximately 1,900 feet upstream of confluence of Little Happy Camp Canyon Tributary	18070103	1.0		N	A	1983

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 Happy Camp Canyon Tributary	Ventura County, Unincorporated Areas	Confluence with Little Happy Camp Canyon	Approximately 570 feet upstream of confluence with Little Happy Camp Canyon	18070103	0.1		N	A	1983
Little Sycamore Canyon	Ventura County, Unincorporated Areas	At mouth	Approximately 255 feet upstream of State Route 1	18070104	0.1		N	A	1988
Long Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Arroyo Las Posas	Approximately 1,375 feet upstream of Waters Road	18070103	5.6		N	A	2004
Long Grade Canyon	Ventura County, Unincorporated Areas	Confluence with Calleguas Creek	Approximately 1,225 feet upstream of Rincon Drive	18070103	1.8		N	AE	1988
Long Grade Canyon	Ventura County, Unincorporated Areas	Approximately 1,225 feet upstream of Rincon Drive	Approximately 1.5 miles upstream of Rincon Drive	18070103	1.3		N	A	1988
Madranio Canyon	Ventura County, Unincorporated Areas	At mouth	Approximately 1,150 feet upstream of State Route 1	18070101	0.3		N	A	1988
Magnolia Creek	Ventura County, Unincorporated Areas	Approximately 70 feet upstream of Fairweather Crossing	Approximately 1 mile upstream of Fairweather Crossing	18070102	0.9		N	A	1988
Mahan Barranca	Ventura County, Unincorporated Areas	Confluence with Arroyo Las Posas	Approximately 1,280 feet upstream of Old Balcom Canyon Road	18070103	2.6		N	A	1988
Maxy Canyon	Ventura County, Unincorporated Areas	Confluence with South Fork Canada De Los Alamos	Approximately 3,690 feet upstream of confluence with South Fork Canada De Los Alamos	18070102	0.7		N	A	1988

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
McNell Creek	Ojai, City of; Ventura County, Unincorporated Areas	Confluence with San Antonio Creek	Approximately 4,355 feet upstream of Chaparral Road	18070101	2.8		Y	AE	1988
Medea Creek	Ventura County, Unincorporated Areas	Approximately 1,240 feet downstream of Conifer Street	Approximately 80 feet upstream of Kanan Road	18070104	2.2		N	A	1988
Meier Canyon Creek	Simi Valley, City of; Ventura County, Unincorporated Areas	Confluence with Arroyo Simi	Approximately 3,745 feet upstream of confluence of South Meier Canyon	18070103	2.4		N	A	1990
Mira Monte Drain	Ventura County, Unincorporated Areas	Confluence with Happy Valley Drain South	Approximately 1,300 feet upstream of Loma Drive	18070101	0.75		N	AE	1988
Mission Drain	Camarillo, City of	Confluence with Camarillo Hills Drain	Approximately 1,230 feet upstream of Glenbrook Avenue	18070103	0.9		N	AE	2011
Moon Ditch	San Buenaventura, City of; Ventura County, Unincorporated Areas	Confluence with Santa Clara River	At Railroad	18070102	1.0		N	AE	1983
Moore Canyon	Ventura County, Unincorporated Areas	At county boundary	Approximately 1,190 feet upstream of county boundary	18070105	0.2		N	A	1988
Mud Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Santa Paula Creek	Approximately 4,020 feet upstream of confluence with Santa Paula Creek	18070102	0.7		N	A	1988
North Fork Canada De Los Alamos	Ventura County, Unincorporated Areas	At county boundary	Approximately 1,630 feet upstream of Forest Route 8N01	18070102	3.9		N	A	1988

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
North Ramona Place Drain	Ventura County, Unincorporated Areas	Confluence with Las Posas Estates Drain	Approximately 2,200 feet upstream of confluence with Las Posas Estates Drain	18070103	0.4		N	A	1983
North Simi Drain	Simi Valley, City of	Confluence with Arroyo Simi	Approximately 3,200 feet upstream of Erringer Road	18070103	2.5		N	AE	1995
Nyland Drain	Ventura County, Unincorporated Areas	Confluence with Beardsley Wash	Approximately 1.5 miles upstream of confluence with Beardsley Wash	18070103	1.5		N	A	1988
Oak Canyon Creek	Simi Valley, City of	Approximately 1,160 feet downstream of Highland Road	Approximately 730 feet upstream of Stonebrook Street	18070103	0.6		N	A	1990
Oak Canyon Creek (North)	Simi Valley, City of	Confluence with Dry Canyon Creek	Approximately 700 feet upstream of confluence with Dry Canyon Creek	18070103	0.1		N	AE	1990
Oak Creek	Ventura County, Unincorporated Areas	Confluence with South Fork Canada De Los Alamos	Approximately 2 miles upstream of confluence with South Fork Canada De Los Alamos	18070102	2.0		N	A	1988
Oak View Drain	Ventura County, Unincorporated Areas	Confluence with Ventura River	Approximately 50 feet upstream of East Oak View Avenue	18070101	1.0		N	A	1988
Oleary Creek	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 225 feet upstream of Toland Road	18070102	1.9		N	A	1988

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
Orcutt Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 1,285 feet upstream of confluence of West Fork Orcutt Canyon	18070102	2.1		N	A	1988
Oxnard West Drain	Port Hueneme, City of	At Victoria Avenue	Approximately 2,015 feet upstream of Lido Boulevard	18070103	1.5		N	A	1977
Pacific Ocean	Oxnard, City of; Port Hueneme, City of; San Buenaventura, City of; Ventura County, Unincorporated Areas	Entire Coastline	Entire Coastline	18070101 18070102 18070103 18070104	12.4		N	AE, VE	2015
Padre Juan Canyon Creek	Ventura County, Unincorporated Areas	At mouth	Approximately 1,080 feet upstream of State Route 1	18070101	0.2		N	A	1988
Palo Comado Canyon	Ventura County, Unincorporated Areas	County boundary	Approximately 1.7 miles upstream of Smoke Tree Avenue	18070104	2.1		N	A	1988
Paso Flores Canyon	Ventura County, Unincorporated Areas	Confluence with Sand Canyon	Approximately 1,335 feet upstream of East Hackney Road	18070103	0.5		N	A	1988
Peach Hill Wash	Moorpark, City of	Confluence with Arroyo Simi	Approximately 1,200 feet upstream of Country Hill Road	18070103	1.1		Y	AE	2004; Revised 2008
Piedra Canyon	Ventura County, Unincorporated Areas	Confluence with Arroyo Simi	Approximately 345 feet upstream of Smith Road	18070103	0.1		N	A	1988
Piru Creek	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 1,060 feet upstream of Southern Pacific Railroad	18070102	1.5		Y	AE	1988

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
Piru Creek	Ventura County, Unincorporated Areas	Approximately 1,060 feet upstream of Southern Pacific Railroad	Santa Felicia Dam	18070102	4.6		N	A	1988
Pole Creek	Fillmore, City of; Ventura County, Unincorporated Areas	Approximately 2,400 feet upstream of confluence with Santa Clara River	Approximately 1,440 feet upstream of Blaine Street Extended	18070102	1.1		Y	AE	1977
Pole Creek	Ventura County, Unincorporated Areas	Approximately 1,440 feet upstream of Blaine Street Extended	Approximately 2,670 feet upstream of Blaine Street Extended	18070102	0.2		N	A	1977
Ponderosa Drain	Camarillo, City of	Confluence with Camarillo Hills Drain	Approximately 1,575 feet upstream of Arneill Road	18070103	0.5		N	AE, AO	2011
Poplin Creek	Ventura County, Unincorporated Areas	Confluence with A Street Drain	Approximately 2,735 feet upstream of confluence of Poplin Creek Tributary	18070101	1.3		N	A	1988
Poplin Creek Tributary	Ventura County, Unincorporated Areas	Confluence with Poplin Creek	Approximately 500 feet upstream of confluence with Poplin Creek	18070101	0.1		N	A	1988
Puerta Zuela Barranca	Ventura County, Unincorporated Areas	Confluence with Coyote Canyon	Approximately 2,965 feet upstream of Donlon Road	18070103	1.9		N	A	1988
Punte Gorda Canyon	Ventura County, Unincorporated Areas	At mouth	Approximately 615 feet upstream of U.S. Highway 1/ Ventura Freeway	18070101	0.1		N	A	1988

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
Real Canyon	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 425 feet upstream of Center Street	18070102	1.6		N	A	1988
Reasoner Canyon	Ventura County, Unincorporated Areas	Confluence with Lake Piru	Approximately 3,140 feet upstream of confluence with Lake Piru	18070102	0.5		N	A	1988
Reeves Creek	Ventura County, Unincorporated Areas	Confluence with Thacher Creek	Approximately 3,800 feet upstream of McAndrew Road	18070101	1.3		Y	AE	1988
Reeves Creek	Ventura County, Unincorporated Areas	Approximately 3,800 feet upstream of McAndrew Road	Approximately 2,100 feet upstream of Reeves Road	18070101	0.7		N	A	1988
Reeves Creek Tributary	Ventura County, Unincorporated Areas	Confluence with Reeves Creek	Approximately 1,975 feet upstream of Topa Topa Ranch Road	18070101	0.8		N	A	1988
Reimer Ditch	Ventura County, Unincorporated Areas	At Los Angeles Avenue	Approximately 640 feet upstream of South Sespe Street	18070102	1.0		N	A	1988
Revolon Slough	Ventura County, Unincorporated Areas	Confluence with Calleguas Creek	Approximately 4,020 feet upstream of Hueneme Road	18070103	3.8		N	AE	1988
Revolon Slough	Ventura County, Unincorporated Areas	Approximately 4,020 feet upstream of Hueneme Road	Confluence with Camarillo Hills Drain	18070103	3.4		N	A	1988
Rincon Creek	Ventura County, Unincorporated Areas	Confluence with Pacific Ocean	Approximately 1,890 feet upstream of railroad	18070101	0.6		Y	AE, AO	1988

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
Rincon Creek	Ventura County, Unincorporated Areas	Approximately 1,890 feet upstream of railroad	Approximately 40 feet upstream of State Route 150	18070101	2.0		N	A	1988
Runckle Canyon	Simi Valley, City of	Confluence with Arroyo Simi	Approximately 450 feet upstream of Runkle Haul Road	18070103	2.3		N	A, AH	1990
Salt Canyon	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 1 mile upstream of confluence with Santa Clara River	18070102	1.0		N	A	1988
San Antonio Creek	Ojai, City of; Ventura County, Unincorporated Areas	Confluence with Ventura River	Approximately 1,695 feet upstream of Hermitage Road	18070101	10.1		Y	AE	1988
Sand Canyon	Ventura County, Unincorporated Areas	Confluence with Arroyo Las Posas	Approximately 1.3 miles upstream of confluence of Paso Flores Canyon	18070103	2.7		N	A	1988
Santa Ana Creek	Ventura County, Unincorporated Areas	Confluence with A Street Drain	Approximately 1.2 miles upstream of Santa Ana Road	18070101	1.7		N	A	1988
Santa Ana Creek Tributary	Ventura County, Unincorporated Areas	Confluence with Santa Ana Creek	Approximately 210 feet upstream of Santa Ana Road	18070101	0.2		N	A	1988
Santa Clara River	Fillmore, City of; Oxnard, City of; San Buenaventura City of; Santa Paula, City of; Ventura County, Unincorporated Areas	Approximately 2,290 feet downstream of Harbor Boulevard	Approximately 1.7 miles upstream of Del Rio	18070101 18070102	38.4		Y	AE	1983

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 Clara River Breakout	Oxnard, City of; Ventura County, Unincorporated Areas	Approximately 3,880 feet downstream of Harbor Boulevard	Confluence with Santa Clara River	18070102 18070103	1.5		Y	AE	1988
Santa Felicia Creek	Ventura County, Unincorporated Areas	Confluence with Lake Piru	County boundary	18070102	0.9		N	A	1988
Santa Felicia Spillway	Ventura County, Unincorporated Areas	Confluence with Piru Creek	At Santa Felicia Dam	18070102	0.7		N	A	1988
Santa Paula Creek	Santa Paula, City of; Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 1.6 miles downstream of Rafferty Road	18070102	2.0		N	A, A99	1988
Santa Paula Creek	Ventura County, Unincorporated Areas	Approximately 1.6 miles downstream of Rafferty Road	Approximately 360 feet upstream of Steckel Park Road	18070102	3.2		N	AE	1983
Santa Paula Creek	Ventura County, Unincorporated Areas	Approximately 360 feet upstream of Steckel Park Road	Approximately 4,535 feet upstream of confluence of Sisar Creek	18070102	2.2		N	A	1983
Santa Rosa East Tributary	Ventura County, Unincorporated Areas	Approximately 420 feet upstream of Santa Rosa Bridge	Approximately 650 feet upstream of Marvella Court	18070103	1.2		N	A	1988
Serrano Canyon	Ventura County, Unincorporated Areas	Confluence with Big Sycamore Canyon Creek	Approximately 1,865 feet upstream of confluence with Big Sycamore Canyon Creek	18070104	0.3		N	A	1988
Sespe Creek	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 4,690 feet downstream of Old Telegraph Road	18070102	3.5		N	A	1988
Sespe Creek	Ventura County, Unincorporated Areas	Approximately 4,690 feet downstream of Old Telegraph Road	Approximately 3.5 miles upstream of Old Telegraph Road	18070102	4.4		Y	AE	1988

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
Sespe Creek	Ventura County, Unincorporated Areas	Approximately 3.5 miles upstream of Old Telegraph Road	Approximately 4.8 miles upstream of Old Telegraph Road	18070102	1.3		N	A	1988
Shekell Road Drain	Ventura County, Unincorporated Areas	Confluence with South Grimes Canyon Wash	Approximately 1,550 feet upstream of Grimes Canyon Road	18070103	0.4		N	A	1988
Sherwood Creek	Ventura County, Unincorporated Areas	Confluence with Lake Sherwood	Approximately 370 feet upstream of East Carlisle Road	18070104	0.7		N	A	1988
Shields Canyon	Ventura County, Unincorporated Areas	Approximately 1,450 feet upstream of confluence with Santa Clara River	At Guiberson Road	18070102	0.2		N	A	1988
Sisar Creek	Ventura County, Unincorporated Areas	Confluence with Santa Paula Creek	Approximately 2,560 feet upstream of confluence of Koenigstein Road Wash	18070102	3.3		N	A	1988
Smith Canyon	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 880 feet upstream of East Guiberson Road	18070102	0.6		N	A	1988
Solano Verde Wash	Ventura County, Unincorporated Areas	Confluence with Coyote Canyon	Approximately 90 feet upstream of Solano Verde Drive	18070103	1.3		N	A	1988
Somis Drain	Camarillo, City of	Confluence with Calleguas Creek	At Las Posas Road	18070103	1.6		N	AE, AO	2011
South Branch Arroyo Conejo	Thousand Oaks, City of	Confluence with Arroyo Conejo	At Ventu Park Road	18070103	0.6		N	A	1976

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
South Branch Arroyo Conejo	Thousand Oaks, City of; Ventura County, Unincorporated Areas	At Ventu Park Road	Approximately 190 feet upstream of Portero Road	18070103	4.3		N	AE	1976
South Branch Arroyo Conejo	Thousand Oaks, City of; Ventura County, Unincorporated Areas	Approximately 190 feet upstream of Portero Road	Approximately 0.5 miles upstream of Sycamore Canyon Road	18070103	0.8		N	A	1976
South Fork Canada De Los Alamos	Ventura County, Unincorporated Areas	At county boundary	Approximately 2,250 feet upstream of confluence of Maxy Canyon	18070102	2.6		N	A	1988
South Grimes Canyon Wash	Moorpark, City of; Ventura County, Unincorporated Areas	Approximately 600 feet upstream of confluence with Arroyo Las Posas	Approximately 2,255 feet upstream of Turfway Road	18070103	2.8		N	A	1988
South Grimes Canyon Wash (North)	Ventura County, Unincorporated Areas	At Ojai Street	Approximately 2,840 feet upstream of Bardsdale Avenue	18070102	1.2		N	A	1988
South Grimes Canyon Wash Tributary	Ventura County, Unincorporated Areas	Confluence with South Grimes Canyon Wash	Approximately 1,845 feet upstream of confluence with South Grimes Canyon Wash	18070103	0.3		N	A	1988
Stewart Canyon Creek	Ojai, City of; Ventura County, Unincorporated Areas	Confluence with San Antonio Creek	Approximately 1,460 feet upstream of McKee Street	18070101	1.7		Y	AE	1977
Sulphur Canyon	Ventura County, Unincorporated Areas	Confluence with Canada Larga	Approximately 260 feet upstream of Canada Larga Road	18070101	0.5		N	A	1988
Sycamore Canyon	Simi Valley, City of	Confluence with Arroyo Simi	At East Bonita Drive	18070103	0.8		N	AO	1990

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
Sycamore Canyon	Simi Valley, City of	Sycamore Canyon Dam	Approximately 3,000 feet upstream of Sycamore Canyon Dam	18070103	0.5		N	AE	1990
Sycamore Creek	Ventura County, Unincorporated Areas	Confluence with Lion Canyon Creek	Approximately 1,215 feet upstream of Highwinds Road	18070101	0.3		N	A	1988
Tapo Canyon Channel	Simi Valley, City of	Confluence with Arroyo Simi	Approximately 685 feet upstream of Simi Valley Freeway	18070103	1.7		N	AE, AH	1995
Tapo Canyon Channel	Simi Valley, City of; Ventura County, Unincorporated Areas	Approximately 685 feet upstream of Simi Valley Freeway	Approximately 320 feet upstream of Walnut Avenue	18070103	1.1		N	A	1995
Tapo Canyon Channel	Simi Valley, City of; Ventura County, Unincorporated Areas	Approximately 320 feet upstream of Walnut Avenue	Approximately 2,110 feet upstream of Walnut Avenue	18070103	0.3		N	AE	1995
Tapo Canyon Creek	Simi Valley, City of; Ventura County, Unincorporated Areas	Confluence with Tapo Canyon Channel	Approximately 1,340 feet upstream of confluence of Tripas Canyon Creek	18070103	2.0		N	A	1988
Tapo Canyon Creek (North)	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 450 feet upstream of East Tributary Tapo Canyon	18070102	2.4		N	A	1988
Tapo Canyon Tributary	Simi Valley, City of; Ventura County, Unincorporated Areas	Confluence with Tapo Canyon Creek	Approximately 290 feet upstream of Tapo Canyon Road	18070103	0.1		N	A	1988
Thacher Creek	Ojai, City of; Ventura County, Unincorporated Areas	Confluence with San Antonio Creek	Approximately 245 feet upstream of confluence of Reeves Creek	18070101	2.3		Y	AE	1988

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
Thacher Creek	Ventura County, Unincorporated Areas	Approximately 245 feet upstream of confluence of Reeves Creek	Approximately 490 feet upstream of Grand Avenue	18070101	0.6		N	AO	1988
Thacher Creek	Ventura County, Unincorporated Areas	Approximately 490 feet upstream of Grand Avenue	Approximately 2,015 feet upstream of Thacher Road	18070101	1.1		Y	AE	1988
Thousand Oaks North Drain	Thousand Oaks, City of	Confluence with Arroyo Conejo	Approximately 810 feet upstream of El Cerrito Drive	18070103	1.6		N	AE	2004
Tierra Rejada Creek	Ventura County, Unincorporated Areas	Confluence with Arroyo Santa Rosa	Approximately 1.1 miles upstream of confluence with Arroyo Santa Rosa	18070103	1.1		N	A	1988
Timber Canyon	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 2.6 miles upstream of confluence of Boosey Canyon	18070102	3.9		N	A	1988
Todd Barranca	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 930 feet upstream of confluence of Wheeler Canyon West Fork	18070102	8.4		N	A	1988
Torey Canyon	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 1,465 feet upstream of East Guiberson Road	18070102	1.0		N	A	1988
Tripas Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Tapo Canyon Creek	Approximately 2,630 feet upstream of confluence with Tapo Canyon Creek	18070103	0.5		N	A	1988

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
Tripas Canyon Tributary	Ventura County, Unincorporated Areas	Approximately 215 feet upstream of Tripps Canyon Road	Approximately 1.1 miles upstream of Tripps Canyon Road	18070103	1.1		N	A	1988
Valley Road Wash	Ventura County, Unincorporated Areas	Confluence with Hidden Valley Wash	Approximately 2,500 feet upstream of Valley Road	18070104	1.0		N	A	1988
Ventura River	San Buenaventura, City of; Ventura County, Unincorporated Areas	Mouth at Pacific Ocean	Approximately 4,650 feet upstream of Camino Cielo Road	18070101	16.2		Y	AE	1984
Walnut Canyon Drain	Moorpark, City of	Confluence with Gabbert Canyon Creek	Approximately 4,100 feet upstream of High Street	18070103	2.6		N	AE	2004
Warring Canyon Creek	Ventura County, Unincorporated Areas	Confluence with Real Canyon	Approximately 2,760 feet upstream of Center Street	18070102	1.1		N	A	1988
Warring Wash	Ventura County, Unincorporated Areas	Confluence with Santa Clara River	Approximately 2,030 feet upstream of Pacific Avenue	18070102	1.0		N	A	1988
West Camarillo Hills Tributary	Camarillo, City of	Confluence with Camarillo Hills Drain	At Las Posas Road	18070103	0.6		N	AE, AO	2011
West Fifth Street Drain	Oxnard, City of; Ventura County, Unincorporated Areas	Confluence with E Street Drain	At South Patterson Road	18070103	1.6		N	A	1977
West Fork Medea Creek	Ventura County, Unincorporated Areas	Confluence with Medea Creek	Approximately 4,110 feet upstream of confluence with Medea Creek	18070104	0.7		N	A	1988

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
West Fork Orcutt Canyon	Ventura County, Unincorporated Areas	Confluence with Orcutt Canyon Creek	Approximately 380 feet upstream of confluence with Orcutt Canyon Creek	18070102	0.07		N	A	1988
West Fork Salt Canyon	Ventura County, Unincorporated Areas	At county boundary	Approximately 1,260 feet upstream of confluence of West Fork Salt Canyon Tributary	18070102	0.8		N	A	1988
West Fork Salt Canyon Tributary	Ventura County, Unincorporated Areas	Confluence with West Fork Salt Canyon	At county boundary	18070102	0.3		N	A	1988
West Tributary Long Canyon	Ventura County, Unincorporated Areas	Confluence with Long Canyon Creek	Approximately 1,525 feet upstream of Stockdon Road	18070103	0.6		N	A	1988
West Wooley Drain	Port Hueneme, City of	Confluence with Oxnard West Drain	Approximately 1,950 feet upstream of confluence of Oxnard West Drain	18070103	0.3		N	A	1977
White Oak Creek	Simi Valley, City of	Confluence with Arroyo Simi	Approximately 2,525 feet upstream of Ziegler Drive	18070103	1.8		N	A	1993
White Oak Tributary	Simi Valley, City of	Confluence with White Oak Creek	Approximately 980 feet upstream of confluence with White Oak Creek	18070103	0.2		N	A	1993
Windmill Canyon	Ventura County, Unincorporated Areas	Confluence with Gillibrand Canyon Creek	Approximately 945 feet upstream of Windmill Canyon Road	18070103	0.6		N	A	1988

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
Windmill Canyon Tributary	Ventura County, Unincorporated Areas	Confluence with Windmill Canyon	Approximately 790 feet upstream of confluence with Windmill Canyon	18070103	0.1		N	A	1988
Wood Canyon	Ventura County, Unincorporated Areas	Confluence with Big Sycamore Canyon Creek	Approximately 3,220 feet upstream of confluence with Big Sycamore Canyon Creek	18070104	0.6		N	A	1988
Wood Ranch Reservoir	Ventura County, Unincorporated Areas	Ward Circle	Ward Circle	18070103		0.3	N	A	1988

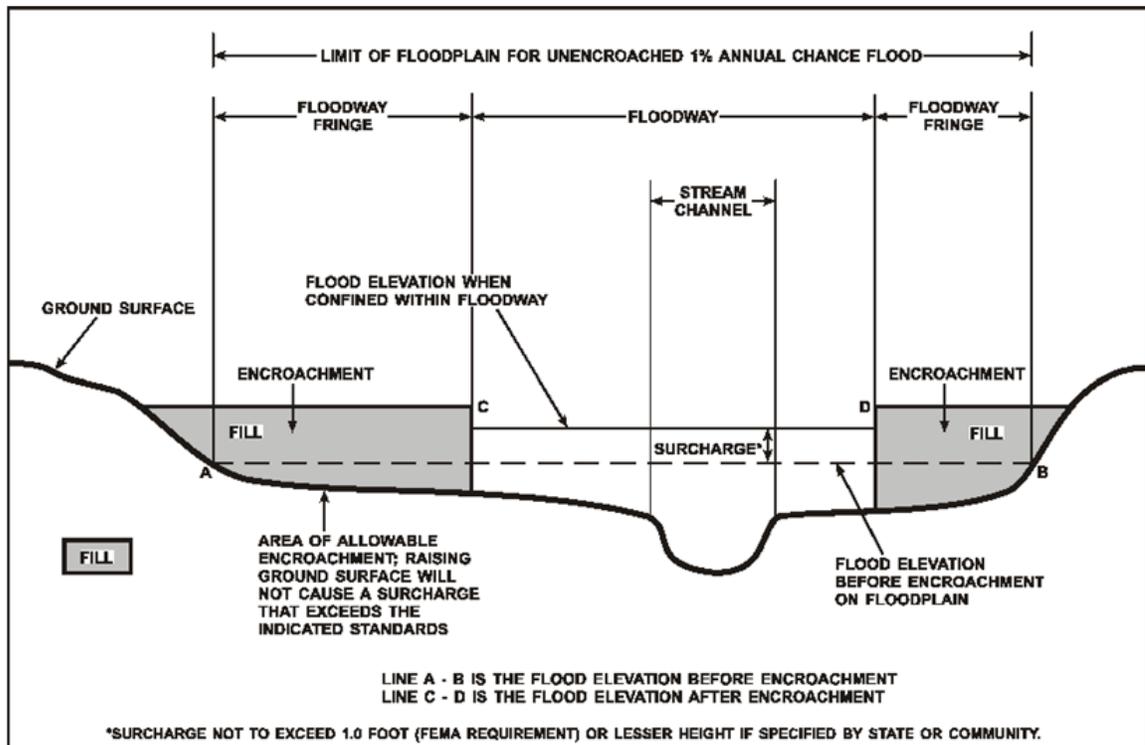
2.2 Floodways

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. The floodways in this project are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway projects.

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 study.

2.5 Coastal Flood Hazard Areas

Areas of the coast are subject to flooding during coastal storms and the FIRM panels depict the flood hazard areas during the 1% annual chance coastal flood event. Flooding is typically caused by several nearshore processes, which can include high storm surge and large waves, although the magnitude of each process varies regionally. Because the processes that cause coastal flooding are unique and different from the processes in riverine flooding, this section provides a brief summary of coastal flood processes.

2.5.1 Water Elevations and the Effects of Waves

Nearly all studies include analysis of offshore water levels and the determination of stillwater levels (SWL). The SWL is the water surface elevation resulting from astronomical tides, storm surge, and freshwater inputs, but excluding the effects of wave setup and wave runoff.

- *Astronomical tides* are periodic increases and decreases in nearshore water surface elevations caused by the gravitational forces exerted by the earth, moon and sun.

- *Storm surge* is the increase in nearshore water surface elevations that occur during large storm events. These events can include air pressure changes and strong winds that force water up against the coast.
- *Freshwater inputs* include runoff from surfaces and overland flow, and inputs from rivers that temporarily increase nearshore water surface elevations.

The 1% annual chance stillwater elevation (SWEL) is the statistically determined SWL that has been calculated for the 1% annual chance storm event. In a response-based analysis, the 1% annual chance SWEL is typically calculated from analyses of tide gage records or numerical model output. Observed tide gage records are usually assumed to include all the components of the SWL listed above. The 1% annual chance SWEL is largely determined by the highest historical SWL events for a particular region, which often occur during periods of combined high tides and storm surge. SWELs for different probabilities of occurrence can also be calculated.

During a coastal storm, large waves break in the surf zone and generate wave setup and runup at the shoreline. The total water level (TWL) is the SWL combined with the heights of wave setup and wave runup.

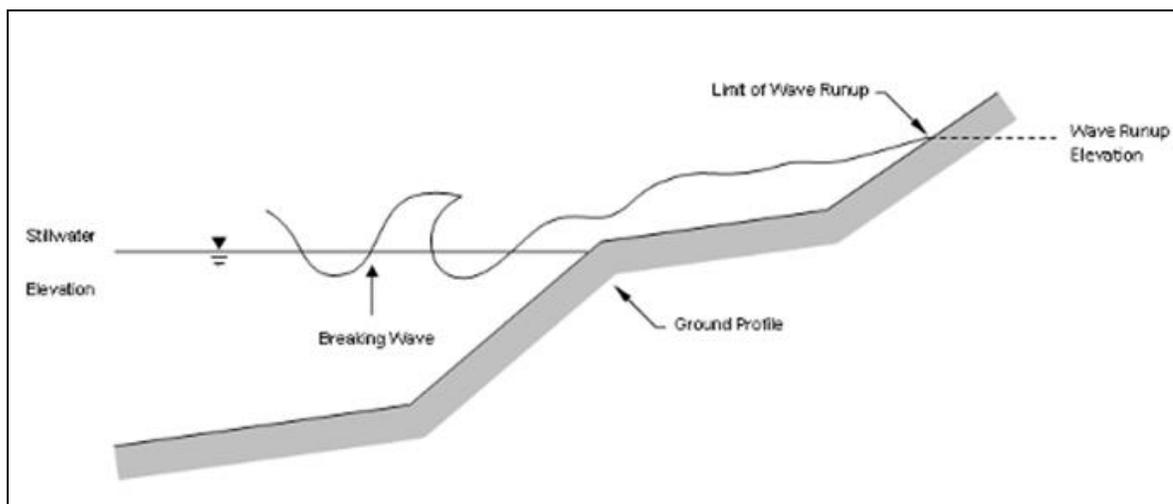
- *Wave setup* is the increase in water levels at the shoreline caused by the reduction of waves in shallow water. It occurs as breaking wave momentum is transferred across the surf zone.
- *Wave runup* is the vertical uprush of water across the foreshore and backshore (beach, bluff, or structure) due to breaking waves. It is usually a function of the height and period of the offshore waves, geometry of the shoreline, particularly slope, and the roughness.

Like the 1% annual chance SWEL, the TWL can be statistically determined for different probabilities of occurrence. In a response-based analysis, wave setup and runup heights are typically calculated using standard engineering equations or numerical models which incorporate offshore wave conditions. Time series of wave setup and runup heights are then combined with records of the SWL to form a time series of the TWL. On the Pacific coast, the highest TWLs are often the results of periods of combined high tides and large, long period waves during El Niño winters. The 1% annual chance TWL is then statistically determined from the time series using a statistical extreme value analysis (EVA).

Coastal analyses may also examine the effects of 1% annual chance events by analyzing storm-induced erosion, overland wave propagation, and/or wave overtopping.

- *Storm-induced erosion* is the eroding of the shoreline caused by a specific storm event, as opposed to long-term retreat which occurs over longer time periods.
- *Overland wave propagation* describes the local, wind-generated waves that form over inundated areas. It includes the combined effects of nearshore wave characteristics, inundation depth, wind strength and direction, and variations in ground elevation and land use.
- *Wave overtopping* refers to the splash or bore overtopping that occurs when wave runup passes over the crest of a barrier, such as a bluff or structure.

Figure 5: Wave Runup Transect Schematic



2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

For coastal communities along the Atlantic and Pacific coasts, the Gulf of Mexico, the Great Lakes, and the Caribbean Sea, flood hazards must take into account how storm surges, waves, and high tides impact the coastline. Storm surge and waves must also be considered in assessing flood risk for certain communities on rivers or large inland bodies of water.

Beyond immediate 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 areas of the Pacific coast, wave setup and runup are the dominant components of flooding. The extent of the 1% annual chance floodplain in these areas is derived from the TWL (SWL combined with wave effects) for the 1% annual chance event. The methods that were used for calculation of the 1% annual chance TWL for coastal areas are described in Section 5.3 of this FIS Report. An example of the inland extent of flooding due to the 1% annual chance TWL is shown in Figure 8.

In areas where the calculated 1% annual chance TWL exceeds coastal barrier features, the 1% annual chance floodplain is based upon the inland limit of wave overtopping. The methods that were used for calculation of wave overtopping are described in Section 5.3 of this FIS Report. In limited areas that are expected to be inundated during the 1% annual chance event, the floodplain boundaries are determined by analysis of overland wave propagation. These areas are limited to inland bays on the Pacific coast.

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 generally calculated as the 1% annual chance TWL for each coastal reach. In areas of wave overtopping, coastal BFEs are determined from calculated splash or bore

elevations. In isolated areas of overland wave propagation, coastal BFEs are determined from modeled overland wave heights.

Coastal BFEs are calculated along analysis transects that are oriented perpendicular to the coastline and extend from an offshore water depth to beyond the inland limit of coastal flooding. Results of these analyses are mapped adjacent to each transect and are accurate until local topography, vegetation, or development type and density within the community significantly change.

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. These can include wave overtopping zones.
- *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.

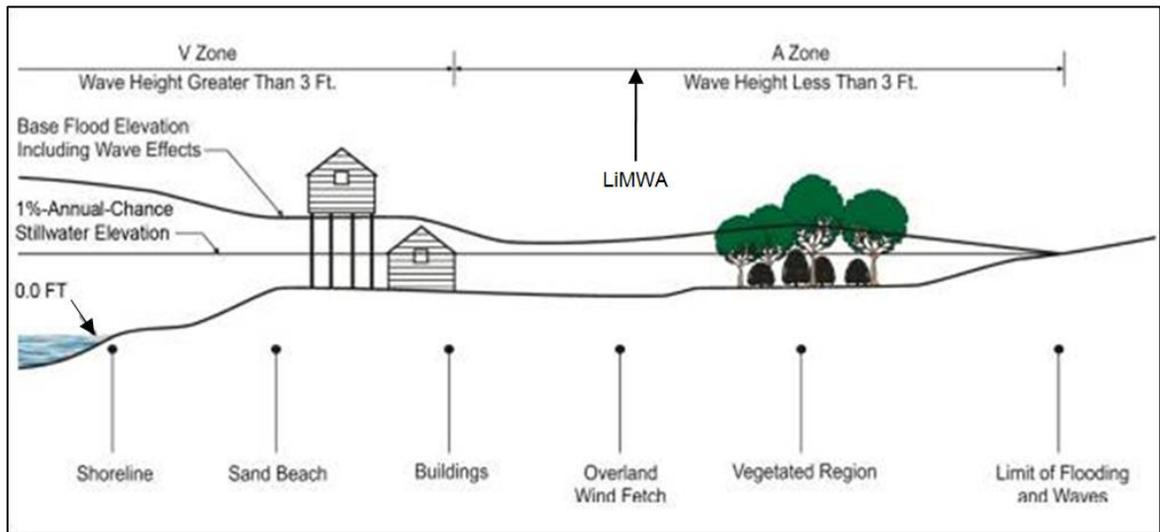
CHHAs are designated as “V” zones (for “velocity wave zones”) and are subject to more stringent regulatory requirements and a different flood insurance rate structure. The areas of greatest risk are shown as VE on the FIRM. Zone VE is further subdivided into elevation zones and shown with BFEs on the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

The landward limit of the PFD occurs at the dune heel 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 BFE (which is based upon the 1% annual chance TWL or wave overtopping elevations), the 1% annual chance SWEL, 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 incident waves and overland propagation of waves 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 Figure 3, “Map Legend for FIRM.”

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.

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 Figure 3, “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 Ventura County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Camarillo, City of	A, AE, AO, X
Fillmore, City of	A, AE, X
Moorpark, City of	A, AE, AH, X
Ojai, City of	A, AE, X
Oxnard, City of	A, AE, AH, AO, D, VE, X
Port Hueneme, City of	A, AE, VE, X
San Buenaventura, City of	A, AE, AH, VE, X
Santa Paula, City of	A, A99, AE, AO, X
Simi Valley, City of	A, AE, AH, AO, X
Thousand Oaks, City of	A, AE, X
Ventura County, Unincorporated Areas	A, A99, AE, AH, AO, D, VE, X

3.2 Coastal Barrier Resources System

This section is not applicable to this Flood Risk Project.

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)
Calleguas	18070103	Calleguas Creek	Calleguas Creek drains most of the southeastern part of Ventura County including the Cities of Thousand Oaks, Simi Valley, Moorpark, and Camarillo.	325
Cuyama	18060007	Cuyama River	Located in northern Santa Barbara, southern San Luis Obispo, southwestern Kern, and northwestern Ventura Counties. It is a sparsely inhabited area where land is largely used for agriculture.	1,143
Los Angeles	18070105	Los Angeles River	The basin is a coastal lowland area bound by the Santa Monica Mountains on the north, northeast and east sides. In the southeast the basin is bordered by the Santa Ana Mountains.	830
Middle Kern-Upper Tehachapi-Grapevine	18030003	Kern River	Drains an area of the southern Sierra Nevada mountains northeast of Bakersfield.	2,617
San Pedro Channel Islands	18070107	Pacific Ocean	Located in the Channel Islands National Park off the coast of California. The basin is relatively undeveloped.	700
Santa Barbara Channel Islands	18060014	Pacific Ocean	Located in the Channel Islands National Park off the coast of California.	840
Santa Barbara Coastal	18060013	Pacific Ocean	The basin is bounded by the Mission Ridge fault to the north, the Santa Barbara and Montecito basins to the east, and an unnamed fault to its west. Sycamore, Mission, and San Roque Creeks, and Arroyo Burro drain the basin before discharging into the Pacific Ocean.	670

Table 5: Basin Characteristics, continued

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	The largest watershed which originates in Los Angeles County. Approximately one-half of the watershed is located in Ventura County and one-half is in Los Angeles county, with small portions in Kern and Santa Barbara Counties.	644
Santa Monica Bay	18070104	Pacific Ocean	Located between Pointe Dume in Malibu, and the Palos Verdes Peninsula. Waterways draining into Santa Monica Bay are Ballona Creek, Malibu Creek, and Topanga Creek.	670
Santa Ynez	18060010	Santa Ynez River	The river originates in Los Padres National Forest, on the northern slope of the Santa Ynez Mountains near the Ventura County border and drains much of the southern half of Santa Barbara County.	896
Ventura	18070101	Ventura River	Originates on the south slopes of Pine Mountain northwest of the City of Ojai and flows into the Pacific Ocean.	226

4.2 Principal Flood Problems

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

Table 6: Principal Flood Problems

Flooding Source	Description of Flood Problems
Arroyo Conejo	Portions of Arroyo Conejo are enclosed in a conduit and other portions flow as open channels. The closed conduit is designed to carry the 5-percent-annual-chance frequency peak discharge with freeboard. The capacity of the conduit was checked at several places to ascertain whether it would carry the 1-percent-annual-chance peak discharge, and this was confirmed. However, flooding would occur at the 0.2-percent-annual-chance frequency event. Flow is restricted by inlet conditions at Hillcrest Drive and Westlake Boulevard, where overland flow originates. Flows would then be in a southerly direction down Siena Drive towards the Ventura Freeway, then northwesterly and somewhat parallel to Ventura Freeway, and finally reentering the Arroyo Conejo conduit in the vicinity of Oakwood Drive. Average depth of flooding would be 0.5 foot for the 0.2-percent-annual-chance frequency event.

Table 6: Principal Flood Problems, continued

Flooding Source	Description of Flood Problems
Arroyo Simi	<p>Low-lying areas adjacent to the Arroyo Simi and its tributaries are subject to periodic flooding. Significant floods occurred in 1978, 1980, 1983, and 1992. The highest discharge recorded within the City of Simi Valley was 10,570 cfs on March 1, 1983, at the Madera Bridge (County of Ventura, 1983). A flood peak of this magnitude has approximately a 3-percent- chance of recurrence each year, a 30-year flood (County of Ventura, 1983).</p> <p>The maximum flood of record on Arroyo Simi at the City of Moorpark occurred in March 1983 and had a peak discharge of 10,800 cfs.</p> <p>Devastating floods struck Southern California during the periods of January 18-26 and February 20-26, 1969 (USACE, 1969). In Ventura County, the floods were the greatest recorded to that date. The January flood was a result of the highest monthly precipitation total ever recorded in Ventura County at that time. The February flood was a result of intense rainfall similar in magnitude to the rainfall that caused the record breaking flood of January 23-27. The damages from the February flood were by far the greatest in the history of Ventura County and were largely due to the reduced channel capacities resulting from debris and sediment deposition of earlier floods.</p> <p>The January and February flood flows on the Arroyo Simi were mostly contained in the stream channel of the reach extending from Sinaloa Road to Tapo Street. Damages due to erosion, primarily affected grade stabilizers and rock revetments along the channel.</p> <p>A debris-laden flow from an unnamed canyon tributary to Tapo Canyon threatened the destruction of three homes in the tributary. Flood flows from the North Simi Drain, a tributary of Arroyo Simi, deposited large quantities of sediment in an orange grove and on Cochran Street—a major thoroughfare in the City of Simi Valley. Flood flows on the Sycamore Canyon Creek overtopped the stream banks in the upstream reach and damaged a county golf course and Madera Road—another major thoroughfare.</p>
Arundell Barranca	<p>Overflow for the 0.2-percent-annual-chance event on Arundell Barranca at U.S. Highway 101 flows westerly to Barlow Barranca. Barlow Barranca has insufficient capacity at U.S. Highway 101 for both the land 0.2-percent-annual-chance floods; therefore, excess runoff flows westerly to the Mills Road Drain, which also has insufficient capacity at U.S. Highway 101. Overflow runoff continues westerly to Channel Drive where it flows over the Southern Pacific Railroad tracks and returns to Arundell Barranca.</p>
Beardsley Wash	<p>Beardsley Wash causes extensive shallow flooding upstream of U.S. Highway 101.</p>
Brown Barranca	<p>Peak flows in excess of the 2-percent-annual-chance flood above Blackburn Road overtop the eastern bank and flow southeasterly, where they pond along with excess flow from Franklin Barranca. During extreme events, the flows overtop the Santa Paula Freeway (Stat Highway 126). The 0.2-percent-annual-chance flood overtops the road crossings of Telegraph, Henderson, and Darling Roads, but the flows return to the channel downstream.</p>

Table 6: Principal Flood Problems, continued

Flooding Source	Description of Flood Problems
Calleguas Creek	<p>Rainfall throughout the Calleguas Creek watershed is generally quite low and extremely variable, making the identification of the maximum flood of record extremely difficult. The largest flood of record in the City of Simi Valley occurred on February 16, 1980, and had a peak discharge of 9,310 cfs at the Madera Road Bridge from a drainage area of 71 square miles.</p> <p>The maximum flood of record at the City of Moorpark occurred in March 1983, and had a peak discharge of 10,800 cfs.</p> <p>Downstream of the Cities of Moorpark and Simi Valley along Calleguas Creek, in the vicinity of the California State University Channel Islands (CSUCI), the largest recorded flood occurred on March 1, 1983, with a peak discharge of 25,900 cfs.</p> <p>The Ventura County Watershed Protection District (VCWPD) maintained a stream gauging station on Calleguas Creek above U.S. Highway 101 (Ventura Freeway) from 1971 to 1997. The largest recorded flood at that gage site on Calleguas Creek occurred on March 1, 1983. The peak discharge reached 17,200 cfs at the U.S. Highway 101 gauging station; this discharge is equivalent to a recurrence interval of approximately 30 years.</p> <p>The peak flows near the mouth of Calleguas Creek reached the 3-percent-annual-chance flood level. In the center of Simi Valley, extensive overtopping of stabilizers widened the channel to twice its normal size. Peak flows lasted four hours. The sustained high velocity, debris-laden water tore at channel linings, undercut stabilizers and threatened adjacent homes (County of Ventura, 1983).</p> <p>Flood damage in the Calleguas Creek watershed generally consists of erosion and sedimentation to agriculture land, residential and business developments, transportation facilities, and channel improvements. However, in March 1983, flood flows broke through the leveed banks of Calleguas Creek in the lower reach below U.S. Highway 101 and caused an estimated \$21.5 million in damage to agriculture properties. The City of Camarillo estimate of damage was \$160,000. Damage during the February 1980 flood totaled approximately \$9 million. This occurred primarily at the Point Mugu Naval Air Station, which was directly in the line of the floodwaters that had breached the Calleguas Creek levees. In addition, approximately 1,500 acres of farmland were covered by floodwaters.</p> <p>In 1998, the Ventura County Watershed Protection District moved the location of the Calleguas Creek gage No. 806 from upstream of U.S. Highway 101 to the downstream side of the U.S. Highway 101 Bridge over Calleguas Creek. The largest recorded flood at this gage site occurred January 9, 2005. The peak discharge reached 18,000 cfs at the U.S. Highway 101 gauging station; this discharge is equivalent to a recurrence interval of approximately 35 years.</p> <p>Previous studies of Calleguas Creek and its unimproved tributaries show water velocities from 1 to 12 feet per second (0.7 to 8.2 mph). Velocities greater than 3 feet per second (2.0 mph) in water deeper than 3 feet are considered hazardous.</p> <p>Unofficial records derived from statements by local residents indicate that large floods occurred in 1862, 1884, 1889, 1914, and 1916; the 1862 and 1884 floods were likely the largest of these unrecorded flows.</p>

Table 6: Principal Flood Problems, continued

Flooding Source	Description of Flood Problems
Camarillo Hills Drain	The largest storm event on record within the City of Camarillo was February 6, 1998. This event caused widespread flooding in many part of the city, costing well over a million dollars in damages. The only available stream gage in the impacted area watershed is located along Camarillo Hills Drain downstream of U.S. Highway 101. The official Ventura county Watershed Protection District (VCWPD) gage record shows the Friday, February 6, 1998, storm was the largest storm event on record since the gage began recording in 1977. The recurrence interval for this storm even at this gage is approximately a 35 year event. This event caused flooding in many areas of the City of Camarillo, varying in depth and extent. The flooding incident, which only lasted approximately 3-4 hours in the morning, dumped 3 inches of rain very rapidly and overwhelmed the drainage system.
Conejo Creek	The largest recorded flood on Conejo Creek occurred on March 1, 1983. The peak discharge reached 13,300 cfs at the U.S. Highway 101 gauging station; this discharge is equivalent to a recurrence interval of approximately 20 years. Flood damage in the Conejo Creek watershed generally consists of erosion and sedimentation. In March 1983, estimated damage was approximately \$1 million, with approximately 75 percent of that amount estimated for debris and silt removal to restore the creek capacity. Flood flows on Conejo Creek add to damages occurring from Calleguas Creek flood flows below the confluence of the two creeks.
El Rio Drain	El Rio Drain causes extensive shallow flooding upstream of U.S. Highway 101.
Fox Canyon Storm Drain	The principal danger of flooding along the Fox Canyon Storm Drain is due to the inadequate inlet under Daly Road that could become clogged from debris generated upstream of Daly Road.
Franklin Barranca	Discharge in excess of the 1-percent-annual-chance event breaks out at Darling Road and the sheet flow continues to the Santa Clara River through Saticoy.
Lang Creek	Flooding due to the 1-percent-annual-chance frequency event is limited to the downstream portion of Lang Creek and the area between Wilbur Road to just north and east of Gainsborough Road.
Moon Ditch	The Moon Ditch culverts under U.S. Highway 101 cannot convey the 1-percent-annual-chance flood discharge and the excess flows southeasterly along Ventura Boulevard and either returns at the Southern Pacific Railroad crossing or continues southeasterly to the Santa Clara River.
Oxnard Industrial Drain	Oxnard Industrial Drain causes shallow flooding a the intersection of Oxnard Boulevard (State Highway 1) and Date Street.
Oxnard West Drain	Oxnard West Drain causes shallow flooding at the north side of the intersection of West Wooley Road and Ventura Avenue.

Table 6: Principal Flood Problems, continued

Flooding Source	Description of Flood Problems
Pacific Ocean	<p>The Ventura County coastline is exposed to winter storms generated in the North Pacific Ocean and to summer storms generated in the South Pacific Ocean. Normally, the coastline is sheltered by Point Conception from ocean swells generated by the northern storms. On rare occasions when the storm track migrates far enough south, the county is exposed to those swells. Under these conditions, breakers of 6 to 10 feet have been observed, frequently causing damage to inadequately protected structures and facilities located along the shoreline. Areas particularly susceptible to severe wave action, erosion, and flooding include Sea Cliff Colony, Rincon Point Beach, Faria Beach Bank, Faria Beach Colony, Solimar Beach Colony, Oxnard Shores, Silver Strand Beach, and several sections of U.S. Highway 101 from Rincon Point to Emma Wood State Park (USACE, 1980).</p> <p>A brief description of several significant storms provides historic information to which coastal flood hazards and the projected flood depths can be compared (State of California, 1980; Daily Free Press, 1907; Ventura County Star Free Press, 1939; USACE, 1978; Steve Howe, 1978).</p> <p><u>December 9, 1907</u> Four hundred feet or more of the Ventura County wharf was carried out to sea by high turbulent waves. Shortly after noon, the waves, concurrent with a high tide, lifted the deck of the wharf and deposited the deck and piles into the ocean. The entire deck was destroyed except for one pile indicating where the wharf had been. Later, the wreckage was washed onshore and the beach below Ash Street was strewn with lumber. The entire loss was difficult to estimate. Besides the loss to the structure itself, there was a loss of oil pipes and loading fixtures, a derrick engine, and lumber.</p> <p><u>December 24, 25, and 26, 1939</u> The Ventura County coastline and particularly the Point Mugu-Hueneme Harbor area bore the brunt of a terrific storm which swept down the southland coast on December 24th. Twenty-four people were reported drowned when a fishing boat capsized. Several boats and pleasure craft were wrecked or sunk. The 60 mph gales which swept up the Pacific Ocean off Mexico destroyed the Point Mugu fishing pier, ripped out a 300-foot section of the Hueneme pier, and produced costly holes and gouges in the entrance channel of Port Hueneme.</p> <p><u>December 1969</u> High waves stemming from intense storms in the Aleutian Islands hit the Ventura County shoreline from December 4 to 7. The swell was measured at 20 feet. From December 13 to 16 another set of waves damaged the beachfront road at Silver Strand Beach. A final set of waves hit the county shoreline on December 19th. Shorefront homes were damaged, and Mandalay Beach Road in Oxnard Shores was flooded. Total damage was estimated at hundreds of thousands of dollars.</p> <p>The channel capacity of Rincon Creek is affected by the dense growth of trees and bushes in the main channel and overbank areas.</p>

Table 6: Principal Flood Problems, continued

Flooding Source	Description of Flood Problems
Pacific Ocean (continued)	<p>Installation of the bridge culvert crossing U.S. Highway 101 and the Southern Pacific Railroad further obstructs the floodflow. During the 1969 storms, several near-bank residential houses along the reach downstream of the culvert were threatened by the floods, and one house near the ocean was badly damaged.</p> <p><u>Winter 1977-1978</u> A combination of high astronomical tides, strong onshore winds, and high storm waves resulted in significant coastal flooding in Ventura County. Storm wave damage to private property in Ventura County exceeded \$300,000. The major impact areas were Mussel Shoal, Faria Beach Colony, and Oxnard Shores. In Faria Beach Colony alone, over 25 beachfront homes suffered broken windows, flooded interiors, and damaged or destroyed seawalls, bulkheads, stairs, patios, and decks. Approximately \$135,000 was required to restore state beaches and facilities damaged by storm waves. For example, at Emma Wood State Park, the beach and recreational vehicle parking area was eroded, the concrete base of a lifeguard tower was washed away, and the road into the park was destroyed. Other damages resulting from high waves occurred at various points along the county coastline. Sections of old U.S. Highway 101 were damaged when protective rock was removed and debris deposited on the highway by wave action. The Ventura Marina was also damaged by wave action. Armor rock was badly displaced along parts of the marina breakwater, navigation lights were damaged, and a concrete walk was destroyed, requiring repairs amounting to between \$200,000 and \$300,000.</p> <p><u>Winter 1982-1983</u> The winter storms of 1982-83 were a significant historical event not only due to an El Nino season, but also in the amount of damage they inflicted on the entire state of California. The first major storm set started Wednesday, January 19, 1983 and concluded Saturday morning January 29, 1983 dumping about six inches on the City of Ventura. The storms wreaked havoc on beachfront homes and roads in addition to creek and river flooding occurring in Ojai and Meiners Oaks. Record high tides combined with an overnight storm on Thursday, January 27th caused major damage. The final damage estimate for the storm season within Ventura County was \$15 million.</p> <p><u>Winter 1997-1998</u> The total cost of damage from the winter storms of 1997-78 total approximately \$50 million. Coastal flooding damaged houses and other coastline structures and parking lots. Inland, major damage was sustained to the County's roadways and other public works facilities, in addition to flooding to residential areas and structures. The County's agricultural crops suffered significant damage with losses exceeding \$20 million. Within the City of Camarillo, over \$1 million of damage occurred from a single storm event lasting less than 6 hours on February 6, 1998.</p>

Table 6: Principal Flood Problems, continued

Flooding Source	Description of Flood Problems
Rice Avenue Drain	The Southern pacific Railroad roadway acts as a regulating control and creates a ponding area at the crossing of Ventura Road and the Southern Pacific Railroad.
San Antonio Creek	<p>Flooding is aggravated by several factors, such as inadequate channel cross sections, culverts at roadways, poor flow line alignment, excessive debris, and some encroachment of development.</p> <p>Damaging floods along San Antonio Creek and its tributaries in the vicinity of the City of Ojai are reported to have occurred as early as 1862. Floods of sufficient magnitude to cause extensive damage occurred in 1862, 1867, 1884, 1911, 1914, 1938, and 1943. Major floods recorded along San Antonio Creek (those having a peak discharge of more than 3,500 cfs at the gauging station north of Casitas Springs) occurred in 1952, 1958, 1965, 1966, and 1969. The flood of January 25, 1969, had the largest recorded peak discharge (16,200 cfs).</p>
Santa Clara Drain	Santa Clara Drain causes extensive shallow flooding upstream of U.S. Highway 101.
Santa Clara River	<p>During floods along the Santa Clara River, the riverbanks are subject to erosion, and the river is subject to the formation of sandbars. These factors have had a significant effect in changing the river channel cross sections during large floods.</p> <p>The largest recorded flood along the Santa Clara River occurred on January 25, 1969. The maximum discharge was 165,000 cubic feet per second (cfs), which is approximately equivalent to a 2-percent-annual-chance flood at Montalvo. The January flood was followed by the second largest recorded flood along the Santa Clara River on February 25, 1969.</p> <p>The peak discharge of the February flood was 152,000 cfs. Damage from the Santa Clara River during the 1969 floods totaled more than \$23 million, which included damage to private property as well as roads, bridges, railroads, and flood control and sanitation facilities. Major highway bridges partially destroyed or damaged were the Willard Bridge over the Santa Clara River in Santa Paula and the State Highway 118 Bridge crossing the river at Saticoy.</p> <p>Numerous railroad bridges were destroyed or damaged by floodflows. State Highway 126 was damaged at various locations, and the USACE levee near Saticoy was severely damaged.</p> <p>Twelve lives were lost by drowning as a result of the January flood. In the City of San Buenaventura, the river overtopped its banks to the north and flooded agricultural land, severely damaging a golf course, the Ventura Marina, and the sewage treatment plant. Total damage to the marina and sewage treatment plant was estimated to be \$4 million (Ventura County Flood Control District, September 1969).</p> <p>Other recent floods on the Santa Clara River occurred in 1938, January 1969, February 1969, 1978, 1983, and 1992. The 1938 flood was the largest recorded flood on the Santa Clara River prior to the 1969 floods. This flood had an estimated peak flow of 120,000 cfs and a recurrence interval, based on current runoff conditions, of approximately 20 years.</p>

Table 6: Principal Flood Problems, continued

Flooding Source	Description of Flood Problems
<p>Santa Clara River (continued)</p>	<p>It destroyed three spans of the State Highway 118 Bridge at Saticoy and washed out the Harbor Boulevard Bridge. The City of Fillmore was isolated by bridge failures cutting off highway travel in all directions. The flood severely disrupted electric, gas, telegraph, and telephone service. Many ranches experienced heavy damage to orchards located in the path of the flood. No other reliable estimates of flood damage are available for this flood event.</p> <p>Damaging floods on the Santa Clara River in the vicinity of the City of Fillmore are known to have occurred as early as 1862.</p> <p>The St. Francis Dam failure in March 1928 created the largest flood known to have occurred on the Santa Clara River. The dam was located in the San Francisquito Canyon in Los Angeles County; however, most of the damage occurred in Ventura County. Approximately 385 people were killed, 1,250 homes were destroyed, and all of the orchards on the Santa Clara River floodplain were washed away. The flood that resulted from the dam failure is classified as manmade; consequently, it is not considered representative of the type and severity of future natural floods.</p> <p>The 1943 flood caused severe damage to agricultural land, crops, and railroad tracks and bridges. In the City of Fillmore, it washed out the north approach to the Bardsdale Bridge. The west approach to the railroad bridge over Sespe Creek was washed out, and the west approach to the highway bridge over Sespe Creek was damaged. The estimated peak discharge on the Santa Clara River at Montalvo was 80,000 cfs, which is equivalent to a 13-year (7.9-percent-annual-chance) flood event based on current runoff conditions.</p> <p>The 1952 flood caused an estimated peak discharge on the Santa Clara River at Montalvo of between 40,000 and 50,000 cfs, which is approximately a 8-year (13-percent-annual-chance) event based on current runoff conditions. It was responsible for severe erosion damage to properties along the river.</p> <p>The March 1978 flood on the Santa Clara River at Montalvo had a peak discharge of 102,200 cfs, which is approximately a 15-year (5.9-percent-annual-chance) event based on current runoff conditions. The flood caused severe damage to roads, bridges, and agricultural land throughout the watershed. Sespe Creek in the City of Fillmore overtopped its banks to the east and severely damaged the western portion of the city.</p> <p>The January 1969 flood had a recurrence interval of approximately 45 years on Santa Clara River. The Santa Clara River inundated approximately 3,000 acres of orchards.</p> <p>The February 1969 flood interrupted transportation on all sides of the City of Fillmore and caused more damage due to the still-saturated soils from the previous flood. This flood had a recurrence interval of approximately 35 years on Santa Clara River. The Santa Clara River damaged the City of Fillmore sewage treatment plant and washed away 90 acres of orchards.</p>

Table 6: Principal Flood Problems, continued

Flooding Source	Description of Flood Problems
Santa Paula Creek	<p>Santa Paula Creek, which flows south along the eastern corporate limits of the City of Santa Paula and into the Santa Clara River, has the greatest flood potential. The city has experienced inundation from both Santa Paula Creek and the Santa Clara River. The worst floods occurred in 1914 and 1938. In both floods, a large portion of the city was inundated.</p> <p>The City of Santa Paula was seriously threatened on two occasions by Santa Paula Creek, requiring the evacuation of over 6,000 persons. The State Highway 150 Bridge over Santa Paula Creek was destroyed in the January 1969 flood.</p>
Sespe Creek	<p>Sespe Creek is the largest tributary to the Santa Clara River within the study area. The creek leaves the canyon area and, at a point approximately 1 mile north of the City of Fillmore, the present streambed alignment turns southwest, and the streambed splits into two major flowlines that widen, meander, and are not well defined. During severe storms, the flow is usually not contained within the streambed through this turn to the southwest. The water overtops the southeasterly bank and flows directly south through the western part of the City of Fillmore into the Santa Clara River. Excessive debris, in the form of brush, soil, and rock (including large boulders), is carried along with the flood.</p> <p>The January 1969 storm destroyed the railroad bridge over Sespe Creek. Both the Old Telegraph Road and State Highway 126 Bridges over Sespe Creek in Fillmore were also damaged.</p> <p>Damaging floods on Sespe Creek in the vicinity of the City of Fillmore are known to have occurred as early as 1862. A large flood was experienced in 1914. The largest natural flood of record on Sespe Creek occurred in January 2005. This flood had a recurrence interval of about 30 years.</p> <p>The January 1969 flood had a recurrence interval of approximately 15 years on Sespe Creek. Sespe Creek was diverted from its normal course and inundated its east overbank all the way to a north-south line adjacent to A Street, damaging the Southern Pacific Railroad Bridge.</p> <p>The February 1969 flood interrupted transportation on all sides of the City of Fillmore and caused more damage due to the still-saturated soils from the previous flood. This flood had a recurrence interval of approximately 10 years on Sespe Creek. Sespe Creek broke through its east bank again.</p>
Sinaloa Dam	<p>In the Calleguas Creek watershed, which includes the City of Simi Valley, the highest peak flows ever recorded occurred on March 1, 1983.</p> <p>Sinaloa Dam in the Sycamore Canyon drainage became saturated and showed signs of sloughing. About 1,400 people living in 500 homes located below the dam were evacuated by the City of Simi Valley (County of Ventura, 1983).</p>
South Branch Arroyo Conejo	<p>Portions of the South Branch Arroyo Conejo Channel are concrete-lined; and some portions are improved earth with dikes, with a slope range between 0.13 foot to 2.2 feet per 100 feet. The unlined portion of the channel is inadequate in size to convey the 1-percent-annual-chance frequency peak discharge, resulting in flooding.</p>

Table 6: Principal Flood Problems, continued

Flooding Source	Description of Flood Problems
Ventura River	<p>Future 1-percent-annual-chance flooding from the Ventura River will occur in an area west of the Ojai Freeway (State Highway 33) between Shell Road and Canada de San Joaquin, a small tributary just south of Shell Road. Flooding is caused by a constriction in the river at the Shell Road Bridge that forces water to the east under the Ojai Freeway and then south. The 1-percent-annual-chance breakout is contained at Canada de San Joaquin by a stoplog dike. This dike has been certified by the VCWPD. The dike is not sufficient, though, to contain the 0.2-percent-annual-chance breakout, which will continue flowing southerly through the western part of the city.</p> <p>The largest recorded flood on the Ventura River occurred in February 1978. The peak discharge reached 63,600 cfs at the gauging station just downstream from the confluence with Coyote Creek. This is equivalent to a recurrence interval of approximately 70 years.</p> <p>The 1938 flood caused an estimated \$1.3 million in damage to homes, businesses, agricultural land, transportation facilities, and utilities in the Ventura River area. In the City of San Buenaventura, residents were evacuated from their homes as floodwaters flowed through the west end of the city. Live Oak Acres was also heavily damaged along with the Foster Park diversion works and oil field equipment north of the City of San Buenaventura.</p> <p>The 1943 flood threatened the west end of the City of San Buenaventura. The flows did not, however, overtop the channel banks and evacuation was not required. People were evacuated from their homes in Live Oak Acres, and rail and highway traffic were disrupted when landslides and washouts blocked transportation arteries.</p> <p>Flood damage was estimated in excess of \$16 million in the Ventura River watershed during the January and February 1969 floods. Major watercourses throughout the watershed were severely eroded or aggraded, depending on streambed slopes. Debris and boulders carried by flood flows from the mountains surrounding the Ojai Valley resulted in reduced channel capacities and bank overflow through orchards and residential areas.</p> <p>The 1978 flood caused extensive damage to roads, bridges, sewer systems, agricultural property, and flood-control facilities in the upper Ventura River watershed. Traffic was disrupted by extensive road damage that occurred throughout the basin. Flood channels filled with debris and changed their course. Damage to residential property was especially severe in Casitas Springs, Live Oak Acres, and Hawthorne Acres.</p>

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

Table 7: Historic Flooding Elevations

Flooding Source	Location	Historic Peak Discharge (cfs)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Arroyo Simi	City of Moorpark	6,500	1969	*	Flood Insurance Study 2015
Arroyo Simi	City of Moorpark	8,600	1978	*	Flood Insurance Study 2015
Arroyo Simi	City of Moorpark	10,800	1983	*	Flood Insurance Study 2015
Arroyo Simi	City of Simi Valley	6,330	1969	*	Flood Insurance Study 2015
Arroyo Simi	City of Simi Valley	7,730	1978	*	Flood Insurance Study 2015
Arroyo Simi	City of Simi Valley	9,310	1980	*	Flood Insurance Study 2015
Arroyo Simi	City of Simi Valley	10,700	1983	30	Flood Insurance Study 2015
Arroyo Simi	City of Simi Valley	9,140	1992	*	Flood Insurance Study 2015
Arroyo Simi	City of Simi Valley	6,450	1995	*	Flood Insurance Study 2015
Arroyo Simi	City of Simi Valley	6,610	1998	*	Flood Insurance Study 2015
Calleguas Creek	Vicinity of California State University Channel Islands	16,340	1969	10	Flood Insurance Study 2015
Calleguas Creek	Vicinity of California State University Channel Islands	18,700	1978	15	Flood Insurance Study 2015

Table 7: Historic Flood Elevations, continued

Flooding Source	Location	Historic Peak Discharge (cfs)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Calleguas Creek	Vicinity of California State University Channel Islands	25,300	1980	25	Flood Insurance Study 2015
Calleguas Creek	Vicinity of California State University Channel Islands	25,900	1983	30	Flood Insurance Study 2015
Calleguas Creek	Vicinity of California State University Channel Islands	21,600	1998	20	Flood Insurance Study 2015
Calleguas Creek	Vicinity of California State University Channel Islands	19,700	2005	15	Flood Insurance Study 2015
Calleguas Creek	Above U.S. Highway 101 (Ventura Freeway)	11,820	1969	15	VCWPD Gage No. 806
Calleguas Creek	Above U.S. Highway 101 (Ventura Freeway)	9,970	1978	10	VCWPD Gage No. 806
Calleguas Creek	Above U.S. Highway 101 (Ventura Freeway)	13,400	1980	15	VCWPD Gage No. 806
Calleguas Creek	Above U.S. Highway 101 (Ventura Freeway)	17,200	1983	30	VCWPD Gage No. 806
Calleguas Creek	Above U.S. Highway 101 (Ventura Freeway)	12,560	1992	15	VCWPD Gage No. 806
Calleguas Creek	Downstream of U.S. Highway 101	14,570	1998	20	VCWPD Gage No. 806a
Calleguas Creek	Downstream of U.S. Highway 101	18,000	2005	35	VCWPD Gage No. 806a
Calleguas Creek	Downstream of U.S. Highway 101	8,675	2011	8	VCWPD Gage No. 806a
Conejo Creek	Above U.S. Highway 101	9,830	1978	10	VCWPD Gage No. 800
Conejo Creek	Above U.S. Highway 101	11,800	1980	15	VCWPD Gage No. 800
Conejo Creek	Above U.S. Highway 101	13,300	1983	20	VCWPD Gage No. 800

Table 7: Historic Flood Elevations, continued

Flooding Source	Location	Historic Peak Discharge (cfs)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Conejo Creek	Above U.S. Highway 101	9,950	1992	10	VCWPD Gage No. 800
Conejo Creek	Above U.S. Highway 101	9,820	1998	10	VCWPD Gage No. 800
San Antonio Creek	Downstream side of the State Highway 33 Bridge	16,200	Jan. 1969	20	USGS
San Antonio Creek	Downstream side of the State Highway 33 Bridge	11,500	Feb. 1969	10	USGS
San Antonio Creek	Downstream side of the State Highway 33 Bridge	13,900	1978	14	USGS
San Antonio Creek	Downstream side of the State Highway 33 Bridge	14,400	1995	20	USGS
San Antonio Creek	Downstream side of the State Highway 33 Bridge	13,100	1998	14	USGS
San Antonio Creek	Downstream side of the State Highway 33 Bridge	24,000	2005	40	USGS
Santa Clara River	City of Fillmore	24,000	1938	*	Flood Insurance Study 2015
Santa Clara River	City of Fillmore	68,000	Jan. 1969	45	Flood Insurance Study 2015
Santa Clara River	City of Fillmore	62,500	Feb. 1969	35	Flood Insurance Study 2015
Santa Clara River	City of Fillmore	22,800	1978	*	Flood Insurance Study 2015
Santa Clara River	City of Fillmore	30,600	1983	*	Flood Insurance Study 2015
Santa Clara River	City of Fillmore	17,100	1995	*	Flood Insurance Study 2015

Table 7: Historic Flood Elevations, continued

Flooding Source	Location	Historic Peak Discharge (cfs)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Santa Clara River	City of Fillmore	32,000	2005	15	Flood Insurance Study 2015
Santa Clara River	City of Fillmore	44,600	2006	*	Flood Insurance Study 2015
Sespe Creek	City of Fillmore	56,000	1938	*	Flood Insurance Study 2015
Sespe Creek	City of Fillmore	44,000	1943	*	Flood Insurance Study 2015
Sespe Creek	City of Fillmore	60,000	Jan. 1969	15	Flood Insurance Study 2015
Sespe Creek	City of Fillmore	45,000	Feb. 1969	10	Flood Insurance Study 2015
Sespe Creek	City of Fillmore	73,000	1978	*	Flood Insurance Study 2015
Sespe Creek	City of Fillmore	56,000	1983	*	Flood Insurance Study 2015
Sespe Creek	City of Fillmore	65,000	1995	*	Flood Insurance Study 2015
Sespe Creek	City of Fillmore	62,500	1998	*	Flood Insurance Study 2015
Sespe Creek	City of Fillmore	85,300	2005	30	Flood Insurance Study 2015
Sespe Creek	City of Fillmore	44,600	2006	*	Flood Insurance Study 2015
Ventura River	Just downstream of confluence with Coyote Creek	39,200	1938	25	Flood Insurance Study 2015

Table 7: Historic Flood Elevations, continued

Flooding Source	Location	Historic Peak Discharge (cfs)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Ventura River	Just downstream of confluence with Coyote Creek	58,000	Jan. 1969	60	Flood Insurance Study 2015
Ventura River	Just downstream of confluence with Coyote Creek	63,600	1978	70	Flood Insurance Study 2015
Ventura River	Just downstream of confluence with Coyote Creek	40,000	Feb. 1969	30	Flood Insurance Study 2015
Ventura River	Just downstream of confluence with Coyote Creek	45,800	1992	45	Flood Insurance Study 2015
Ventura River	Just downstream of confluence with Coyote Creek	43,700	1995	40	Flood Insurance Study 2015
Ventura River	Just downstream of confluence with Coyote Creek	41,000	2005	30	Flood Insurance Study 2015

*Data not available

4.3 Non-Levee Flood Protection Measures

Table 8 contains information about non-levee flood protection measures within Ventura County such as dams, jetties, and or dikes. 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
Arroyo Conejo	N/A	Conduit	From its confluence with North Drain to Greenwich Drive	Underground conduit
Arroyo Conejo	N/A	Conduit	Between Moorpark Freeway and Hillcrest Drive	Closed conduit with short segments of open channel
Arroyo Santa Rosa Tributary	N/A	Channel Improvements	N/A	Portions of channel are concrete-lined with capacities equal to or greater than the 1-percent-annual-chance flood.

Table 8: Non-Levee Protection Measures, continued

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Arroyo Simi	N/A	Channel Improvement	N/A	Trapezoidal earth channel with rip-rap and reinforced concrete along the tributaries with design capacities for 4- to 0.2-percent-annual-chance floods.
Arundell Barranca	N/A	Channel Improvement	From the Ventura Marian to East Main Street	Rectangular reinforced-concrete channel.
Brown Barranca	N/A	Channel Improvement	From Henderson Road to Blackburn Road	Concrete channel
Calleguas Creek	N/A	Channel Improvements	Various locations within the Cities of Simi Valley, Moorpark, and in the vicinity of the City of Camarillo	Channel improvements consisting of earth-bottoms, with concrete stabilizers, and rock-revetted side slopes
Calleguas Creek Tributaries	N/A	Channel	Various locations	Concrete-lined channel
Calleguas Creek Tributaries	N/A	Reservoir	Various locations	Storage reservoir
Camarillo Hills Drain	N/A	Channel Improvement	From Las Posas Road to the upstream limit of study	Reinforced-concrete channel
Camarillo Hills Drain	N/A	Channel Improvement	Between Rosewood Avenue and Carmen Drive	Channel widening
Camarillo Hills Drain	N/A	Channel Improvement	Confluence with Revolon slough to approximately 2,000 feet upstream	N/A
Conejo Creek Tributaries	N/A	Channel	Various locations	Concrete-lined channel

Table 8: Non-Levee Protection Measures, continued

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Coyote Creek	Casitas	Dam	Approximately 7 miles upstream of mouth on Coyote Creek	With a storage capacity of 250,000 acre-feet, it effectively controls runoff from an area of approximately 40 square miles.
Crestview Drain	N/A	Channel Improvements	All of Crestview Drain	Upper section has been improved with reinforced-concrete pipe and the lower section has been improved with a reinforced-concrete box conduit.
Doris Avenue Drain	N/A	Channel Improvement	N/A	Concrete-lined channel with conveyance capacity designed to be equal to or greater than the 1-percent annual chance floodflow.
Edgemore Drain	N/A	Channel Improvement	Confluence with Camarillo Hills Drain upstream to Las Posas Road	Reinforced-concrete trapezoidal channel
El Rio Drain	N/A	Channel Improvement	N/A	Concrete-lined channel with conveyance capacity designed to be equal to or greater than the 1-percent annual chance floodflow.
Fox Canyon Storm Drain	N/A	Channel Improvement	From Grand Avenue to approximately 250 feet downstream of the Ojai Valley Trail	The VCWPD has built a reinforced-concrete channel with existing freeboard that has the capacity to carry the 1-percent-annual-chance flood through this reach.
Fox Canyon Storm Drain	N/A	Cast Pipe	From Grand Avenue to Daly Road	72-inch cast-in-place pipe that could carry the 1-percent-annual-chance discharge.
Franklin Barranca	N/A	Channel Improvement	From its confluence with Santa Clara River to its confluence with Wasson Barranca	Trapezoidal, reinforced-concrete channel.

Table 8: Non-Levee Protection Measures, continued

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Franklin Barranca	N/A	Channel Improvement	From its confluence with Wasson Barranca to Santa Paula Freeway	Rectangular, reinforced-concrete channel
Gabbert Canyon Creek	N/A	Channel Improvement	N/A	Concrete-lined channel
Gabbert Canyon Creek	N/A	Debris Basin	N/A	Debris basin constructed to reduce the downstream transport of debris.
Happy Valley Drain	N/A	Channel Improvement	N/A	Portion of channel is concrete-lined with capacities equal to or greater than the 1-percent-annual-chance flood.
J Street Drain	N/A	Channel Improvement	N/A	Concrete-lined channel with conveyance capacity designed to be equal to or greater than the 1-percent annual chance floodflow.
Lake Casitas	N/A	Dam	On Lake Casitas near the intersection of Haley Ranch Road and Santa Ana Road	N/A
Lang Creek	N/A	Channel Improvement	From its confluence with Arroyo Conejo to El Monte Drive	Concrete lined channel and underground conduits.
Las Posas Estates Drain	N/A	Channel Improvement	From U.S. Highway 101 to Central Avenue	Reinforced-concrete trapezoidal channel
Las Posas Estates Drain	N/A	Debris Basin	N/A	Debris basin constructed to reduce the downstream transport of debris.
Lewis Road Drain	N/A	Channel Improvements	N/A	Improved channel that has an expected 1-percent-annual chance flood-carrying capacity.

Table 8: Non-Levee Protection Measures, continued

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Mission Hills Drain	N/A	Channel Improvements	Confluence with Camarillo Hills Drain to approximately 2,025 feet upstream of Rocklyn Street	Reinforced-concrete-lined trapezoidal channel
Moon Ditch	N/A	Channel Improvement	From the Santa Clara River to U.S. Highway 101	Trapezoidal, reinforced-concrete-lined channel
North Drain Creek	N/A	Channel Improvement	Almost all of study limit	Concrete lined channel
North Fork Arroyo Conejo	N/A	Channel Improvement	N/A	Improved channel with little of no floodplain.
North Simi Drain	N/A	Dam	Approximately 2,630 feet upstream of Ronald Reagan Freeway on North Simi Drain	N/A
Oxnard Industrial Drain	N/A	Channel Improvement	South of Oxnard Boulevard	Concrete-lined channel with conveyance capacity designed to be equal to or greater than the 1-percent annual chance floodflow.
Pacific Ocean	N/A	Seawalls and Revetments	Various locations along Ventura County coastline	Over 25 miles of seawalls and revetments have been constructed to halt erosion and to absorb the impact of wave forces.
Pacific Ocean	N/A	Groin Fields	Various locations along Ventura County coastline	Eleven groins have been constructed to serve a number of purposes including flood protection (Martha J. Shaw, 1980; USACE, 1971).
Pacific Ocean	N/A	Breakwaters	Various locations along Ventura county coastline	Three breakwaters have been constructed to serve a number of purposes including flood protection (Martha J. Shaw, 1980; USACE, 1971).

Table 8: Non-Levee Protection Measures, continued

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Pacific Ocean	N/A	Jetties	Various locations along Ventura County coastline	Seven jetties have been constructed to serve a number of purposes including flood protection (Martha J. Shaw, 1980; USACE, 1971).
Pacific Ocean	N/A	Seawall	City of Port Hueneme	Constructed by the U.S. Navy to protect the property from flooding.
Pacific Ocean	N/A	Groin Field and Revetments	Point Mugu U.S. Naval Air Missile Test Grounds	Constructed by the U.S. Navy to protect the military and recreational facilities (USACE, 1980).
Ponderosa Drain	N/A	Channel Improvements	Confluence with Camarillo Hills Drain to its upstream study limit	Combination of reinforced-concrete trapezoidal channel and a length of reinforced-concrete box.
Potrero Valley Creek	N/A	Dam	Lake Eleanor	Flow controlled by dam. No flooding has occurred since construction.
Potrero Valley Creek	N/A	Dam	Lake Sherwood	Flow controlled by dam. No flooding has occurred since construction.
Real Canyon Wash	N/A	Channel Improvement	N/A	Portion of channel is concrete-lined with capacities equal to or greater than the 1-percent-annual-chance flood.
Real Canyon Wash	N/A	Debris Basin	N/A	Debris basin constructed to reduce the downstream transport of debris.
Revolon Slough	N/A	Channel Improvement	N/A	Portion of channel is concrete-lined with capacities equal to or greater than the 1-percent-annual-chance flood.
Rice Avenue Drain	N/A	Channel Improvement	N/A	Concrete-lined channel with conveyance capacity designed to be equal to or greater than the 1-percent annual chance floodflow.
Santa Clara River	Bouquet	Dam	Bouquet Canyon	N/A

Table 8: Non-Levee Protection Measures, continued

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Santa Clara River	Castaic	Dam	Castaic Creek	N/A
Santa Clara River	Freeman Diversion Structure	Control Structure	At confluence with Todd Barranca	N/A
Santa Clara River	Pyramid	Dam	Piru Creek	Controls 293 square miles of the 422-square-mile watershed above Santa Felicia Dam
Santa Clara River	Santa Felicia	Dam	Piru Creek	Controls 129 square miles of the 422 square-mile-watershed
Santa Clara River Tributaries	N/A	Reservoir	Various locations	Storage reservoir
Somis Drain	N/A	Channel Improvement	Entire length of Somis Drain	Reinforced-concrete trapezoidal channel
South Branch Arroyo Conejo	N/A	Channel Improvement	From Ventu Park Road to the Ventura Freeway Culvert and between Jenny Drive and Briar Road	Concrete-lined channel with variances in slope
South Branch Arroyo Conejo	N/A	Channel Improvement	From the Ventura Freeway culvert to Michael and Virginia Drives	Improved earth channel with dikes
Stewart Canyon Creek	N/A	Channel Improvement	From spillway of the debris basin to approximately 200 feet downstream of the Southern Pacific Railroad crossing	USACE built a reinforced-concrete-lined channel to contain the 1- and 0.2-percent-annual-chance floods.
Stewart Canyon Creek	N/A	Debris Basin	Mouth of Stewart Canyon Creek	Debris basin constructed to reduce the downstream transport of debris. The debris basin also contains and regulates the outflow for both the 1- and 0.2-percent-annual-chance floods.

Table 8: Non-Levee Protection Measures, continued

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Sycamore Canyon	Sycamore Canyon	Dam	Approximately 300 feet upstream of Irvine Road	N/A
Telephone Road Drain	N/A	Channel Improvements	From its confluence with Arundell Barranca to the upstream limit of study	Channel has been improved to contain the 1-percent-annual-chance flood.
Ventura River	Las Robles	Dam	Approximately 3,600 feet upstream of confluence with Cozy Del Canyon	Diversion dam
Ventura River	Matilija	Dam	Approximately 16.2 miles upstream of mouth	Controls approximately 55 square miles and has a storage capacity of 2,000 acre-feet
Ventura River Tributaries	N/A	Reservoir	Various locations	Storage reservoir
Waning Canyon Wash	N/A	Debris Basin	N/A	Debris basin constructed to reduce the downstream transport of debris.
West Camarillo Hills Drain	N/A	Channel Improvements	Confluence with Camarillo Hills Drain upstream to Las Posas Road	Reinforced-concrete trapezoidal channel
West Wooley Drain	N/A	Channel Improvement	N/A	Concrete-lined channel with conveyance capacity designed to be equal to or greater than the 1-percent annual chance floodflow.

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 Ventura 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 31.

Table 9: Levees

Community	Flooding Source	Levee Location	Levee Owner	USACE Levee	Levee ID	Covered Under PL84-99 Program?	FIRM Panel(s)
Camarillo, City of	Adams Barranca	Left Bank	*	*	06111C_14	*	06111C0929F
Camarillo, City of	Calleguas Creek	Right Bank	Ventura County Watershed Protection District	No	119	No	06111C0932F 06111C0934E
Camarillo, City of	Calleguas Creek	Right Bank	Ventura County Watershed Protection District	No	120	No	06111C0932F
Camarillo, City of; Ventura County, Unincorporated Areas	Camarillo Hills Drain	Left Bank	*	*	06111C_4	*	06111C0928E
Camarillo, City of; Ventura County, Unincorporated Areas	Camarillo Hills Drain	Right Bank	*	*	06111C_4	*	06111C0928E
Camarillo, City of	Conejo Creek	Right Bank	*	*	06111C_67	*	06111C0951E 06111C0953E
Fillmore, City of	Santa Clara River	Right Bank	*	*	106	*	06111C0643E
Fillmore, City of	Santa Clara River	Right Bank	*	*	114	*	06111C0643E
Fillmore, City of	Sespe Creek	Left Bank	Ventura County Watershed Protection District	Yes	18	Yes	06111C0641E 06111C0643E
Moorpark, City of	Arroyo Simi	Right Bank	Ventura County Watershed Protection District	*	06111C_42	*	06111C0836E 06111C0838E

Table 9: Levees, continued

Community	Flooding Source	Levee Location	Levee Owner	USACE Levee	Levee ID	Covered Under PL84-99 Program?	FIRM Panel(s)
Moorpark, City of	Arroyo Simi	Left Bank	*	*	06111C_34	*	06111C0819E 06111C0836E 06111C0838E
Moorpark, City of	Arroyo Simi	Right Bank	*	*	06111C_41		06111C0837E
Moorpark, City of	Arroyo Simi	Right Bank	*	*	06111C_39	*	06111C0819E 06111C0838E
Moorpark, City of	Calleguas Creek	*	City of Moorpark	No	126	No	*
Oxnard, City of; Ventura County, Unincorporated Areas	Santa Clara River	Left Bank	Ventura County Watershed Protection District	No	86	No	06111C0770E 06111C0790E 06111C0901F 06111C0902F 06111C0910E
San Buenaventura, City of	Santa Clara River	Right Bank	Ventura County Watershed Protection District	No	06111C_45	No	06111C0770E
San Buenaventura, City of	Santa Clara River	Right Bank	Ventura County Watershed Protection District	No	*	No	06111C0882F
San Buenaventura, City of; Ventura County, Unincorporated Areas	Ventura River	Left Bank	Ventura County Watershed Protection District	Yes	53	Yes	06111C0741F 06111C0743F
San Buenaventura, City of; Ventura County, Unincorporated Areas	Ventura River	Left Bank	*	*	06111C_23	*	06111C0568E 06111C0731E

Table 9: Levees, continued

Community	Flooding Source	Levee Location	Levee Owner	USACE Levee	Levee ID	Covered Under PL84-99 Program?	FIRM Panel(s)
Santa Paula, City of; Ventura County, Unincorporated Areas	Santa Paula Creek	Left Bank	Ventura County Watershed Protection District	Yes	105	Yes	06111C0781E
Simi Valley, City of	Arroyo Simi	Right Bank	Ventura County Watershed Protection District	No	107	No	06111C0864E 06111C0868E
Simi Valley, City of	Arroyo Simi	Left Bank	Ventura County Watershed Protection District	No	108	No	06111C0844E
Simi Valley, City of	Arroyo Simi	Left Bank	Ventura County Watershed Protection District	No	112	No	06111C0864E 06111C0868E
Ventura County, Unincorporated Areas	Arroyo Santa Rosa	Left Bank	*	*	06111C_7	*	06111C0957E
Ventura County, Unincorporated Areas	Calleguas Creek	Left Bank	*	*	06111C_9	*	06111C0937E 06111C0939E 06111C0941E 06111C1102F
Ventura County, Unincorporated Areas	Calleguas Creek	Right Bank	*	*	06111C_66	*	06111C0939E 06111C1102F
Ventura County, Unincorporated Areas	Revolon Slough	Right Bank	Ventura County Watershed Protection District	No	116	No	06111C0936E 06111C0937E 06111C0939E
Ventura County, Unincorporated Areas	Revolon Slough	Left Bank	*	*	06111C_35	*	06111C0936E 06111C0937E 06111C0939E

Table 9: Levees, continued

Community	Flooding Source	Levee Location	Levee Owner	USACE Levee	Levee ID	Covered Under PL84-99 Program?	FIRM Panel(s)
Ventura County, Unincorporated Areas	Revolon Slough	Left Bank	Ventura County Watershed Protection District	No	117	No	06111C0928E 06111C0936E
Ventura County, Unincorporated Areas	Revolon Slough	Right Bank	Ventura County Watershed Protection District	No	118	No	06111C0928E 06111C0936E
Ventura County, Unincorporated Areas	Revolon Slough	Right Bank	*	*	06111C_21	*	06111C0939E
Ventura County, Unincorporated Areas	Revolon Slough	Left Bank	*	*	06111C_31	*	06111C0939E
Ventura County, Unincorporated Areas	Santa Clara River	Left Bank	Ventura County Watershed Protection District	Yes	18	Yes	06111C0770E 06111C0790E 06111C0910E
Ventura County, Unincorporated Areas	Santa Clara River	Left Bank	*	*	06111C_53	*	06111C0640E 06111C0805E
Ventura County, Unincorporated Areas	Santa Paula Creek	Right Bank	Ventura County Watershed Protection District	Yes	113	Yes	06111C0781E
Ventura County, Unincorporated Areas	Sespe Creek	Left Bank	Ventura County Watershed Protection District	Yes	101	Yes	06111C0640E 06111C0643E
Ventura County, Unincorporated Areas	South Grimes Canyon Wash	Right Bank	Ventura County Watershed Protection District	No	79	No	06111C0643E 06111C0810E
Ventura County, Unincorporated Areas	South Grimes Canyon Wash	Left Bank	Ventura County Watershed Protection District	No	80	No	06111C0643E 06111C0810E

Table 9: Levees, continued

Community	Flooding Source	Levee Location	Levee Owner	USACE Levee	Levee ID	Covered Under PL84-99 Program?	FIRM Panel(s)
Ventura County, Unincorporated Areas	Ventura River	Right Bank	Ventura County Watershed Protection District	No	103	No	06111C0566E 06111C0568E

*Data not available