LOCATION HYDRAULIC STUDY FORM[1]

DIST-CO-RTE: 12-ORA-074 **PM/PM:** 0.0/11.5
EA/Project No.: 12-0R990 **Bridge No.:** N/A
Floodplain Description: The project is within the San Juan Creek Watershed. The project falls mostly within mapped Zone X (areas determined to be outside the 0.2% annual chance floodplain). Within the project limits, there are some segments of the SR-74 roadway that are located within the mapped Zone A (special flood hazard areas subject to inundation by the 1% annual chance flood). Also, at PM 2.3 the roadway is located within the mapped Zone AE (floodway areas in Zone AE). However, the proposed work at these locations and throughout the project limits do not impact the floodplain, nor the floodway. The applicable FEMA map numbers for the project are 06059C0443J, 06059C0444J, 06059C0465J, 06059C0470J, , 06059C0460J, and 06059C0500J (see below).

1. Description of Proposal: See below for Project Description.

2. Current ADT: 46,600 at San Juan Capistrano, Jct. Rte-5 Projected ADT: N/A
   Current ADT: 10,300 at Lucas Canyon Road Projected ADT: N/A

3. Hydraulic Data: Base Flood Q_{100}= 30,000 CFS at the City of San Juan Capistrano corporate limits (City of San Juan Capistrano/Orange County Line)
   WSE_{100}= 145 feet The flood of record, if greater than Q_{100}: N/A
   Q= N/A CFS WSE= N/A
   Overtopping flood Q= N/A CFS WSE= N/A
   Are NFIP maps available? ☒ YES ☐ NO
   Are NFIP studies available? ☒ YES ☐ NO

4. Is the highway location alternative within a regulatory floodway? ☐ YES ☒ NO

5. Attach map with flood limits outlined showing all buildings or other improvements within the base floodplain.

   Potential Q_{100} backwater damages:
   A. Residences? ☐ YES ☒ NO
   B. Other Bldgs? ☐ YES ☒ NO
   C. Crops? ☐ YES ☒ NO
   D. Natural and beneficial floodplain values? ☐ YES ☒ NO

[1] Form adapted from Figure 804.7A Technical Information for Location Hydraulic Study located in Chapter 804 of the Highway Design Manual.

6. Type of Traffic:

A. Emergency supply or evacuation route?	☒ YES	☐ NO
B. Emergency vehicle access?	☒ YES	☐ NO
C. Practicable detour available?	☒ YES	☐ NO
D. School bus or mail route?	☒ YES	☐ NO

7. Estimated duration of traffic interruption for 100-year event N/A hours.

8. Estimated value of Q_{100} flood damages (if any) – moderate risk level.

A. Roadway
B. Property
Total

9. Assessment of Level of Risk ☒ Low ☐ Moderate ☐ High

For High Risk projects, during design phase, additional Design Study Risk Analysis may be necessary to determine design alternative.

PREPARED BY:

Phi Dinh — 05/06/2025

Signature- Dist. Hydraulic Engineer (Item numbers 3,4,5,7,9) — Date

Is there any longitudinal encroachment, significant encroachment, or any support of incompatible Floodplain development? ☐ YES ☒ NO

If yes, provide evaluation and discussion of practicability of alternatives in accordance with 23 CFR 650.113.

Information developed to comply with the Federal requirement for the Location Hydraulic Study shall be retained in the project files.

05/06/2025

Signature- Dist. Project Engineer (Item numbers 1,2,6,8) — Date

SUMMARY FLOODPLAIN ENCROACHMENT REPORT[1]

DIST-CO-RTE: 12-ORA-074 **PM/PM:** 0.0/11.5
EA/Project No.: 12-0R990 **Bridge No.:** N/A
Limits: This project is located along State Route 74 (SR-74) from SR-74/ Interstate 5 (I-5) Separation (PM 0.0) to 1.0-mile East of San Juan Creek (PM 11.5), in Orange County, including the city of San Juan Capistrano and the county unincorporated area.
Floodplain Description: The project is within the San Juan Creek Watershed. The project falls mostly within mapped Zone X (areas determined to be outside the 0.2% annual chance floodplain). Within the project limits, there are some segments of the SR-74 roadway that are located within the mapped Zone A (special flood hazard areas subject to inundation by the 1% annual chance flood). Also, at PM 2.3 the roadway is located within the mapped Zone AE (floodway areas in Zone AE). However, the proposed work at these locations and throughout the project limits do not impact the floodplain, nor the floodway. The applicable FEMA map numbers for the project are 06059C0443J, 06059C0444J, 06059C0465J, 06059C0470J, 06059C0460J, and 06059C0500J (see below).

Question	Yes	No
1. Is the proposed action a longitudinal encroachment of the base floodplain?	☐	☒
2. Are the risks associated with the implementation of the proposed action significant?	☐	☒
3. Will the proposed action support probable incompatible floodplain development?	☐	☒
4. Are there any significant impacts on natural and beneficial floodplain values?	☐	☒
5. Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.	☐	☒
6. Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q)?	☐	☒
7. Are Location Hydraulic Studies that document the above answers on file? If not explain.	☒	☐

PREPARED BY:

Phi Dinh — 05/06/2025
Signature- Dist. Hydraulic Engineer — Date

Smita Deshpande — 5/6/25
Signature- Dist. Environmental Branch Chief — Date

[1] Form adapted from Figure 804.7B Floodplain Evaluation Report Summary located in Chapter 804 of the Highway Design Manual.

	05/06/2025
Signature- Dist. Project Engineer	Date

Project Description

This multi-asset management project is located along State Route 74 (SR-74) from SR-74/ Interstate 5 (I-5) Separation (PM 0.0) to 1.0-mile East of San Juan Creek (PM 11.5), in Orange County, including the city of San Juan Capistrano and the county unincorporated area. The project proposes to address a range of improvements, including roadway, traffic safety devices, complete street elements, and drainage systems.

This Multi-Assets Management project is Federal/State funded through the 2024 SHOPP, under the Pavement Preservation Program (Program Code 201.121) and is expected to be delivered in the 2026/2027 Fiscal Year.

Table 1- Project Information

Project Limits	12-Ora-074 PM 0.0/11.5	
Number of Alternatives	Two (2)	
	Current Cost Estimate: ($1000)	**Escalated Cost Estimate: ($1000)**
Capital Outlay Support	$9,980	$9,980
Capital Outlay Construction	$20,789	$24,387
Capital Outlay Right-of-Way	$1,050	$1,050
Funding Source	Pavement Preservation - 201.121 SHOPP 2024– Multi-Assets Management	
Funding Year	2026/2027	
Type of Facility	2/5-lanes conventional highway	
Number of Structures	None	
SHOPP Project Output	Pavement-Pavement Preservation Pre-condition: 23.0 Lane-Miles Post-condition: 23.0 Lane-Miles	
Environmental Determination or Document	Initial Study with Mitigated Negative Declaration (IS.MND)/Categorical Exclusion (CE)	
Legal Description	In the County of Orange, on Route 74 from SR-74/I-5 Separation (PM 0.0) to 1.0-mile East of San Juan Creek (PM 11.5), including the city of San Juan Capistrano and the county unincorporated area.	
Project Development Category	*See PDPM Chapter 8, Section 5*	

FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 3

ORANGE COUNTY, CALIFORNIA

AND INCORPORATED AREAS

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
ALISO VIEJO, CITY OF	060770	LAKE FOREST, CITY OF	060759
ANAHEIM, CITY OF	060213	LOS ALAMITOS, CITY OF	060226
BREA, CITY OF	060214	MISSION VIEJO, CITY OF	060735
BUENA PARK, CITY OF	060215	NEWPORT BEACH, CITY OF	060227
COSTA MESA, CITY OF	060216	ORANGE, CITY OF	060228
CYPRESS, CITY OF	060217	ORANGE COUNTY (UNINCORPORATED AREAS)	060212
DANA POINT, CITY OF	060736	PLACENTIA, CITY OF	060229
FOUNTAIN VALLEY, CITY OF	060218	RANCHO SANTA MARGARITA, CITY OF	060769
FULLERTON, CITY OF	060219	SAN CLEMENTE, CITY OF	060230
GARDEN GROVE, CITY OF	060220	SAN JUAN CAPISTRANO, CITY OF	060231
HUNTINGTON BEACH, CITY OF	065034	SANTA ANA, CITY OF	060232
IRVINE, CITY OF	060222	SEAL BEACH, CITY OF	060233
LA HABRA, CITY OF	060224	STANTON, CITY OF	060234
LA PALMA, CITY OF[1]	060225	TUSTIN, CITY OF	060235
LAGUNA BEACH, CITY OF	060223	VILLA PARK, CITY OF	060236
LAGUNA HILLS, CITY OF	060760	WESTMINSTER, CITY OF	060237
LAGUNA NIGUEL, CITY OF	060764	YORBA LINDA, CITY OF	060238
LAGUNA WOODS, CITY OF	060768		

[1]No Special Flood Hazard Areas Identified

REVISED:

MARCH 21, 2019

FLOOD INSURANCE STUDY NUMBER
06059CV001C

Version Number 2.3.3.1

FEMA

TABLE OF CONTENTS
Volume 1

Figures

Page

Tables

Page

Volume 2
Exhibits

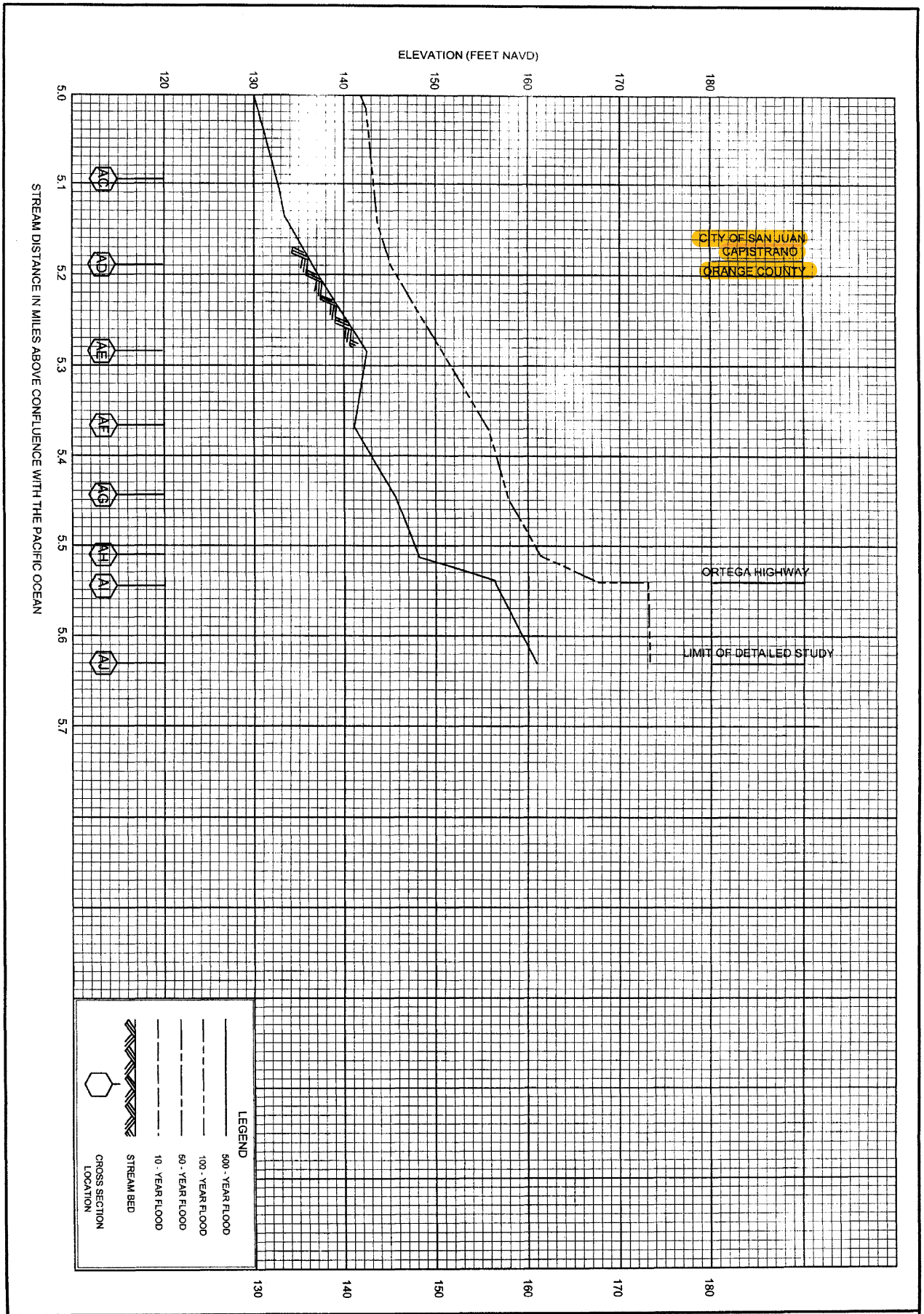
Volume 3

Exhibits

Published Separately

Flood Insurance Rate Map (FIRM)

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)			
			10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
San Joaquin Channel	Approximately 3,600 feet upstream of San Diego Freeway	1.2	360	810	1,250	2,300
San Juan Creek	At the City of San Juan Capistrano corporate limits	173.7	8,200	30,000	42,000	80,000
San Juan Creek	Downstream of confluence of Trabuco Creek	171.1	8,000	29,000	41,000	79,000
San Juan Creek	At confluence of Horno Creek	116.8	6,200	22,000	32,000	60,000
San Juan Creek	At the City of San Juan Capistrano corporate limits	108.5	6,000	21,000	30,000	56,000
Santa Ana-Delhi Channel	Upstream of confluence with Santa Ana Gardens Channel	4.2	580	1,100	1,500	3,200
Santa Ana-Delhi Channel	At Flower Street	3.5	540	1,000	1,400	3,000
Santa Ana-Delhi Channel	At Southern Pacific Railroad	2.9	470	880	1,200	2,600
Santa Ana-Delhi Channel	At Warner Avenue	1.1	220	400	550	1,200
Santa Ana Gardens Channel	At Sunflower Avenue	5.7	560	1,100	1,400	3,100
Santa Ana Gardens Channel	At Alton Avenue	5.3	540	1,000	1,400	3,000


ELEVATION (FEET NAVD)
120
130
140
150
160
170
180
STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH THE PACIFIC OCEAN
5.0
5.1
5.2
5.3
5.4
5.5
5.6
5.7
AC
AD
AE
AF
AG
AH
AI
AJ
CITY OF SAN JUAN CAPISTRANO
ORANGE COUNTY
ORTEGA HIGHWAY
LIMIT OF DETAILED STUDY
LEGEND
500 - YEAR FLOOD
100 - YEAR FLOOD
50 - YEAR FLOOD
10 - YEAR FLOOD
STREAM BED
CROSS SECTION LOCATION

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

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

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

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

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #8202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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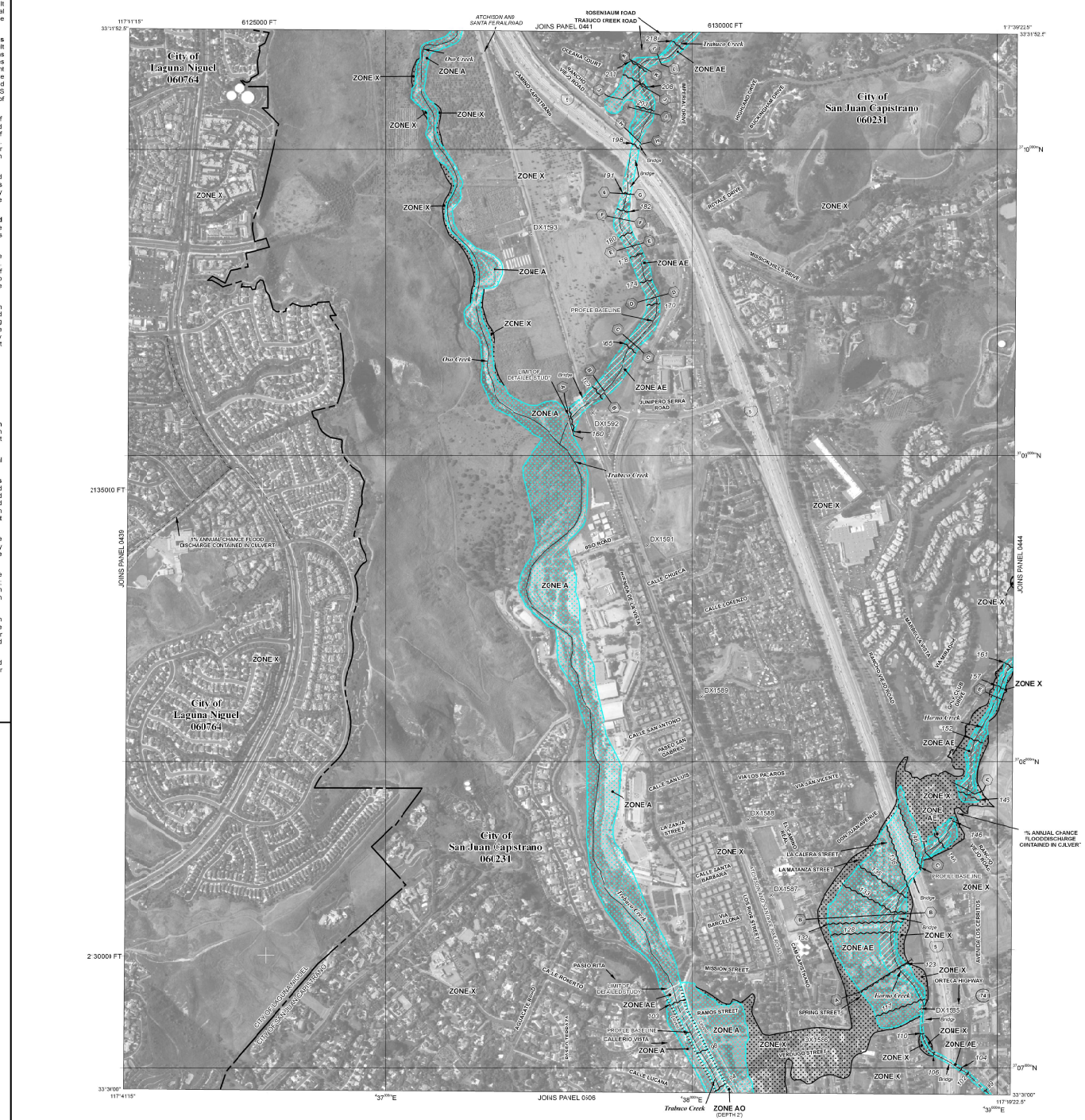

LEGEND

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

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

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

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

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

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- D — D — Transect line
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4376000mN — 1000-meter Universal Transverse Mercator grid values, zone NAD 1983 UTM Zone 11N
- 600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone VI (FIPSZONE 0406), Lambert Conformal Conic projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 15, 1986

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 5, 1982 - November 3, 1993 - January 3, 1997 - February 15, 2004 - December 3, 2009 ; for description of revisions, see Notice to Users page in the Flood Insurance Study report.

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

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

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0443J

FIRM
FLOOD INSURANCE RATE MAP

ORANGE COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 443 OF 539

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LAGUNA NIGUEL, CITY OF	060764	0443	J
SAN JUAN CAPISTRANO, CITY OF	060231	0443	J

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

MAP NUMBER
06059C0443J

MAP REVISED
DECEMBER 3, 2009

Federal Emergency Management Agency

NOTES TO USERS

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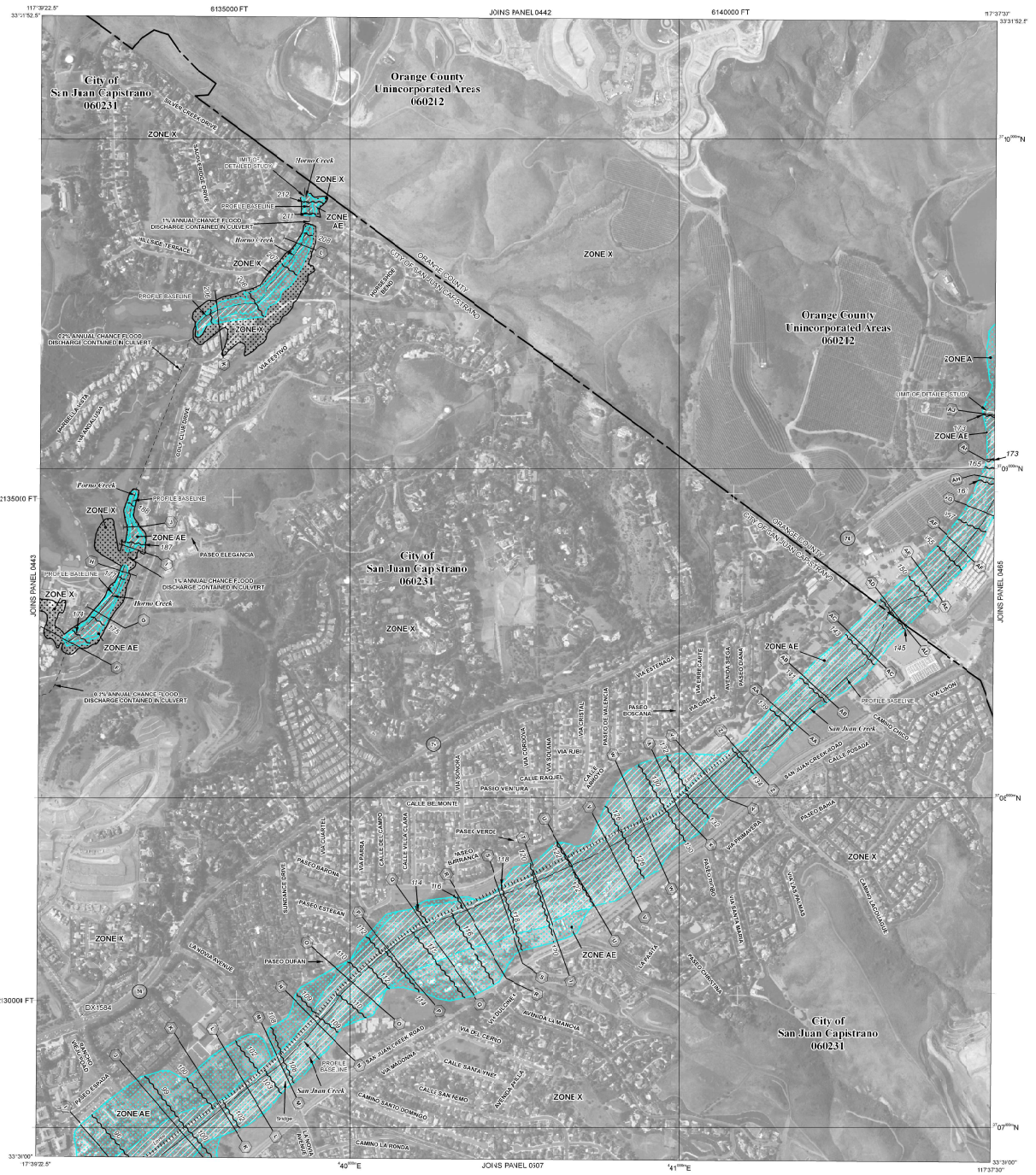

LEGEND

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1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513 (EL 987) Base Flood Elevation line and value; elevation in feet*

Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A ——— A Cross section line

D ——— D Transect line

87°07'45", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

4376000mN 1000-meter Universal Transverse Mercator grid values, zone NAD 1983 UTM Zone 11N

600000 FT 5000-foot grid ticks: California State Plane coordinate system, zone VI (FIPSZONE 0406), Lambert Conformal Conic projection

DX5510 × Bench mark (see explanation in Notes to Users section of this FIRM panel)

●M1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 15, 1986

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 5, 1982 - November 3, 1993 - January 3, 1997 - February 15, 2004 - December 3, 2009 : for description of revisions, see Notice to Users page in the Flood Insurance Study report.

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

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

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0444J

FIRM

FLOOD INSURANCE RATE MAP

ORANGE COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 444 OF 539

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ORANGE COUNTY	060212	0444	J
SAN JUAN CAPISTRANO, CITY OF	060231	0444	J

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

MAP NUMBER 06059C0444J

MAP REVISED DECEMBER 3, 2009

Federal Emergency Management Agency

NOTES TO USERS

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

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

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

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3, #1202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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

Base map information shown on this FIRM was derived from the National Agriculture Imagery Program, dated 2005.

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

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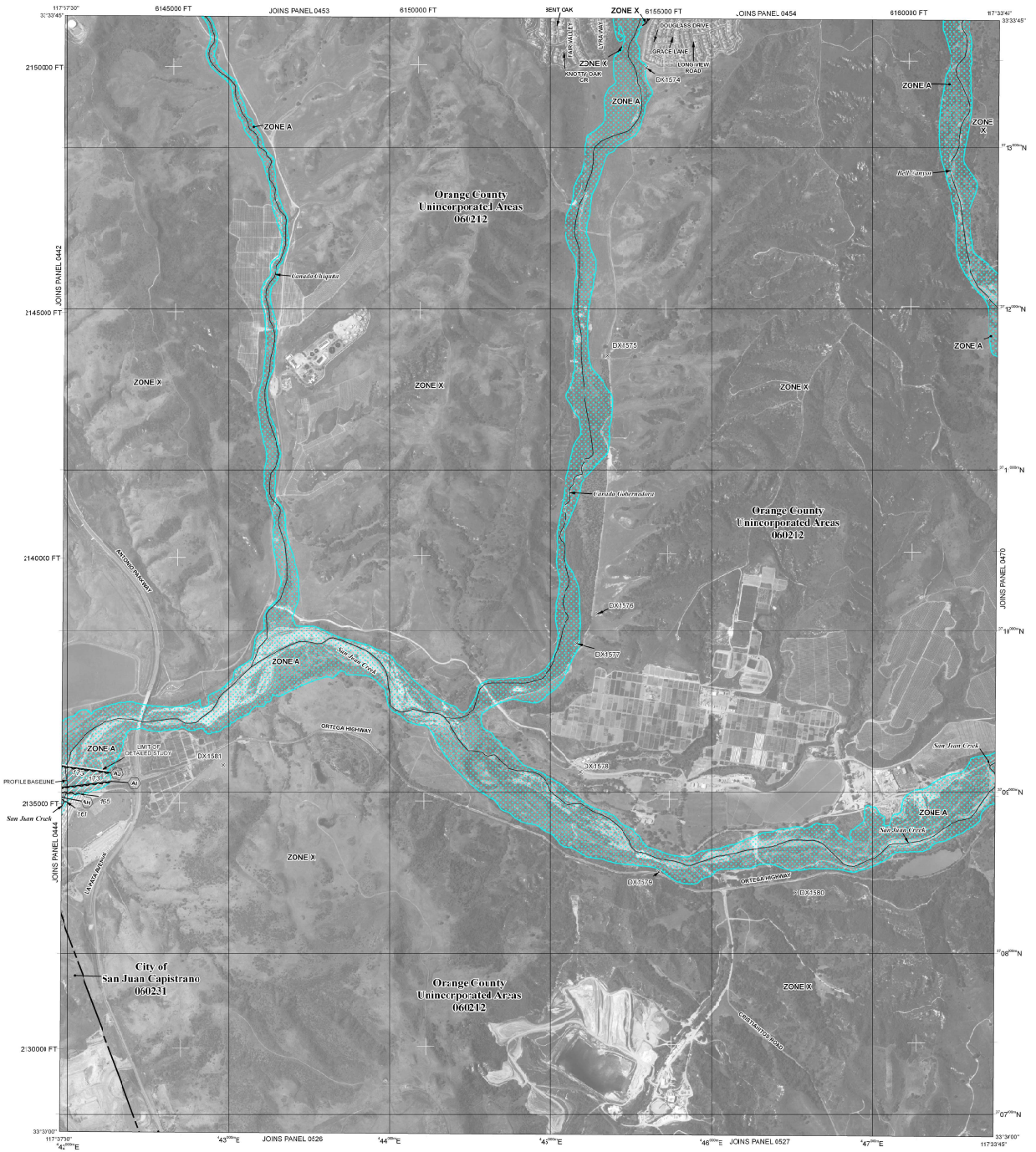

LEGEND

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

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

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

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

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

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- D — D — Transect line
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 3776000 mN — 1000-meter Universal Transverse Mercator grid values, zone NAD 1983 UTM Zone 11N
- 600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone VI (FIPSZONE 0406). Lambert Conformal Conic projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 15, 1989

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 5, 1992 - November 3, 1993 - January 3, 1997 - February 16, 2006 - December 3, 2009 - for description of revisions, see Notice to Users page in the Flood Insurance Study report.

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MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0465J

FIRM

FLOOD INSURANCE RATE MAP

ORANGE COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 465 OF 539

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ORANGE COUNTY	060212	0465	J
SAN JUAN CAPISTRANO, CITY OF	060231	0465	J

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

MAP NUMBER
06059C0465J

MAP REVISED
DECEMBER 3, 2009

Federal Emergency Management Agency

NOTES TO USERS

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NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
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1315 East-West Highway
Silver Spring, Maryland 20910-3282
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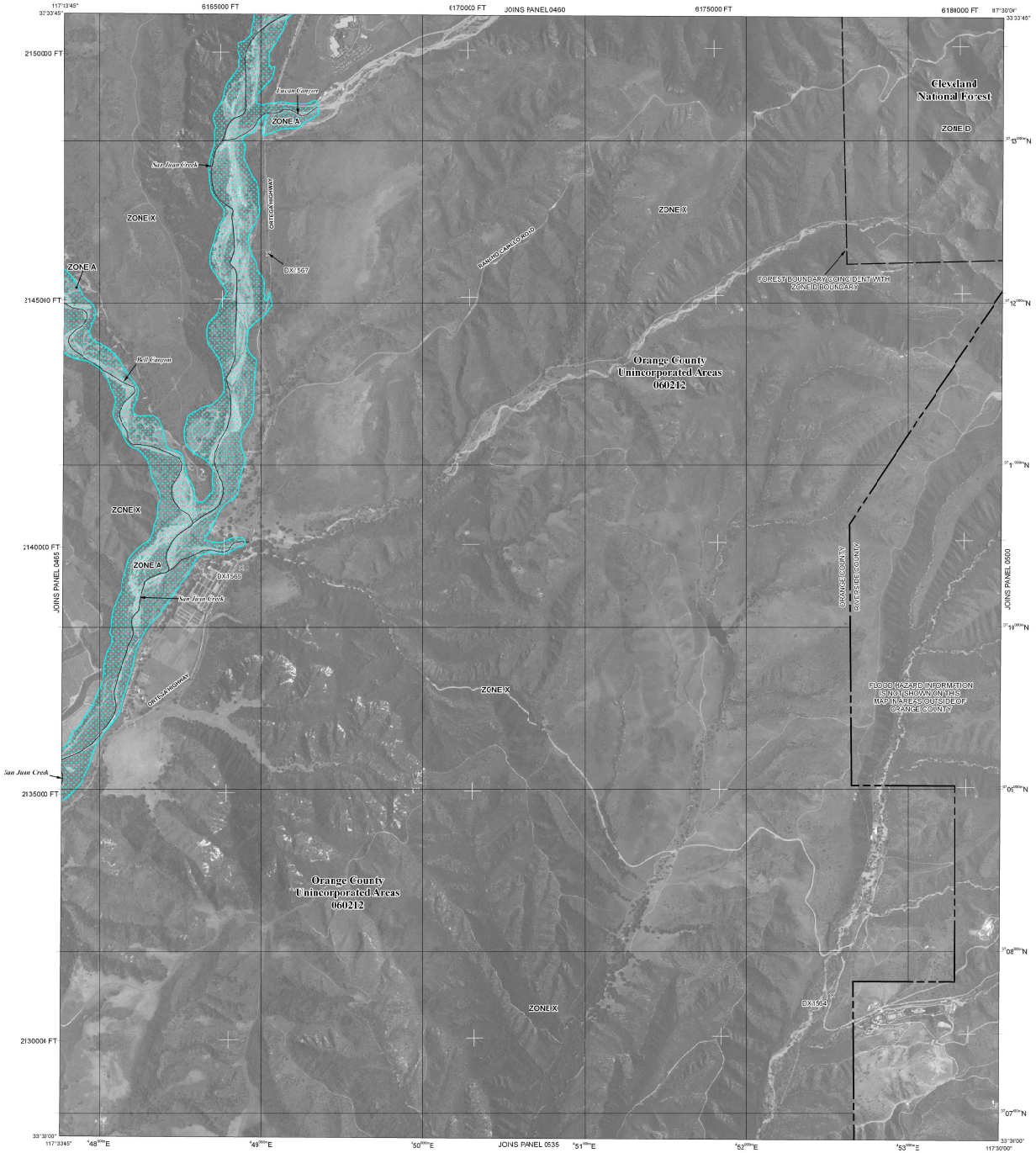

LEGEND

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OTHER FLOOD AREAS

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OTHER AREAS

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- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

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- M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 15, 1989

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 5, 1992 - November 3, 1993 - January 5, 1997 - February 16, 2006 - December 3, 2009 - for description of revisions, see Notice to Users page in the Flood Insurance Study report.

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MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0470J

FIRM

FLOOD INSURANCE RATE MAP

ORANGE COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 470 OF 539

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ORANGE COUNTY	060212	0470	J

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

MAP NUMBER 06059C0470J

MAP REVISED DECEMBER 3, 2009

Federal Emergency Management Agency

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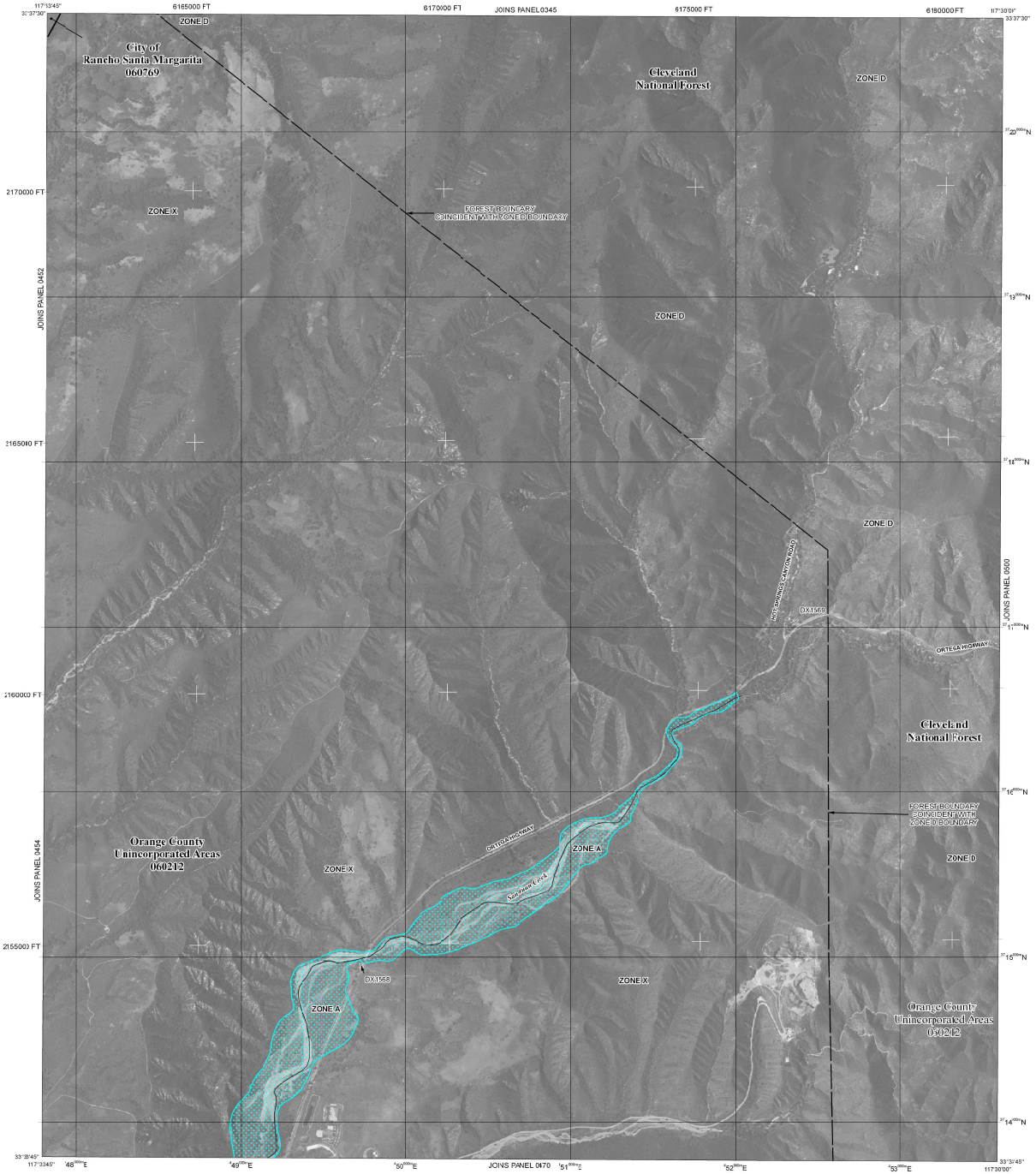

LEGEND

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ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
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ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

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OTHER FLOOD AREAS

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

OTHER AREAS

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OTHERWISE PROTECTED AREAS (OPAs)

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MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 15, 1989

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 5, 1992 - November 3, 1993 - January 3, 1997 - February 16, 2004 - December 3, 2009 - for description of revisions, see Notice to Users page in the Flood Insurance Study report.

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MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0460J

FIRM

FLOOD INSURANCE RATE MAP

ORANGE COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 460 OF 539

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ORANGE COUNTY	060212	0460	J
RANCHO SANTA MARGARITA, CITY OF	060769	0460	J

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

MAP NUMBER
06059C0460J

MAP REVISED
DECEMBER 3, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

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

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

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

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #8202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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

Base map information shown on this FIRM was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1996 or later.

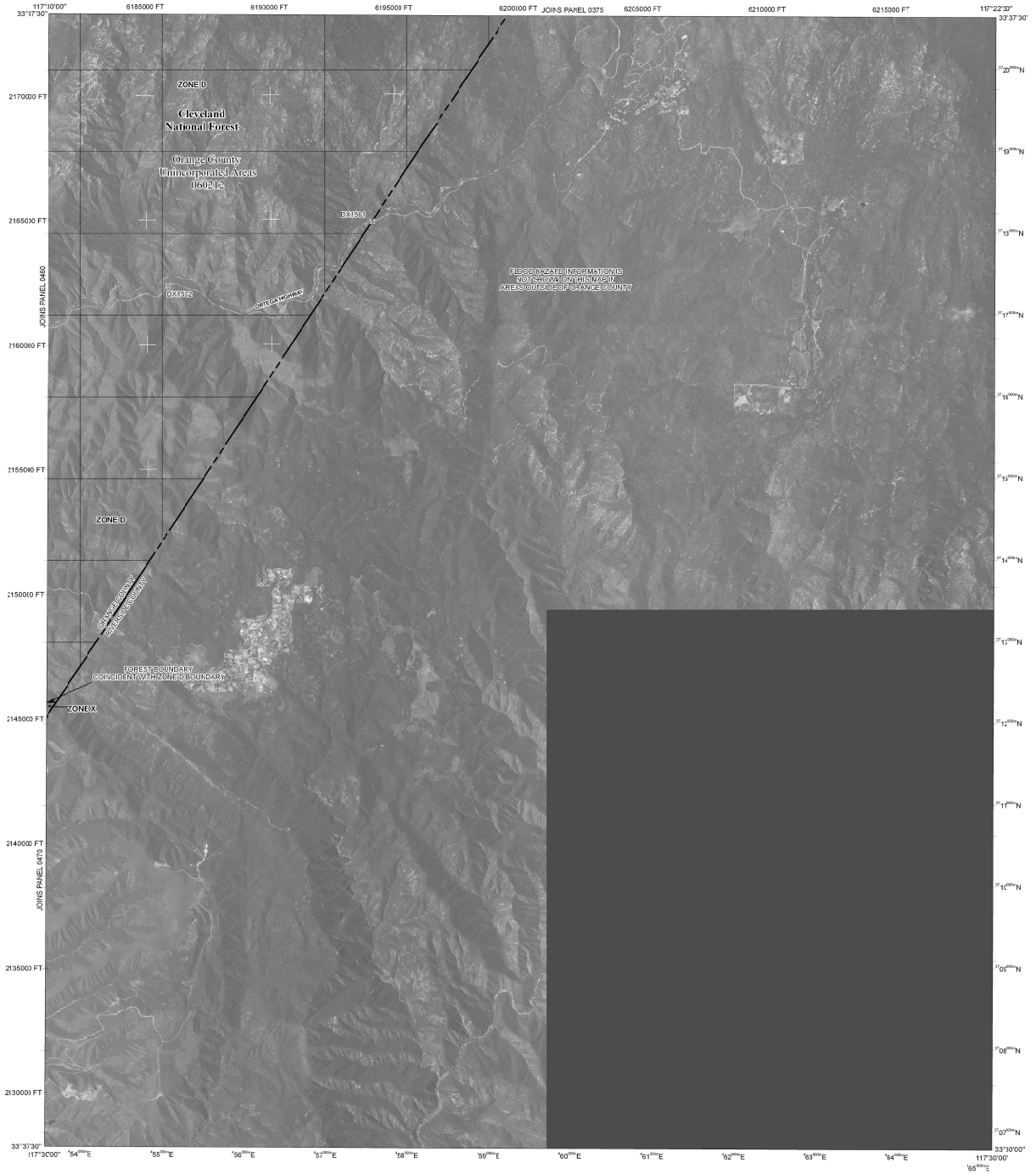
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result,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

Corporate limits shown on this 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 this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

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

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

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

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

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

OTHER AREAS

- **ZONE X** — Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAS)

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

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- Cross section line
- Transect line
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4376000mN — 1000-meter Universal Transverse Mercator grid values, zone NAD 1983 UTM Zone 11N
- 600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone VI (FIPSZONE 0406), Lambert Conformal Conic projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 15, 1989

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 5, 1992 - November 3, 1993 - January 3, 1997 - February 16, 2004 - December 3, 2009 - for description of revisions, see Notice to Users page in the Flood Insurance Study report.

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

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

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET

600 0 600 1200 METERS

PANEL 0500J

FIRM

FLOOD INSURANCE RATE MAP

ORANGE COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 500 OF 539

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ORANGE COUNTY	060212	0500	J

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

NATIONAL FLOOD INSURANCE PROGRAM

MAP NUMBER 06059C0500J

MAP REVISED DECEMBER 3, 2009

Federal Emergency Management Agency