

Flood, Dam and Reservoir Failure Annex

2019

Attachment C

Dam and Reservoir Listing M through Y,

Background,

Water Timeline,

Notification

Inundation Maps

LISTING OF REGISTERED DAM/RESERVOIRS IN ORANGE COUNTY (M THROUGH Y)

Name	Owner	Location Lat/Long	Stream	Year Built	Storage Capacity (acre feet)	Reservoir Area (acres)	Drainage Area (square miles)	Height (feet)	Length (feet)	Structure Type	Usage
Marshburn Retarding Basin	County of Orange	33.694 -117.73	Tributary Marshburn Channel	1997	395	21	5.67	23	2456	Earth	Flood Control Debris Control, Water Quality
Orange County Reservoir	Metropolitan Water District	33.937 -117.88	Tributary Fullerton Creek	1941	217	7	.01	103	655	Earth	Storage Domestic
Orchard Estates Retarding Basin	County of Orange	33.738 -117.75	Tributary Rattlesnake Creek	1999	136	11	.63	21	810	Earth	Flood Control, Debris Control
Palisades Reservoir	South Coast Water District	33.463 -117.65	Tributary Prima Deschecha	1963	147	6	.03	146	620	Earth	Storage Domestic
Peters Canyon	County of Orange	33.78 -117.76	Peters Canyon Wash	1932	1090	65	1.6	45	600	Earth	Flood Control, Storage, Irrigation Regulation
Portola	Santa Margarita Water District	33.633 -117.58	Canada Gobermadora	1980	586	20	.18	53	1200	Earth	Storage Irrigation
Prado Dam	USACE	33.889 -117.64	Santa Ana River	1941	314400	6695	2230	106	2280	Earth	Flood Control
Rattlesnake Canyon	Irvine Ranch Water District	33.728 -117.74	Rattlesnake Creek	1959	1480	60	2.02	79	980	Earth	Storage, Irrigation Sewage

Name	Owner	Location Lat/Long	Stream	Year Built	Storage Capacity (acre feet)	Reservoir Area (acres)	Drainage Area (square miles)	Height (feet)	Length (feet)	Structure Type	Usage
Rossmoor Retarding Basin	County of Orange	33.787 -118.09	Los Alamitos Channel	1985	175	25	2.98	14	95	Earth	Flood Control
Round Canyon Retarding Basin	County of Orange	33.698 -117.69	Round Canyon Wash	1994	286	16	1.7	95	750	Earth	Storage Flood Control Debris Control
San Joaquin Reservoir	Irvine Ranch Water District	33.62 -117.84	Tributary Bonita Creek	1966	3036	50	.35	224	873	Earth	Storage, Domestic Municipal
Sand Canyon	Irvine Ranch Water District	33.648 -117.8	Sand Canyon	1912	960	51	6.76	58	861	Earth	Storage, Irrigation
Santiago Creek (Irvine Lake)	Serrano and Irvine Ranch Water Districts	33.785 -117.72	Santiago Creek	1933	25000	650	63.1	136	1425	Earth	Storage, Irrigation Recreation
Sulphur Creek	County of Orange	33.55 -117.71	Sulphur Creek	1965	520	40	4.9	42	485	Earth	Storage, Irrigation Recreation
Syphon Canyon	The Irvine Company	33.71 -117.73	Tributary Newport Bay	1949	500	27	.29	59	843	Earth	Irrigation Regulation
Trabuco	Trabuco Canyon Water Company	33.643 -117.56	Tributary Dove Creek	1984	138	5	.05	108	620	Earth	Storage, Irrigation
Trabuco Retarding Basin	County of Orange	33.695 -117.76	San Diego Creek	1996	263	22	3.1	18	2250	Earth	Flood Control Water quality

Trampas Retarding Basin	Oglebay Norton Ind.	33.498 -117.59	Trampas Canyon	1975	5700	96	.91	183	600	Earth	Storage, Diversion Industrial
Name	Owner	Location Lat/Long	Stream	Year Built	Storage Capacity (acre feet)	Reservoir Area (acres)	Drainage Area (square miles)	Height (feet)	Length (feet)	Structure Type	Usage
Upper Chiquita	Santa Margarita Water District	33.590 -117.61	Tributary to San Juan Creek	2012	753.5	15.65	0.035	177.2	965	Earth	Storage Domestic
Upper Oso	Santa Margarita Water District	33.658 -117.63	Oso Creek	1979	3700	115	1.13	142	800	Earth	Storage, Irrigation, Recreation
Veeh	Lake Hills Community Church	33.625 -117.73	Tributary San Diego Creek	1936	185	16	1.7	37	417	Earth	Storage, Irrigation
Villa Park	County of Orange	33.815 -117.77	Santiago Creek	1963	16000	469	83.4	118	119	Earth	Flood Control Water Conservation Regulation
Walnut Canyon	City of Anaheim	33.842 -117.75	Walnut Canyon	1968	2570	47	.33	187	930	Earth	Storage Municipal
Yorba	County of Orange	33.872 -117.81	Atwood Channel	1907	1200	87	1.5	45	920	Hydraulic Fill	Flood Control

Marshburn Retarding Basin

Owner: County of Orange

California ID#: 1012-011

National ID#: CA01426

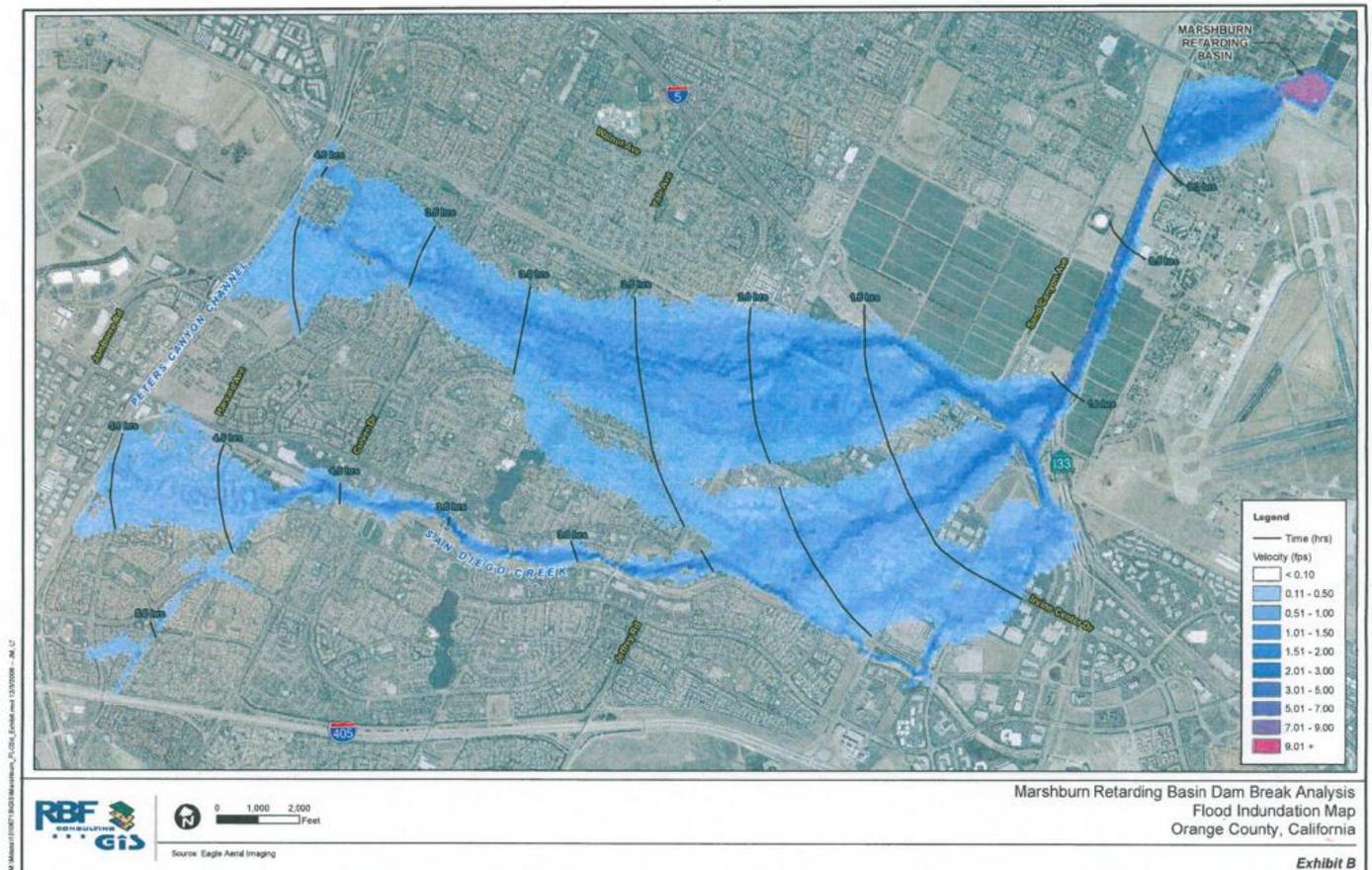
Marshburn Retarding Basin

Marshburn Retarding Basin is fed by the tributary of the Marshburn channel and is used for flood control and debris control.

Dam Type	Risk Rating	Length	Height
Earth	High	2456 ft	27 ft

Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres
282	5.69	26

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Irvine Police Department	Orange County Fire Authority	City of Irvine Transportation Corridor Agency Ca Highway Patrol





Notification

OC Public Works is responsible for control, coordination and notification of the Marshburn Retarding Basin.

Orange County Reservoir

Owner: Metropolitan Water District

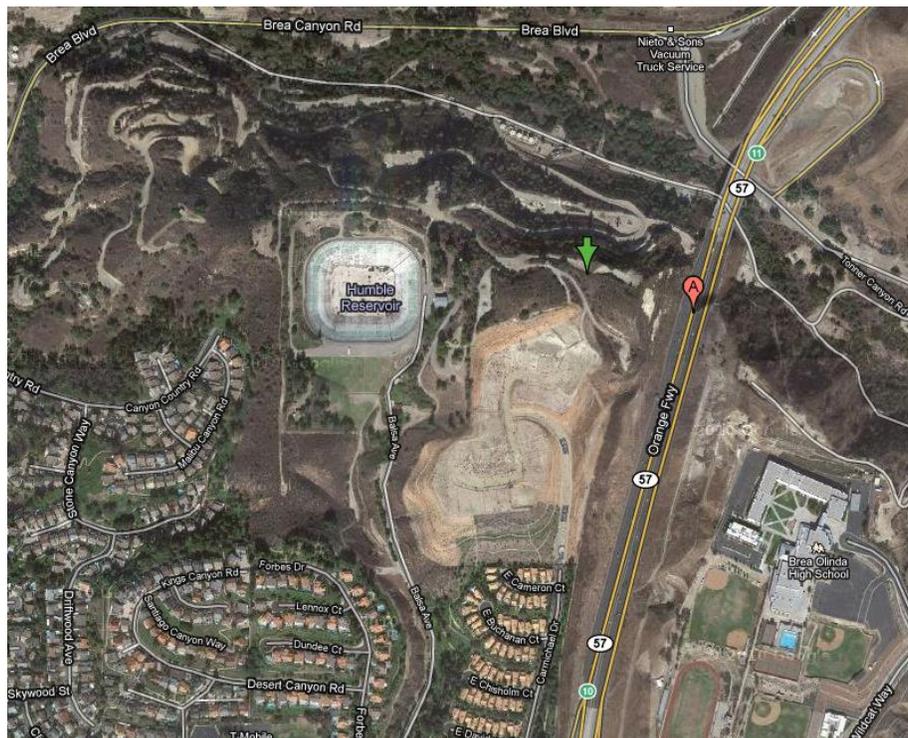
California ID#: 0035-007

National ID#: CA00218

Orange County Reservoir

Orange County Reservoir was constructed in 1941 and has a maximum controlled storage of 200 ac-ft. and a maximum controlled water surface (spillway crest) of 658 MSL and its use is for storage and domestic. Storm drains and catch basins inlets considered to have negligible effect on flows in surface streets. The only culverts that have sufficient capacity for the flood waters are those along the Loftus Diversion Channel. Flood waters will be intercepted and stored in the flood channel basin above Fullerton Dam which is maintained by the US Army Corps of Engineers. Inundation studies are on the conservative side and flow depth will vary widely in the inundated areas. Engineers who designed the inundation study advise where routes are shown following streets, the flooding is not extensive, but expected to be carried primarily in the streets.

Dam Type	Risk Rating	Length	Height
Earth	High	655 ft	103 ft
Storage Capacity feet	in acre	Drainage Area miles	in square Reservoir Area acres
217		0.01	7
Public Safety Answering Point (PSAP)		Fire/EMS	Impacted Jurisdictions
Brea Police Department		Brea Fire Department	City of Brea City of Fullerton OC Parks



Notification

The Metropolitan Water District is responsible for control, coordination and notification of the Orange County Reservoir.

Orange County Reservoir Water Movement Timeline

Location	Arrival Time	
Lambert & State College	10 min	** Inundation studies are on the conservative side and flow depth will vary widely in the inundated areas. Engineers who designed the inundation study advise where routes are shown following streets, the flooding is not extensive, but expected to be carried primarily in the streets. ** Arrival time is for the peak water depth
57 Freeway	15 min	
Brea Olinda & S. Associated Road	20 min	
Imperial Hwy & S. Associated Road	25 min	
Fullerton Dam	35 min	



- NOTES:**
1. Study made in compliance with Section 8509.5 of the Government Code of the State of California.
 2. Approximate limits of inundated areas shown only for sudden release of all water from full reservoir. Boundaries of inundated areas approximate only - largely based on conservative engineering judgement. Flow depths vary widely within inundated areas, it is impossible to determine in some residential blocks. Where flood routes are shown following streets, the flooding is not extensive, but is expected to be carried primarily in the streets.
 3. Orange County Reservoir maximum controlled storage is 200 ± ft.
 4. Maximum controlled water surface (spillway crest) is El. 638.
 5. Storm drains and catch basin inlets considered to have negligible effect on flows in surface streets, the only culverts that have sufficient capacity for the flood waters are those along the Lotus Diversion Channel.
 6. Flood waters will be intercepted and stored in the Flood Control Basin above Fullerton Dam.
 7. Time contours indicate travel time of maximum flood wave.

Flooded areas following a catastrophic dam failure.

0 1000 2000
Scale 1" = 1000'

REVISION	ACCEPTED BY	DATE	OWNER	ENGINEERING ANALYSIS BY	INUNDATION MAP OF ORANGE COUNTY RESERVOIR
BY DATE			The Metropolitan Water District of So. Calif. 1111 Sunset Boulevard Los Angeles, California 90012	Munson W Dowd, Chief Engineer 1111 Sunset Boulevard Los Angeles, California 90012	
	APPROVED		DATE	SIGNATURE <i>Munson W Dowd</i>	Orange COUNTY DWG. NO.
			NEXT REVIEW DATE	REG. CIV. ENG. NO. 6326	SHEET NO.

Orchard Estates Retarding Basin

Owner: County of Orange

California ID#: 1012-16

National ID#: CA01436

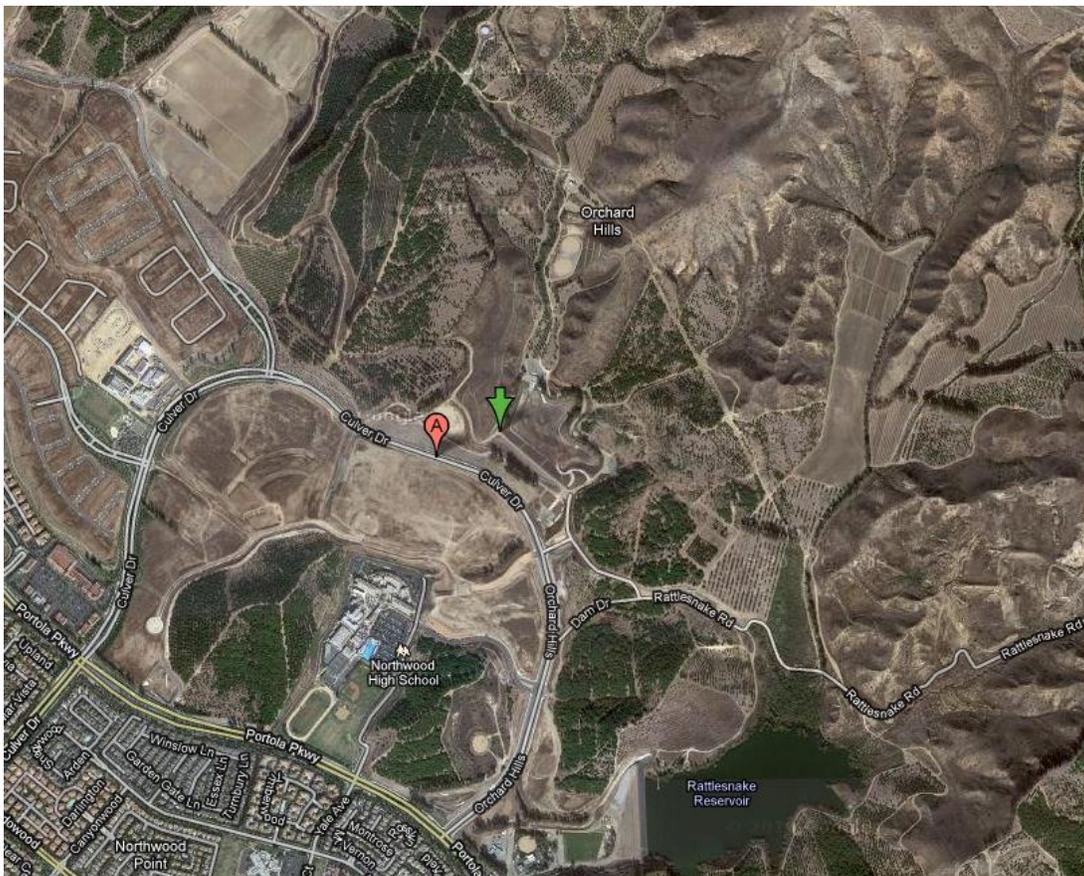
Orchard Estates Retarding Basin

The Orchard Estates Retarding Basin is another key element of the drainage network within the San Diego Creek Watershed and is located north of Culver Drive in the City of Irvine. Construction of the facility was completed in 1999. The retarding basin is fed by the tributary of the Rattlesnake Canyon and provides protection of downstream development during major storm events and reduction of sediment flow to Upper Newport Bay.

Dam Type	Risk Rating	Length	Height
Earth	High	810 ft	21ft

Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres
136	0.63	11

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Irvine Police Department	Orange County Fire Authority	City of Irvine Irvine Unified School District



Notification

OC Public works is responsible for control, coordination and notification of the Orchard Estates Retarding Basin.

Palisades Dam

Owner: South Coast Water District

California ID#: 1022-002

National ID#: CA00843



0 1000 Feet 1 inch = 500 feet

AECOM
Paliades Dam Inundation

Name of the Dam: Paliades Dam
Department Dam number: 1022-002
National Dam ID number: CA00843
County where the dam is located: Orange
Failure Scenario: Full Dam Breach (Sunny-Day)
Horizontal Datum: NAD 1983 California Teale Albers (ft US)
Vertical Datum: NAVD88
Date map was prepared: Date: 3/6/2018



- + Clinic
- F Fire Station
- H Hospital
- Approximate Flood Arrival Time
- City Boundary

- Major Highways
- Highways
- Major Roads
- Local Traffic
- Rail Line

- Maximum Flood Depth (ft)**
- 0.00100708 - 2
 - 2.000000001 - 3
 - 3.000000001 - 4
 - 4.000000001 - 5
 - 5.000000001 - 10
 - 10.00000001 - 15
 - 15.00000001 - 20
 - 20.00000001 - 38



DATE: 3/6/2018



0 1,000 Feet 1 inch = 500 feet

AECOM
Palisades Dam Inundation

Name of the Dam: Palisades Dam
Department Dam number: 1022.002
National Dam ID number: CA00843
County where the dam is located: Orange
Failure Scenario: Full Dam Breach (Sunny-Day)
Horizontal Datum: NAD 1983 California Teale Albers (Ft US)
Vertical Datum: NAVD88
Date map was prepared: Date: 3/6/2018



- Clinic
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DATE: 3/6/2018



AECOM

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Name of the Dam: Palisades Dam
 Department Dam number: 1022.002
 National Dam ID number: CA00843
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 Date map was prepared: Date: 3/6/2018



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 - 4.000000001 - 5

- 5.000000001 - 10
- 10.00000001 - 15
- 15.00000001 - 20
- 20.00000001 - 38



DATE: 3/6/2018

Peters Canyon Dam

Owner: County of Orange

California ID#: 1012-006

National ID#: CA00746

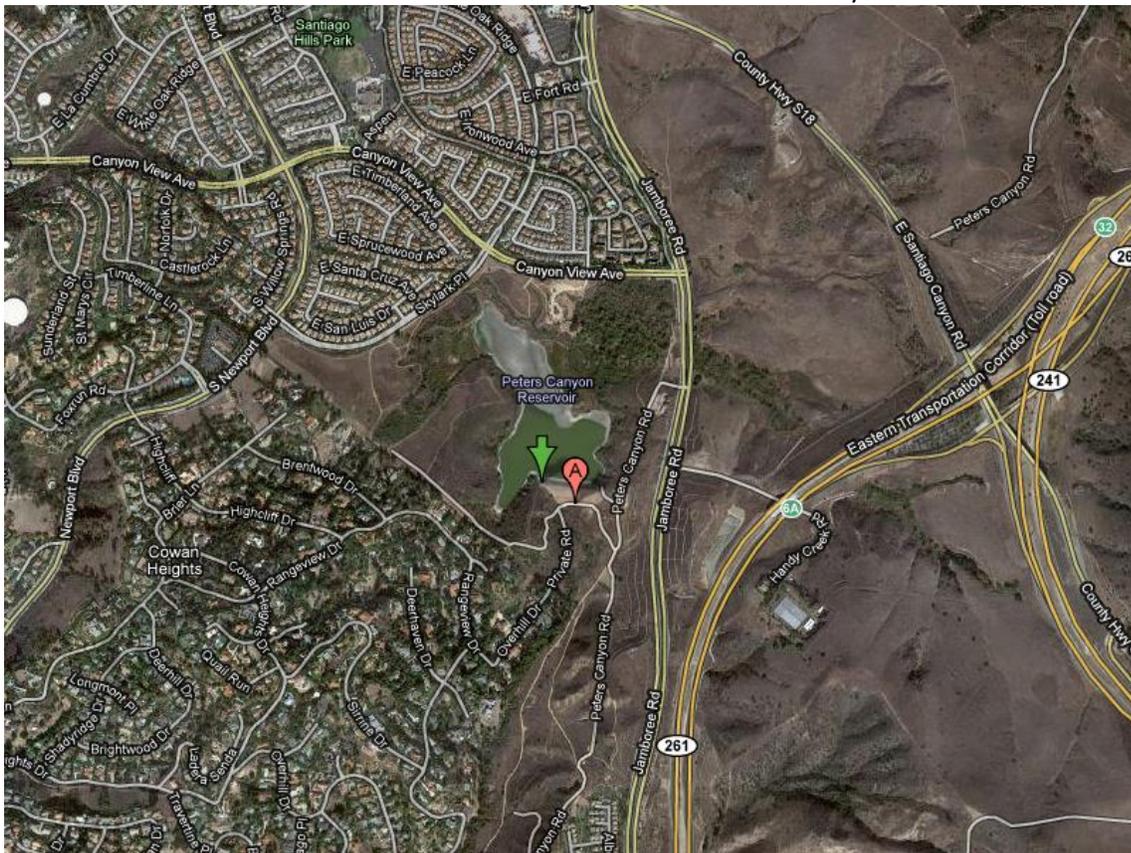
Peters Canyon Dam

Peters Canyon Dam, an earthen dam across Peters Canyon Wash, was built in 1932 by the Irvine Company for use as an irrigation water storage and distribution lake as part of former agriculture and ranching operations. The Irvine Company dedicated the parcel of land that includes the dam and reservoir to the County of Orange in 1992 with the requirement that the dam and reservoir be maintained as a flood control facility. Since 1992, the primary purpose of the dam and its corresponding reservoir includes flood control, recreation, and preservation of wildlife.

Dam Type	Risk Rating	Length	Height
Earth	High	600 ft	45 ft

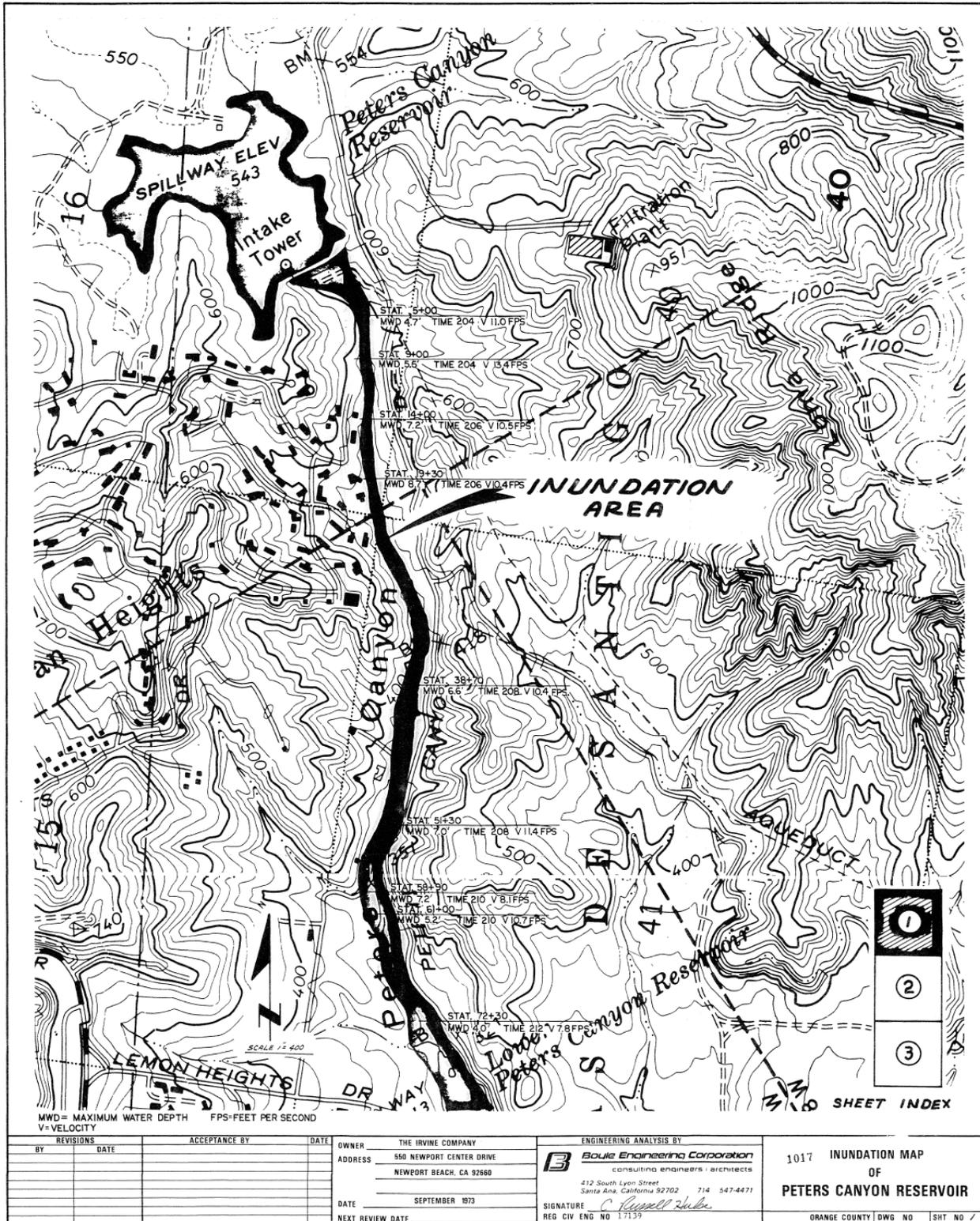
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres
1090	1.6	65

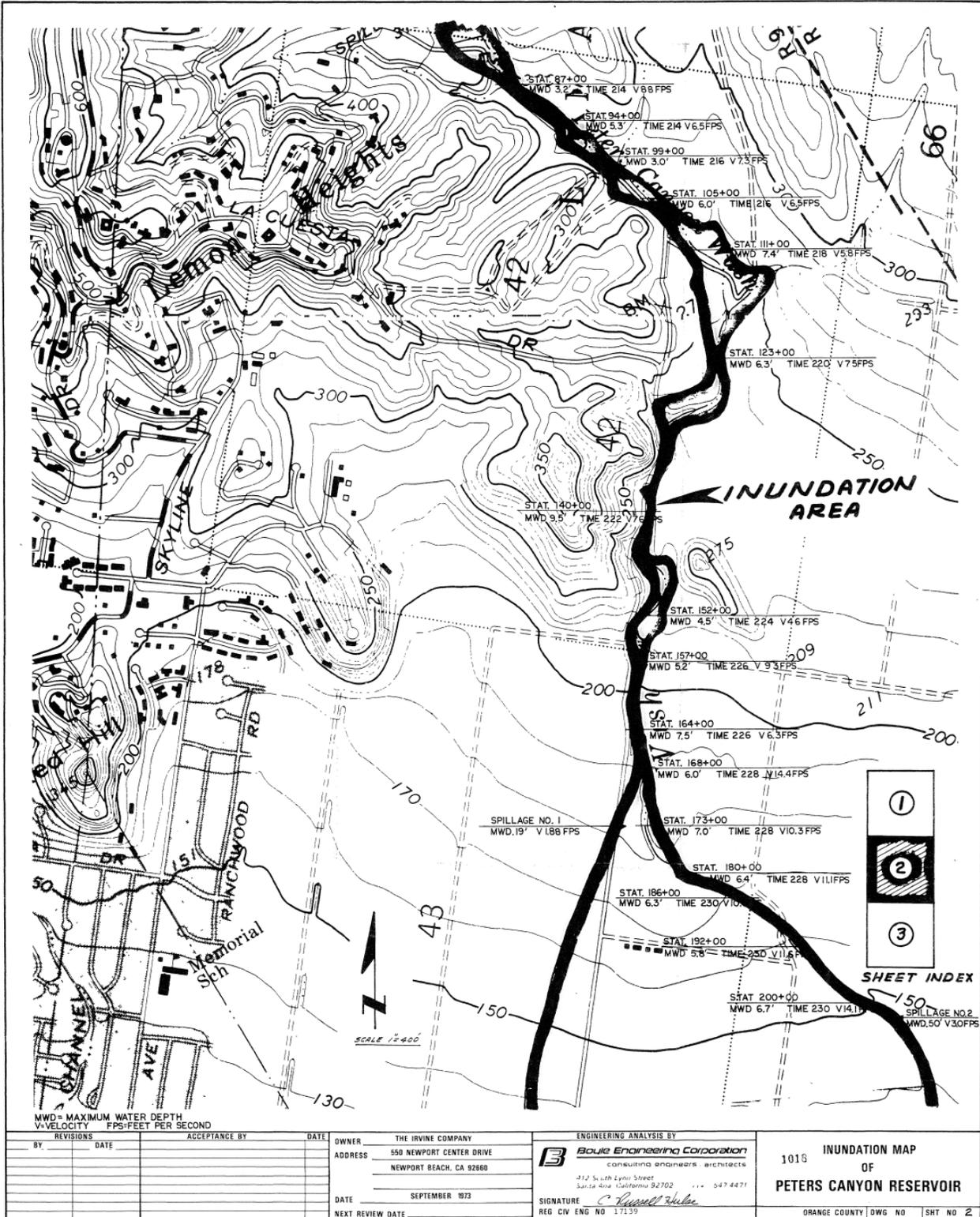
Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sherriff's Department	Orange County Fire Authority	City of Tustin Tustin Unified School District OC Parks City of Irvine

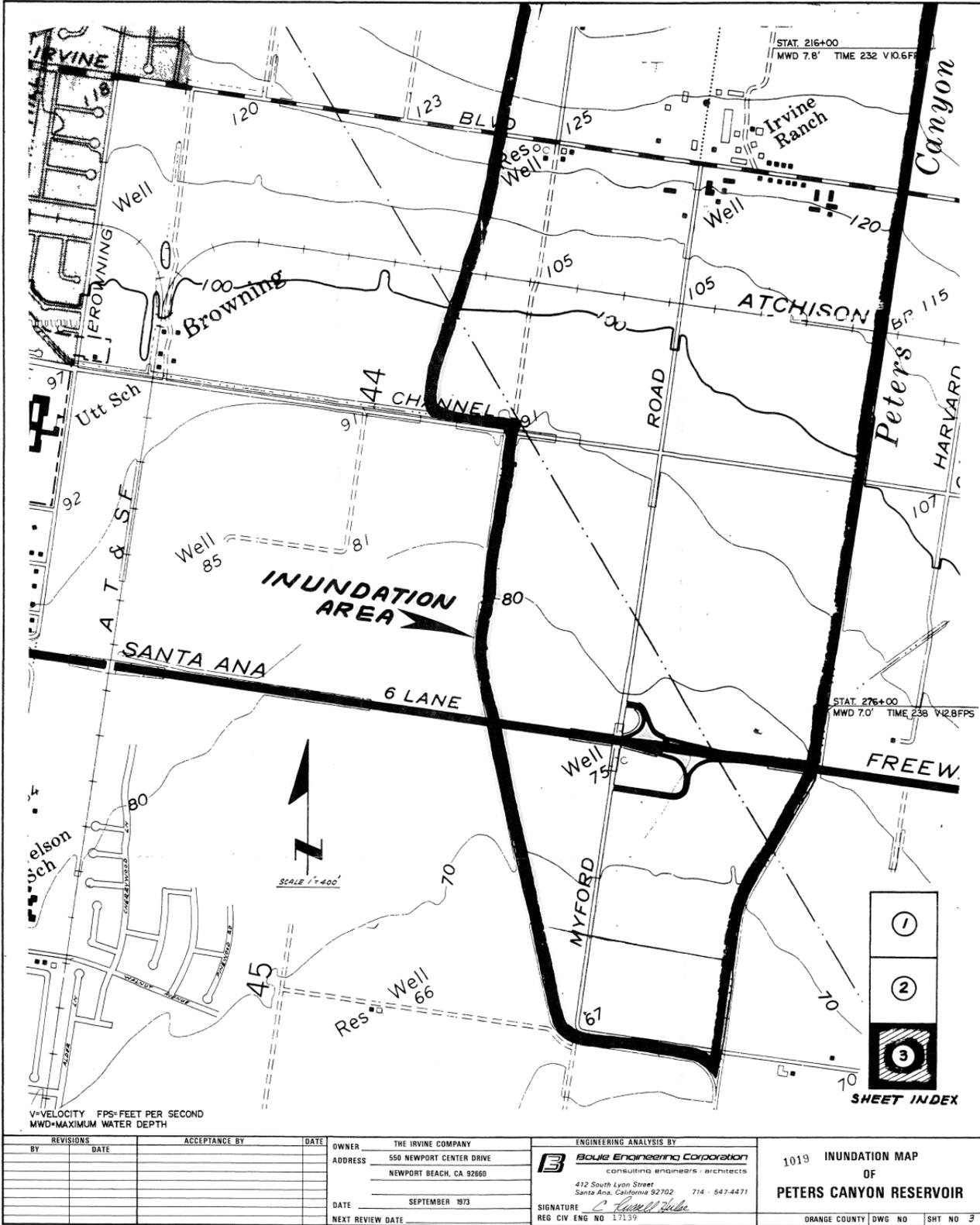


Notification

OC Public Works is responsible for control, coordination and notifications of the Peters Canyon Dam.







V=VELOCITY FPS=FEET PER SECOND
MWD=MAXIMUM WATER DEPTH

REVISIONS		ACCEPTANCE BY	DATE	OWNER	ENGINEERING ANALYSIS BY	1019 INUNDATION MAP OF PETERS CANYON RESERVOIR
BY	DATE			THE IRVINE COMPANY	B Bouie Engineering Corporation consulting engineers - architects	
				ADDRESS 550 NEWPORT CENTER DRIVE NEWPORT BEACH, CA 92660	412 South Lyon Street Santa Ana, California 92702 714 - 547-4471	
				DATE SEPTEMBER 1973	SIGNATURE <i>C. Russell White</i>	
				NEXT REVIEW DATE	REG CIV ENG NO 17139	
						ORANGE COUNTY DWG NO SHT NO 3

Portola Reservoir

Owner: Santa Margarita Water District

California ID#: 2013-002

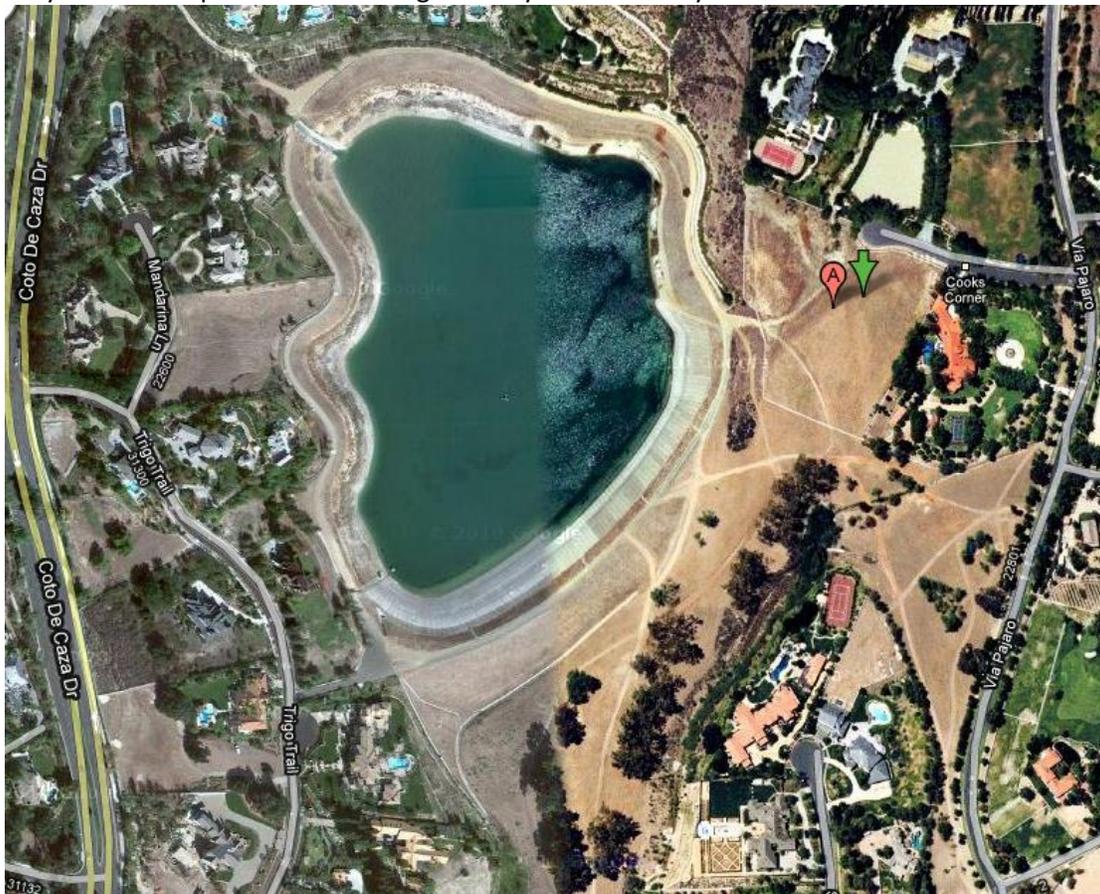
National ID#: CA01183

Portola Reservoir

The Portola Reservoir and Dam are located at the northerly most portion of the community of Coto de Caza, near the intersection of Trigo Trail and Coto de Caza Drive. The reservoir is used for the seasonal storage of nondomestic water and serves the community of Coto de Caza.

Dam Type	Risk Rating	Length	Height
Earth	High	1200 ft	53 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
586	0.18	20	

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sheriff's Department	Orange County Fire Authority	Coto De Caza



Notifications

Santa Margarita Water District is responsible for control, coordination and notifications of the Portola Reservoir.

Portola Reservoir Water Movement Timeline

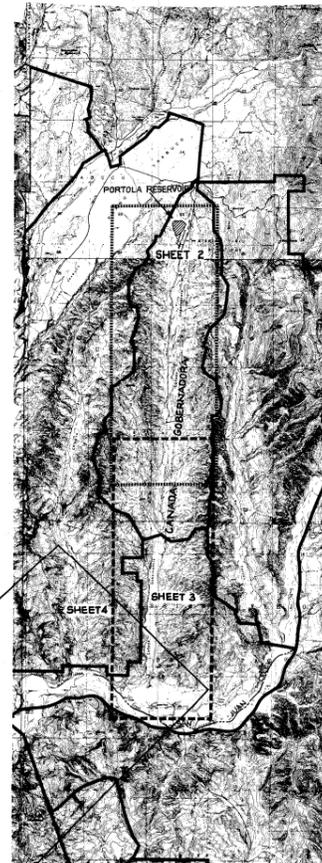
Location	Arrival Time	
Ortega Highway	1.76 hrs	<i>There is no information available regarding amount or depth of water when it reaches it arrival point.</i>
Genado Road	2.07 hrs	
San Diego Freeway	2.26 hrs	
Camino Capistrano	2.31 hrs	
Sante Fe Railroad	2.34 hrs	
Pacific Coast Highway	2.60 hrs	

**above reference points are the closest approximate *main streets* along plotted timeline of inundation maps. It is up to the city to decide small residential tract evacuation routes and plans

PORTOLA DAM & RESERVOIR



VICINITY MAP



INDEX MAP

BENCH MARK

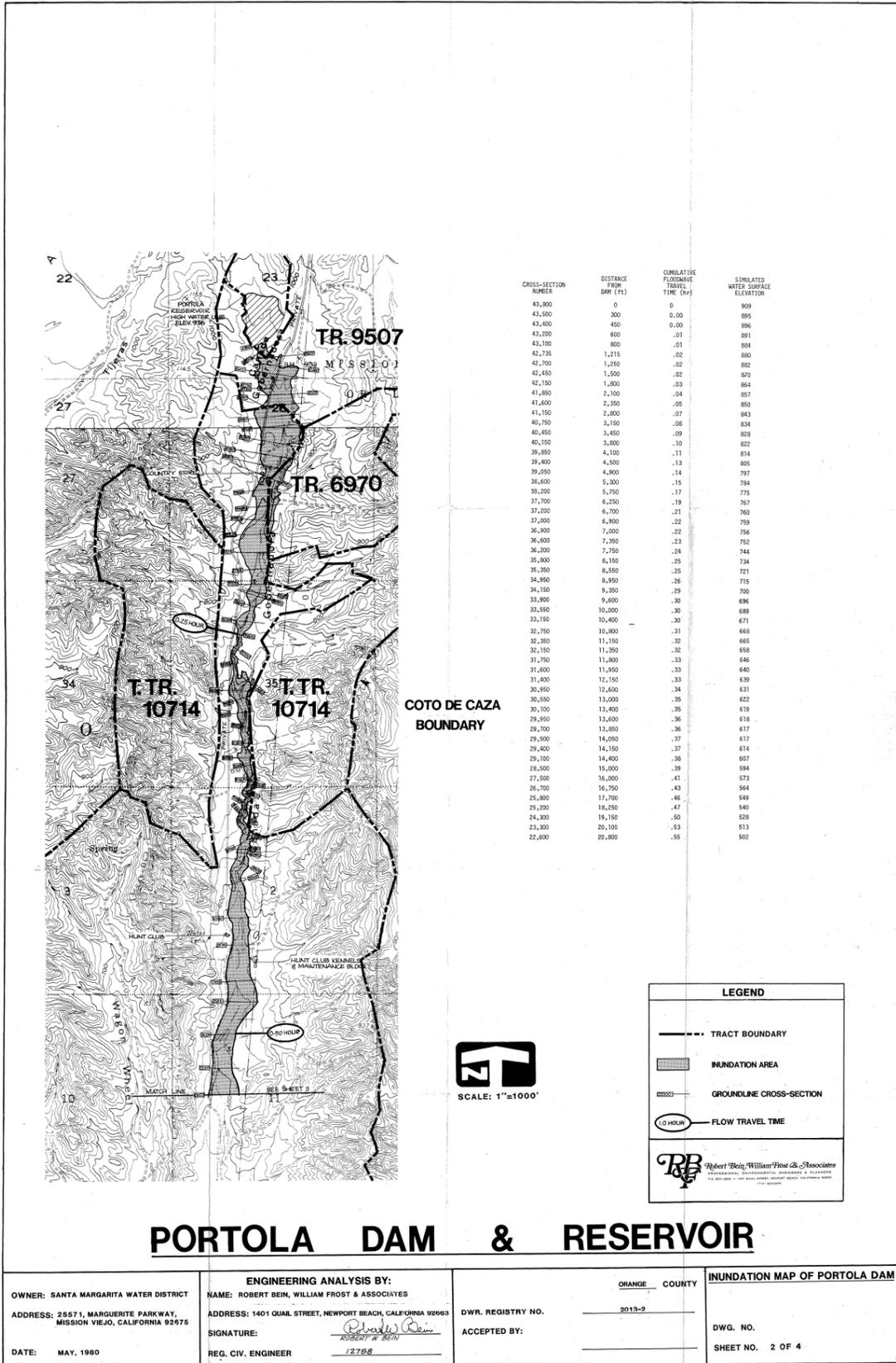
34-61-72, 1970 ADJ. ELEV. 919.006 FROM THE TRABUCO FIRE STA. (0.8 MI. N.E. ALONG LIVE OAK CAN. RD. FROM MAIN EXT. TO O'NEIL POINT) 1.3 MI. S.E. ALONG LIVE OAK CAN. RD. TO PLANO TRABUCO RD. 1.0 MI. S. ON PLANO TRABUCO RD. TO MAIN EXT. TO COTO DE CAJA, FOLLOW PAVED RD. 1.0 MI. S. 1970 COTO DE CAJA TO A 3 FT. H.T. 4 IN. DIA. WOODEN POST ON THE RT. SET ALONG THE RD. ON OUTSIDE OF CURVE. THE MARK IS 5 FT. W. OF N.E.1/4 EDGE OF PAVED RD., 2 FT. S. OF THE WOODEN POST, 1.5 FT. E. OF A STEEL WITNESS POST, SET IN TOP OF CONC. POST, 0.3 FT. ABOVE GROUND.



SCALE: 1"=4000'

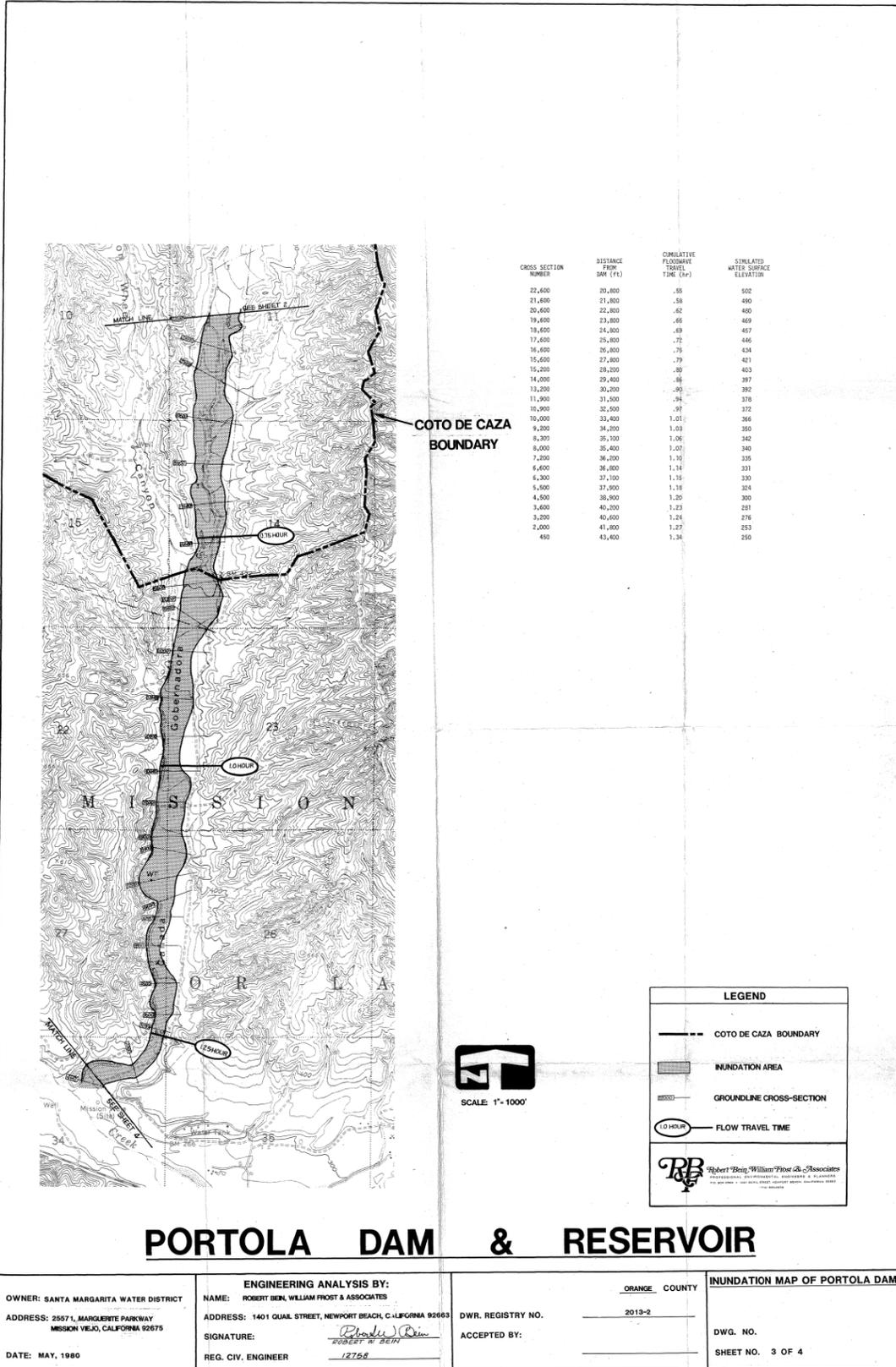
Robert Bein William Frost & Associates
PROFESSIONAL ENVIRONMENTAL ENGINEERS & PLANNERS
P.O. BOX 2880 • 100 BURNING WOODS AVENUE, BEVERLY HILLS, CALIFORNIA 90210
(714) 920-0070

<p>OWNER: SANTA MARGARITA WATER DIST. ADDRESS: 25571, MARGUERITE PARKWAY MISSION VIEJO, CALIF. 92675 DATE: MAY, 1980</p>	<p>ENGINEERING ANALYSIS BY: NAME: ROBERT BEIN WILLIAM FROST & ASSOCIATES ADDRESS: 1401 QUAIL STREET, IRVINE CALIF. 92663 SIGNATURE: <i>(Signature)</i> REG. CIV. ENGINEER 12758</p>	<p>ORANGE COUNTY DWR. REGISTRY NO. 2013-2 ACCEPTED BY: _____</p>	<p>INUNDATION MAP OF PORTOLA DAM DWG. NO. _____ SHEET NO. 1 OF 4</p>
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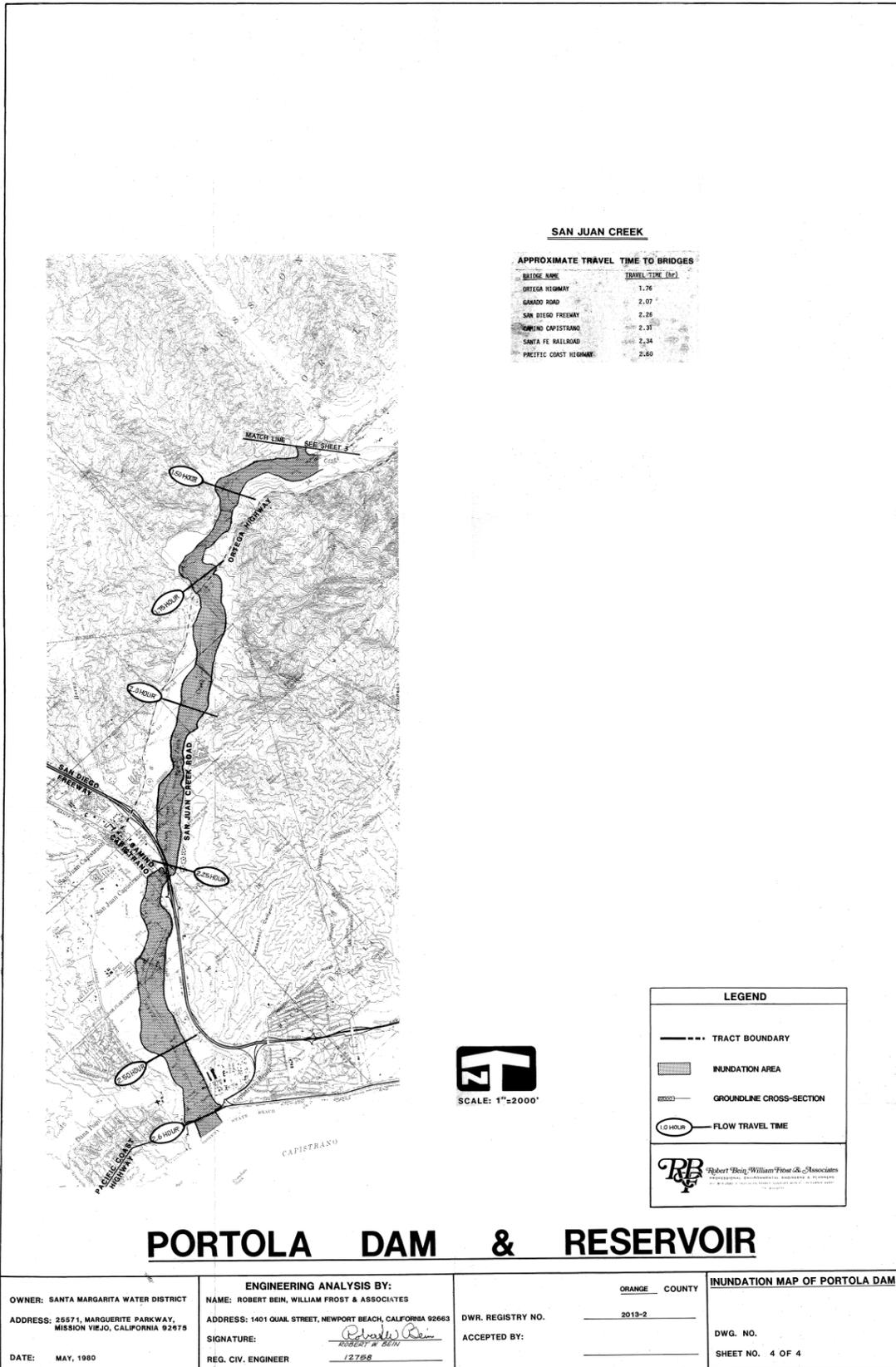
PORTOLA DAM & RESERVOIR

<p>OWNER: SANTA MARGARITA WATER DISTRICT ADDRESS: 25571, MARGUERITE PARKWAY, MISSION VIEJO, CALIFORNIA 92675 DATE: MAY, 1980</p>	<p>ENGINEERING ANALYSIS BY: NAME: ROBERT BEIN, WILLIAM FROST & ASSOCIATES ADDRESS: 1401 QUAIL STREET, NEWPORT BEACH, CALIFORNIA 92663 SIGNATURE: <i>Robert Bein</i> REG. CIV. ENGINEER 12768</p>	<p>ORANGE COUNTY DWR. REGISTRY NO. 2013-2 ACCEPTED BY:</p>	<p>INUNDATION MAP OF PORTOLA DAM DWG. NO. SHEET NO. 2 OF 4</p>
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PORTOLA DAM & RESERVOIR

OWNER: SANTA MARGARITA WATER DISTRICT ADDRESS: 2557 L. MARGUERITE PARKWAY MISSION VIEJO, CALIFORNIA 92675 DATE: MAY, 1980	ENGINEERING ANALYSIS BY: NAME: ROBERT DEIN, WILLIAM FROST & ASSOCIATES ADDRESS: 1401 OUAL STREET, NEWPORT BEACH, C-LIFCORNIA 92663 SIGNATURE: <i>Robert W. Dein</i> REG. CIV. ENGINEER 12758	ORANGE COUNTY DWR. REGISTRY NO. 2013-2 ACCEPTED BY: _____	INUNDATION MAP OF PORTOLA DAM DWG. NO. _____ SHEET NO. 3 OF 4
	007 8 1980		



Prado Dam

Owner: USACE

California ID#: N/A

National ID#: CA10022

Also see USACE Prado Dam Emergency Action and Notification Sub-plan

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO)

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**US Army Corps of Engineers
Los Angeles District
Reservoir Regulation Section**

Prado Dam

Prado Dam is a flood control and water conservation project constructed and operated by the U.S. Army Corps of Engineers, Los Angeles District. Construction of the project was completed in April 1941. The project is located at the upper end of the Lower Santa Ana River Canyon, which is a natural constriction controlling 2,255 square miles (5,840 square kilometers) of the 2,450 square mile (6345 square kilometer) Santa Ana River watershed. The dam is located on the Santa Ana River approximately 30.5 miles (49 kilometers) upstream of the Pacific Ocean. The dam embankment is located in Riverside County, California approximately 2 miles (3.2 kilometers) west of the City of Corona. Portions of the reservoir are in both Riverside and San Bernardino Counties. Authorization for the project construction is contained in the Flood Control Act of June 22, 1936 (PL 74-738).

Prado Dam provides flood control and water conservation storage for Orange County, California. It is the downstream element of the Santa Ana River flood control system. The purpose of the project is to collect runoff from the uncontrolled drainage areas upstream along with releases from other storage facilities. Generally, when the water surface elevation in the reservoir pool is below the top of the buffer pool elevation (494.0 feet NGVD during the flood season, 505.0 feet NGVD during the non-flood season), water conservation releases are made. These releases are coordinated with the Orange County Water District and are based upon the capacity of their groundwater recharge facilities and agreements with other agencies. If the water surface in the reservoir exceeds the top of the buffer pool, flood control releases commence. The objective of the flood control operation is to drain the reservoir back to the top of the buffer pool as quickly as possible without exceeding the capacity of the channel downstream. In current practice, when the water surface in the reservoir exceeds the top of the buffer pool, releases are increased to match inflow up to 5000 cfs (142 cms). When inflows exceed 5000 cfs, the excess water is stored in the reservoir.

When the water surface elevation in the reservoir reaches 543.0 feet NGVD uncontrolled releases from the spillway will commence.

The 5000 cfs limit on controlled releases from Prado Dam is based upon the old non-damaging capacity of the downstream channel. When the downstream channel improvements which are part of the Corps of Engineers' Santa Ana River project are completed the downstream channel capacity will increase dramatically to over 30,000 cfs (850 cms). Plans are also underway to improve Prado Dam itself to increase its storage and release capacities. These improvements will enable the dam to take full advantage of the improved channel capacity downstream and will greatly increase the level of flood protection to the communities of Orange County in the Santa Ana River floodplain. When these improvements near completion, a new water control plan and manual for the project will be developed.

The interim water control manual (during construction) for Prado Dam was approved in May 2003.

Embankment

Type	Earth Fill
Crest Elevation	566 feet NGVD
Maximum height above streambed	106 feet
Crest Length	2,280 feet
Freeboard during PMF	(-4.3) feet

Reservoir

Debris Pool

Elevation of top of Pool	490.0 feet NGVD
Area at top of Pool	768 Acres
Gross Storage at top of Pool	4,689 Acre-feet

Flood Season Buffer Pool

Elevation of top of Pool	494.0 feet NGVD
Area at top of Pool	1,081 Acres
Gross Storage at top of Pool	8,437 Acre-feet

Non-Flood Season Buffer Pool

Elevation of top of Pool	505.0 feet NGVD
Area at top of Pool	2,123 Acres
Gross Storage at top of Pool	25,760 Acre-feet

Top of Dam

Elevation of top of Pool	566.0 feet NGVD
Area at top of Pool	11,030 Acres
Gross Storage at top of Pool	383,500 Acre-feet

Historic Maximum Water Surface

Date	22 February 1980
Maximum Elevation	528.0 feet NGVD

Historic Maximum Release

Date	13 January 2005
Maximum Release	10,100 cfs

Notes:

NGVD = National Geodetic Vertical Datum of 1929.

cfs = cubic feet per second

ha = hectare

Prado Dam Water Movement Timeline

Location	Arrival Time	Distance from Dam	Peak Elevation	Time of Peak Elevation	Avg. Over Bank Depth
Hwy 71 (Riverside Co.)	.25 hour	.4 mile	480 NAVD	1.75 hours	15 feet
Green River	.5 hour	1.7 miles	449 NAVD	2.25 hours	15 feet
91 Fwy between Green River & Weir Canyon (east)	.75 hour	2.9 miles	440 NAVD	2.5 hours	16 feet
91 Fwy between Green River & Weir Canyon (west)	1.0 hour	3.9 miles	426 NAVD	2.5 hours	25 feet
91 Fwy @ Weir Canyon	1.25 hours	5.3 miles	393 NAVD	2.75 hours	15 feet
91 Fwy between Weir Canyon & Yorba Linda Blvd	1.5 hours	6.7 miles	371 NAVD	3.0 hours	15 feet
91 Fwy @ Yorba Linda Blvd	2.0 hours	9.3 miles	325 NAVD	3.25 hours	13 feet
91 Fwy between Yorba Linda Blvd & Imperial Hwy	2.5 hours	11.1 miles	299 NAVD	3.75 hours	13 feet
91 Fwy @ Imperial Hwy	3.25 hours	13.0 miles	267 NAVD	4.0 hours	11 feet
Santa Ana Canyon & Tustin to Tustin & Orangethorpe (Anaheim)	3.5 hours	14.5 miles	239 NAVD	4.25 hours	9 feet
Lincoln & Orange Olive (Orange) to 57 Fwy & Chapman (Fullerton)	4.0 hours	16.0 miles	207 NAVD	4.75 hours	7 feet
Katella & Batavia (Orange) to Raymond Ave Commonwealth (Fullerton)	4.5 hours	17.5 miles	181 NAVD	5.25 hours	6 feet
Bristol & Civic Center (Santa Ana) to Malvern & Dale (Buena Park)	6.25 hours	22.0 miles	96 NAVD	7.5 hours	4 feet
Past LA County Line to Harbor and Baker (Costa Mesa) * timeline border runs parallel to south side of 405 Fwy	8.5 hours	27.0 miles	32 NAVD	10.25 hours	7 feet
Past LA County Line to Warner east of PCH (Huntington Beach) to Seapoint (Huntington Beach)	9.5 hours	31.0 miles	9 NAVD	15.5 hours	4 feet
Atlanta & Beach (Huntington Beach) to Victoria east of SAR (Costa Mesa)	9.5 hours	31.5 miles	9 NAVD	15.5 hours	4 feet
Jamboree & Main St (Irvine) to Jamboree & Michaelson (Irvine)	21.5 hours	28.0 miles	32 NAVD	26.5 hours	2 feet
Campus Drive (Irvine) between Jamboree and University	21.75 hours	30.0 miles	19 NAVD	32.25 hours	9 feet
Jamboree between Bison and University (Newport Beach)	22.0 hours	31.0 miles	7 NAVD	32.75 hours	2 feet

**above reference points are the closest approximate main street along plotted timeline of USACE inundation maps

NAVD = North American Vertical Datum (NAVD). In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929 it will differ to actual sea level by 71 cm or 2.3 feet. The acronym has been adopted by FEMA FIS and FIRM maps to NAVD.

Notification

The Prado Dam Emergency Action and Notification Subplan has established the following procedures for notifications.

The parties listed are to be notified immediately by the USACE Regional Emergency Operations (ROC) shift leader upon declaration of an uncontrollable emergency. Notification to include:

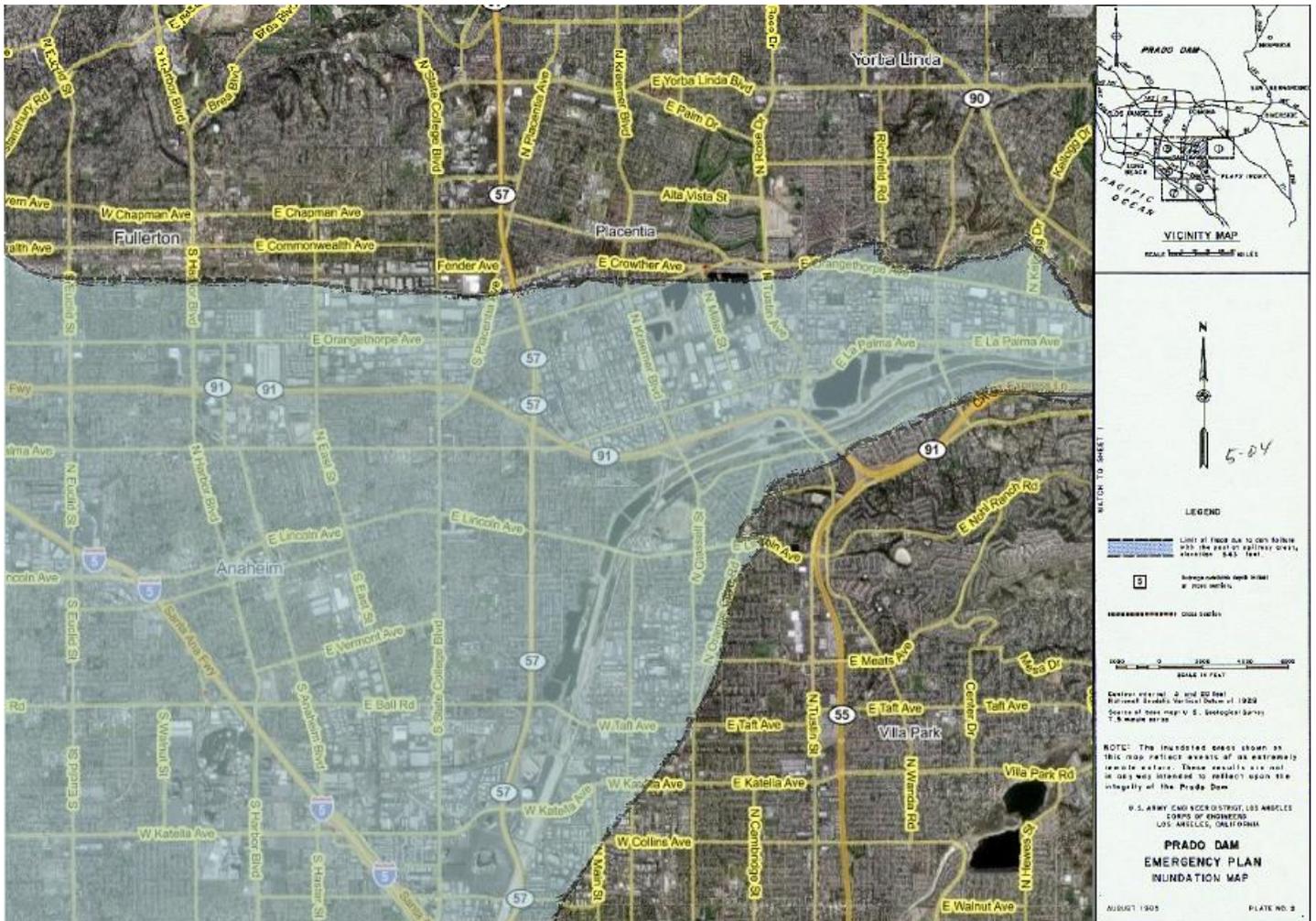
- Description of the type and extent of the emergency that exists or is impending.
- Advice regarding evacuation of people from the inundation areas.
- When the detrimental water releases began or are expected to begin.

USACE notification lists, in the following order:

1. Riverside County Emergency Services, Office of Emergency Services
2. Riverside County Fire
3. Orange County Communication Center, Control One Supervisor
4. Orange County Public Works, Operations and Maintenance
5. Orange County Public Works, Operations Manager
6. Cal OES Southern Region Operations Center, alternate is California State Warning Center
7. Cal OES Southern Region Public Information Officer, alternate is California State Warning Center

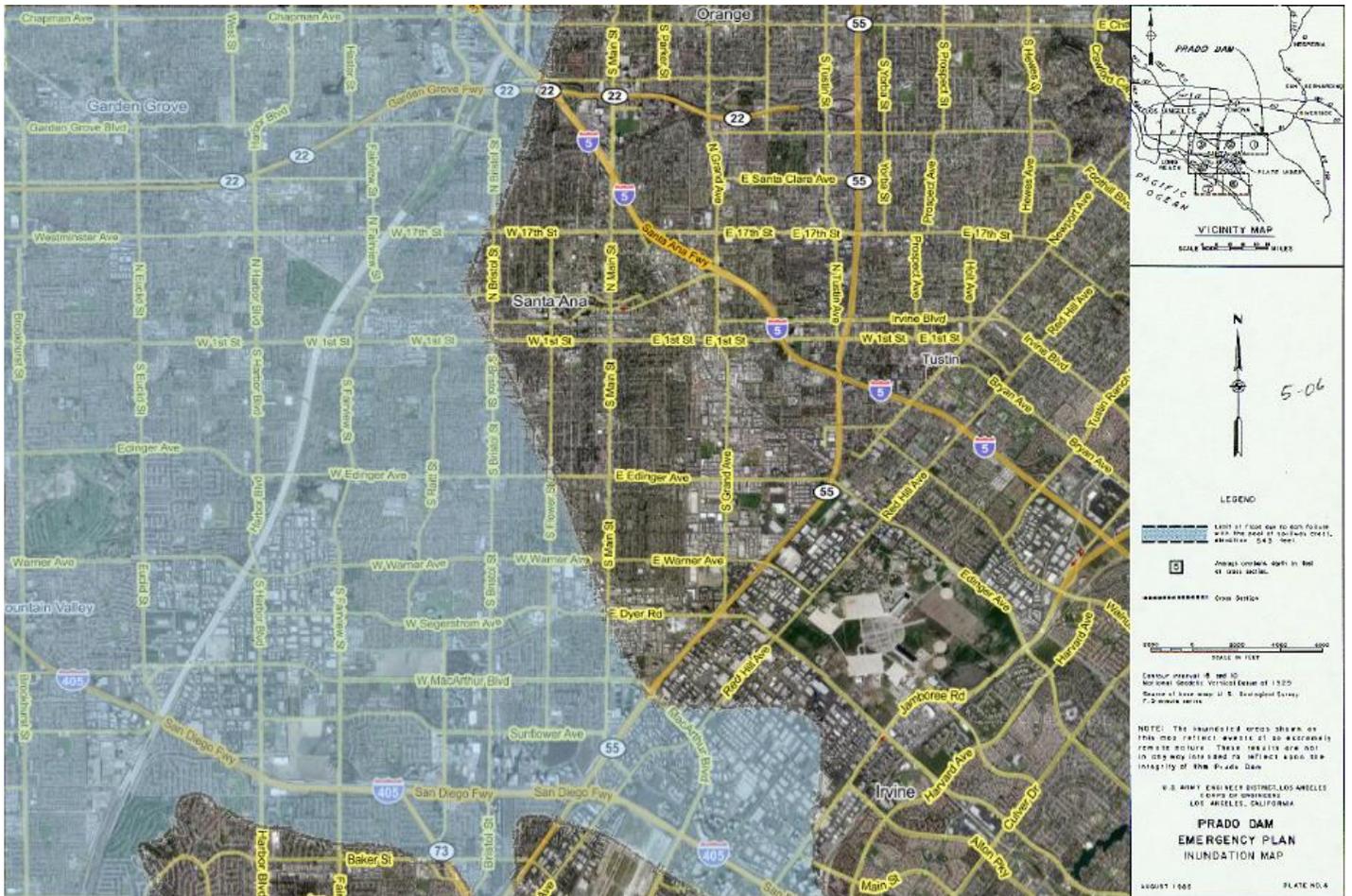
WARNING: This document is FOR OFFICIAL USE ONLY (FOUO)

It contains information that may be exempt from public release under the Freedom of Information Act (5 USC 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with USACE policy relating to FOUO information and it is not to be released to the public or other personnel who do not have valid "need to know" without prior written approval of an authorized USACE official.



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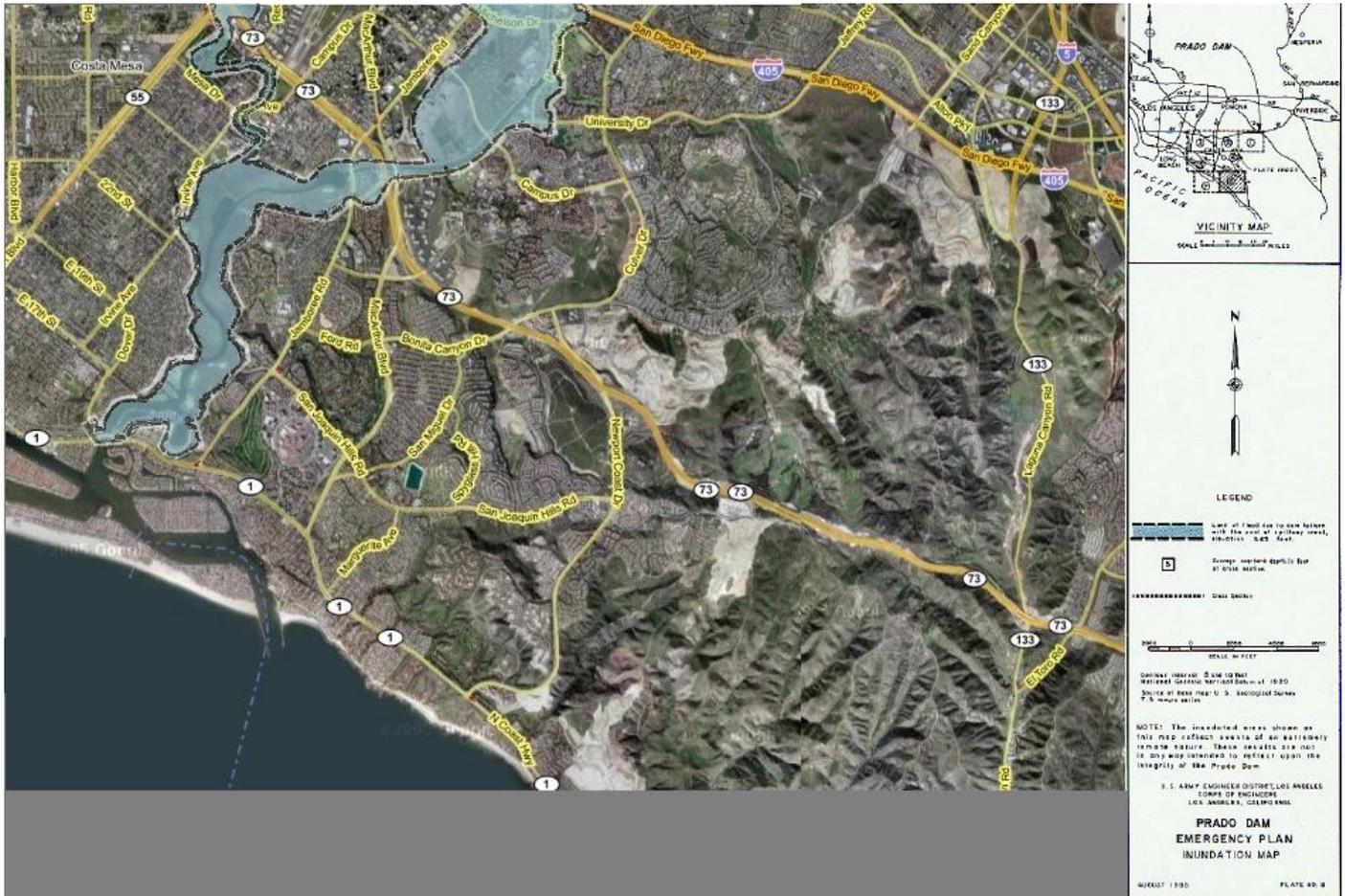
WARNING: This document is FOR OFFICIAL USE ONLY (FOUO)

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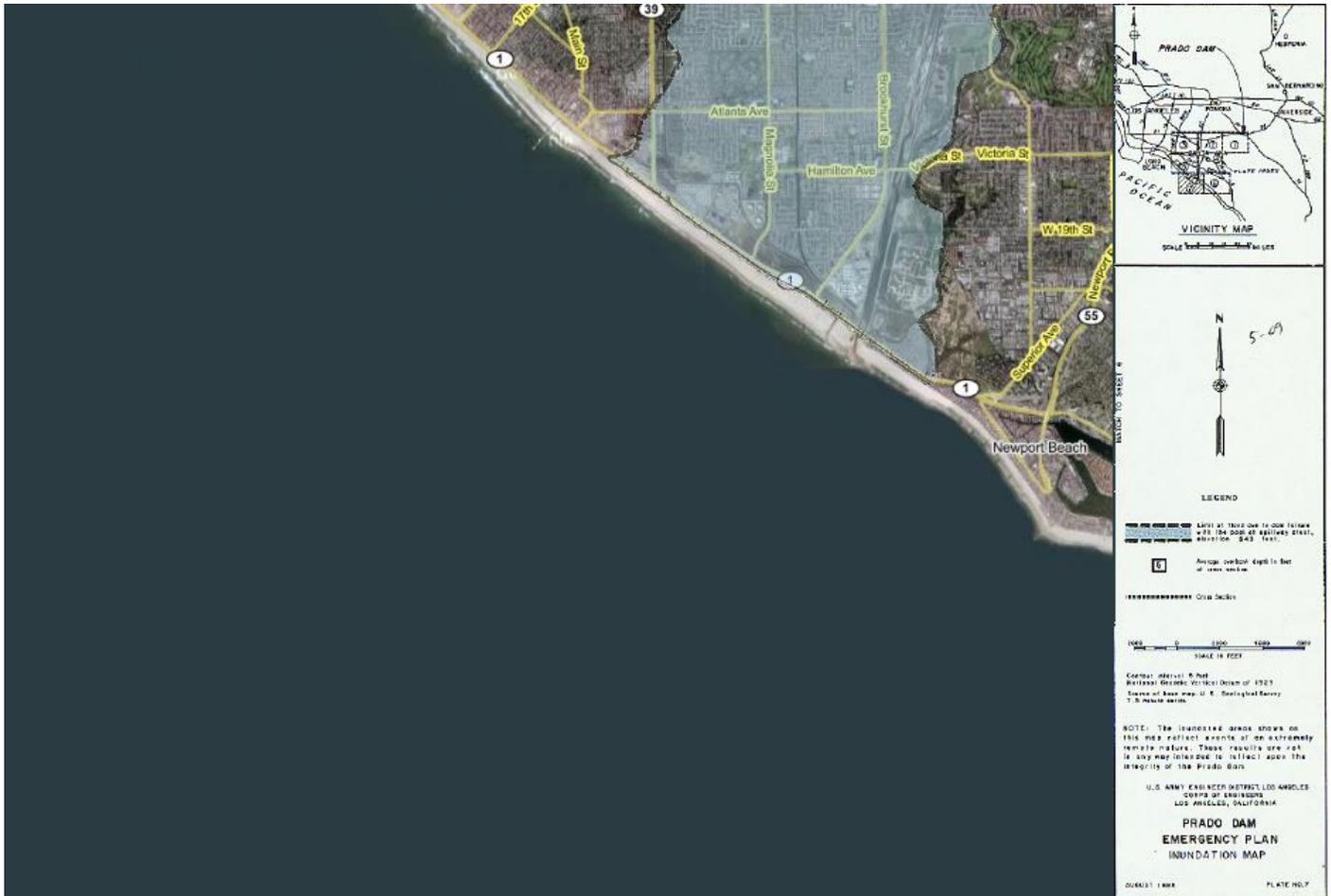
WARNING: This document is FOR OFFICIAL USE ONLY (FOUO)

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Rattlesnake Dam

Owner: Irvine Ranch Water District

California ID#: 1029-003

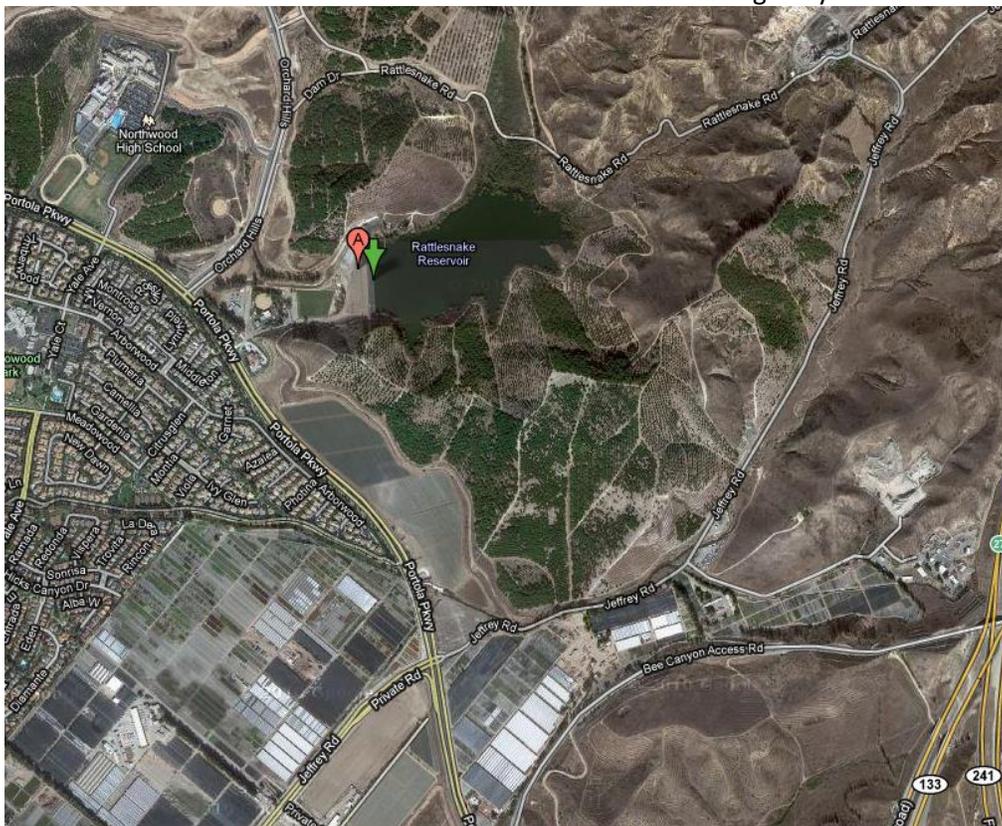
National ID#: CA00855

Rattlesnake Dam

Rattlesnake Dam is an earth-filled structure with a storage capacity of about 1,700 acre-feet with a surface area of approximately 46 acres built in 1959. The reservoir is owned by the Irvine Ranch Water District and is presently being used for the storage of pressure pipe treated sewage effluent which in turn is used for irrigation.

Dam Type	Risk Rating	Length	Height
Earth	High	980 ft	79 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
1480	2.02	60	

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Irvine Police Department	Orange County Fire Authority	City of Irvine Irvine Ranch Water District Irvine Unified School District Transportation Corridor Agency Ca Highway Patrol



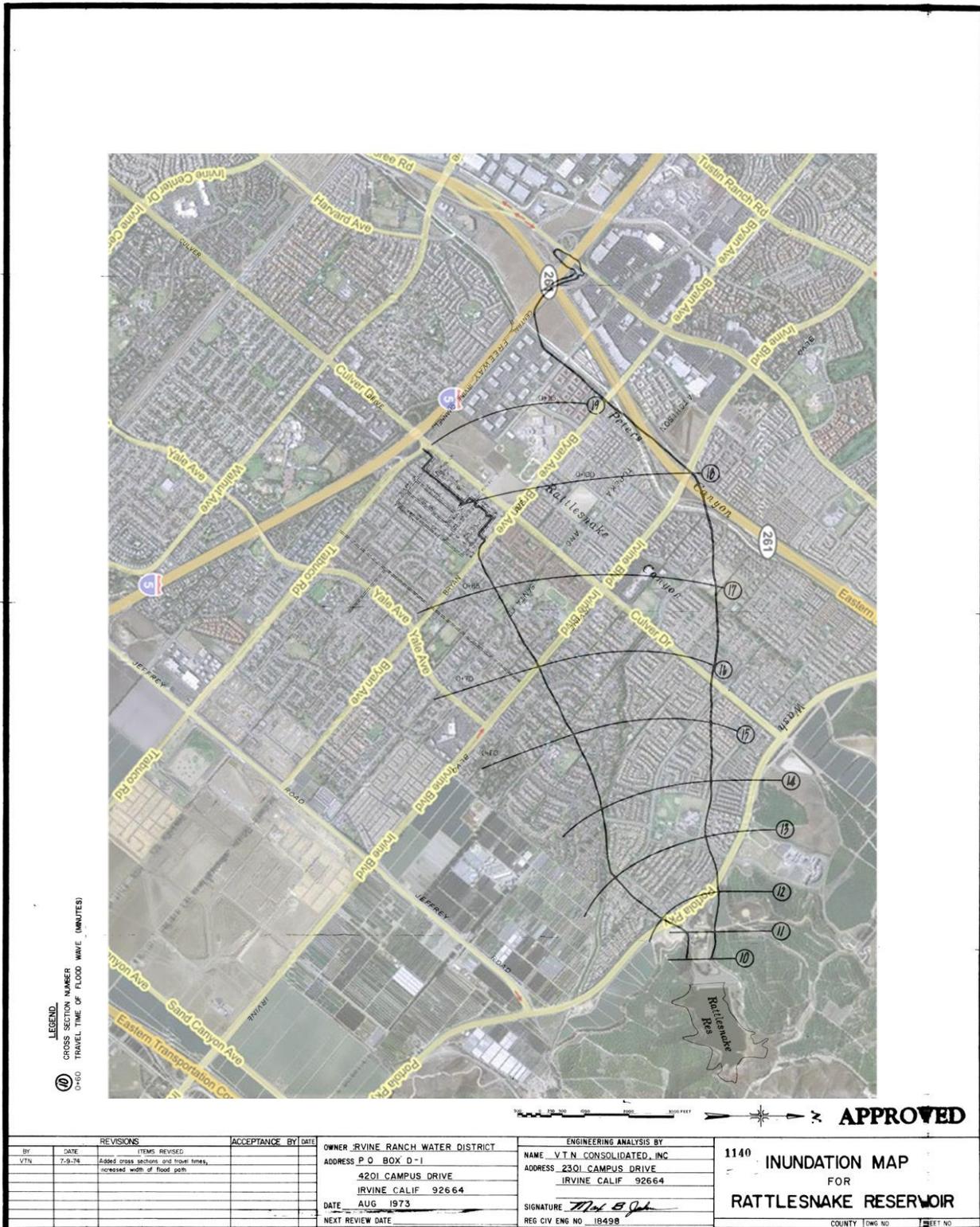
Notification

The Irvine Ranch Water District is responsible for control, coordination and notification of the Rattlesnake Dam.

Rattlesnake Water Movement Timeline

Location	Arrival Time	
East Side – Yale & Orange Arrow West Side – Culver and Meadow Wood	1 hr	<i>There is no information available regarding amount or depth of water when it reaches it arrival point.</i>
East Side – Irvine Blvd & Palo Aldo West Side – Culver north of View Park	1 hr 10 min	
East Side – Lafayette & Mayflower West Side – View Park & Central Park	1 hr 25 min	
East Side – Culver south of Bryan West Side – Irvine Blvd & 261	1 hr 40 min	
East Side – Culver & Trabuco West Side -Bryan & 261	1 hr 55 min	

**above reference points are the closest approximate *main streets* along plotted timeline of inundation maps. It is up to the city to decide small residential tract evacuation routes and plans



Rossmoor No 1

Owner: El Toro Water District

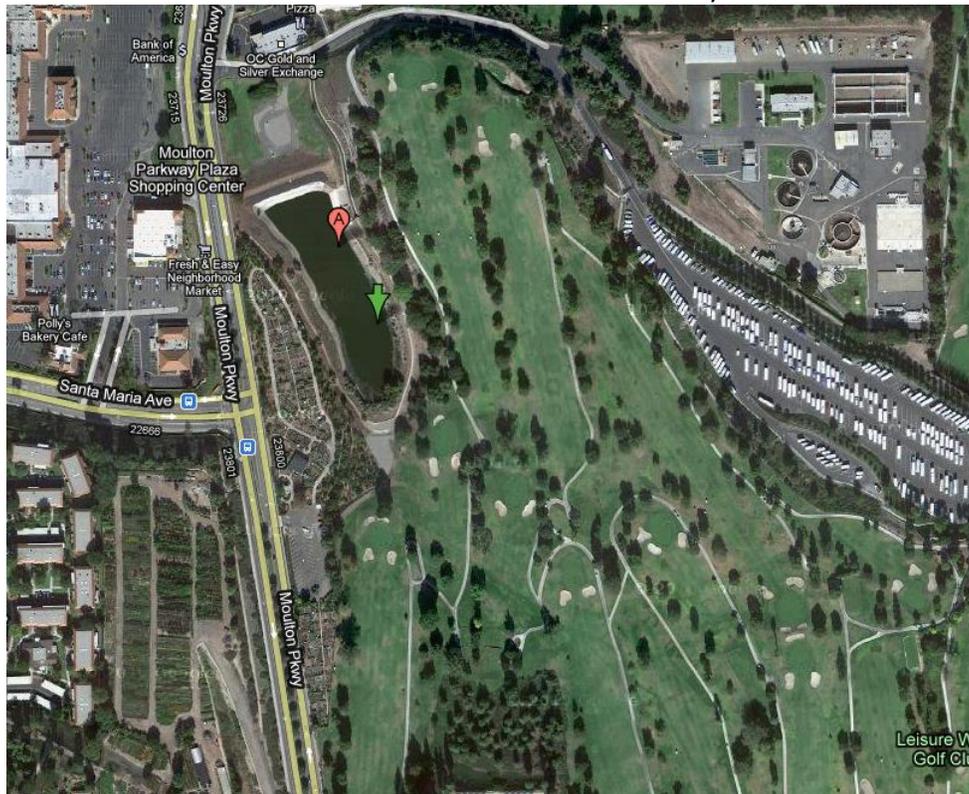
California ID#: 1041-002

National ID#: CA00753

Rossmoor No 1 Reservoir

The Rossmoor No 1 Reservoir is on a tributary of the San Diego Creek and is used for irrigation and storage. Construction was completed in 1964

Dam Type	Risk Rating	Length	Height
Earth	High	305 ft	36 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
43	0.23	3	
Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions	
Orange County Sheriff's Department	Orange County Fire Authority	City of Laguna Woods City of Lake Forest City of Irvine	



Notification

El Toro Water District is responsible for control, coordination and notifications of the Rossmoor No 1 Reservoir.

Rossmoor Retarding Basin

Owner: County of Orange

California ID#: 1012-013

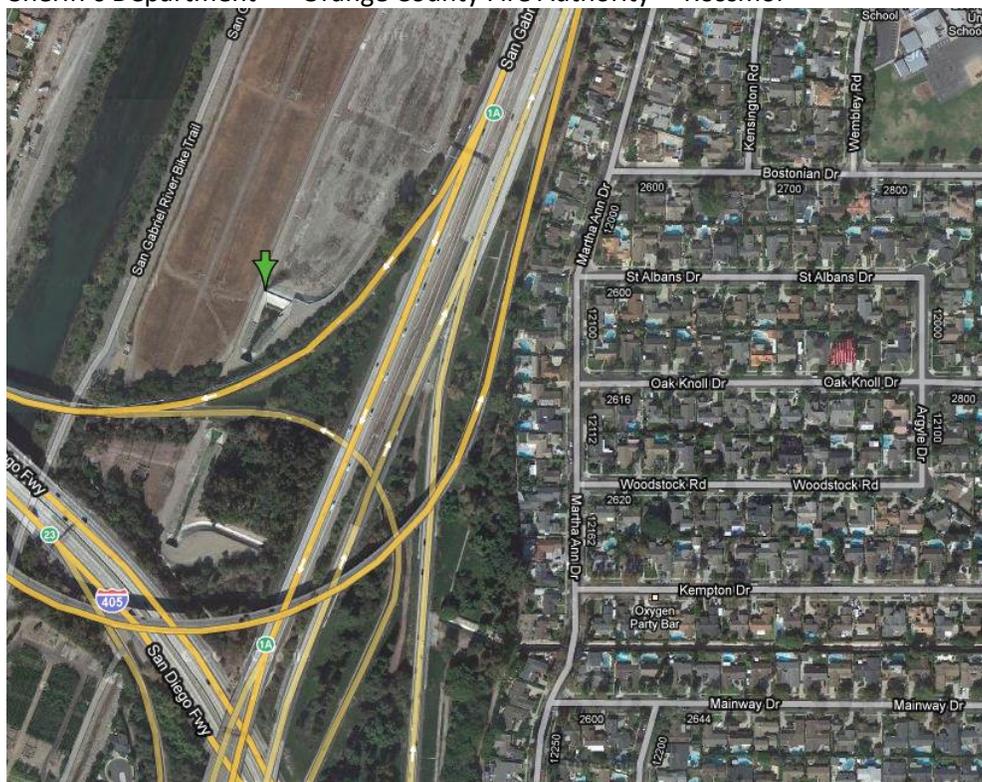
National ID#: CA01443

Rossmoor Retarding Basin

The Rossmoor Retarding Basin was built in 1983 within an area of approximately 25 acres just upstream of the I-405 Freeway and just to the east of the Coyote Creek Channel which is a major tributary to the San Gabriel River. The basin conveys runoff from several tributaries which lie generally north and east of the Los Alamitos Channel. The purpose of the basin is to provide protection for downstream developments from flood events.

In 2002, the basin was reconfigured and a pump station was constructed within the basin, pumping directly into the San Gabriel River. Regrading of the basin provided for a total basin storage capacity of approximately 175 acre-feet. Reconstruction was completed in 2002.

Dam Type	Risk Rating	Length	Height
Earth	Significant	1,460 ft	14 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
175	2.98	25	
Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions	
Orange County Sheriff's Department	Orange County Fire Authority	Rossmor	



Notification

OC Public Works is responsible for control, coordination and notifications of the Rossmoor Retarding Basin.

Round Canyon Retarding Basin

Owner: County of Orange

California ID#: 1012-010

National ID#: CA01378

Round Canyon Retarding Basin

The Round Canyon Retarding Basin is also an element of the drainage system within the Flood Control Master Plan for the San Diego Creek Watershed. It was constructed as part of the Foothill Transportation Corridor SR-241 embankment crossing the Round Canyon drainage. The purpose of the facility is to provide reduction in peak flows to the downstream channels and to reduce sediment flow to Upper Newport Bay. Construction of the basin was completed in 1994.

Dam Type	Risk Rating	Length	Height
Earth	Low	750 ft	95 ft

Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres
295	1.7	16

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sheriffs 'Department	Orange County Fire Authority	Transportation Corridor Agency Ca Highway Patrol City of Irvine



Notification

OC Public Works is responsible for control, coordination and notifications of the Round Canyon Retarding Basin.

San Joaquin Reservoir

Owner: Irvine Ranch Water District

California ID#: 1029-000

National ID#: CA00853

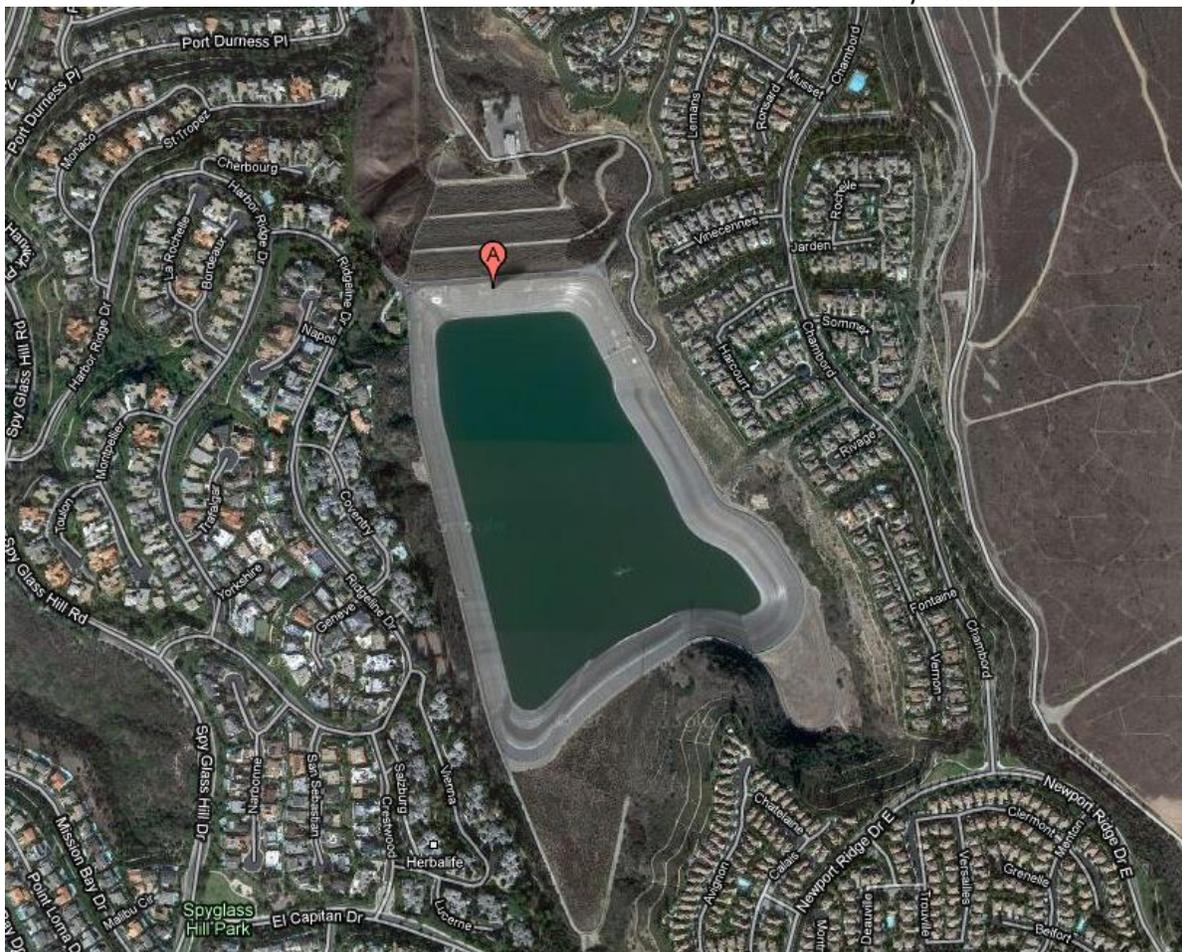
San Joaquin Reservoir

San Joaquin Reservoir is on a tributary of Bonita Creek and is used for storage and drinking water... Construction was completed in 1966.

Dam Type	Risk Rating	Length	Height
Earth	Extremely High	873 ft	224 ft

Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres
3036	0.35	50

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Newport Beach Police Department	Newport Beach Fire Department	City of Newport Beach Transportation Corridor Agency Ca Highway Patrol City of Irvine



Notification

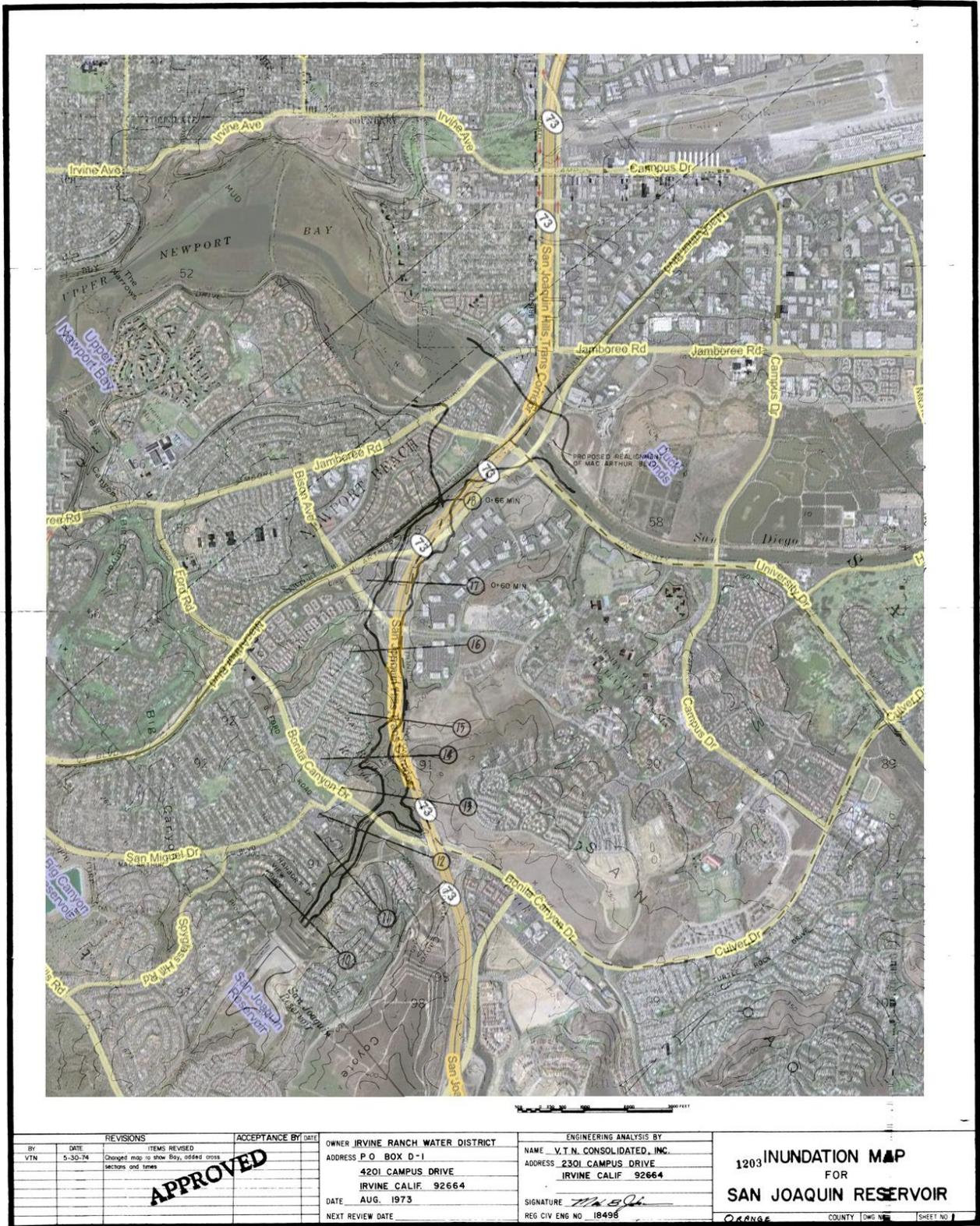
Irvine Ranch Water District is responsible for control, coordination and notifications of the San Joaquin Reservoir:

San Joaquin Reservoir Water Movement Timeline

This reservoir is situated in San Joaquin Hills in a well-defined, steep-sided canyon adjacent to the northeasterly city limits of Newport Beach. The reservoir has a storage capacity of about 3,000 acre-feet with a surface area of about 54 acres. It has been determined the peak discharge rate from the dam would be approximately 81,000 cfs and the entire reservoir would be emptied in approximately 0.9 hours (54 minutes).

Inundation Description	Arrival Time Synopsis
<p>The wash (undeveloped watercourse) would carry the bulk of the general flood flow, but there are exceptions to this. Bonita canyon Drive would be overtopped from the SR 73 to the edge of development just westerly of the watercourse. Bonita dam and Spillway would be overtopped however there is no additional hazard associated with this since the dam and spillway have been “decommissioned “ and no longer can store a significant volume of water. The San Joaquin Transportation Corridor roadway would be overtopped beginning approximately 1,000 feet southerly of the Bison Avenue over-crossing and extending northeasterly nearly one mile. About 37 acres of the residential development area westerly of the Bonita Creek channel would also be inundated over a distance of about one-half mile immediately upstream of University Drive. University Drive would also be overtopped and would be flooded underneath the SR 73 over-crossing. <i>The SR 73 will carry the bulk of the inundation with some homes affected on the west. The inundation water travel time to the San Diego Creek channel is 27 minutes and the entire reservoir would be emptied in 54 minutes.</i></p>	

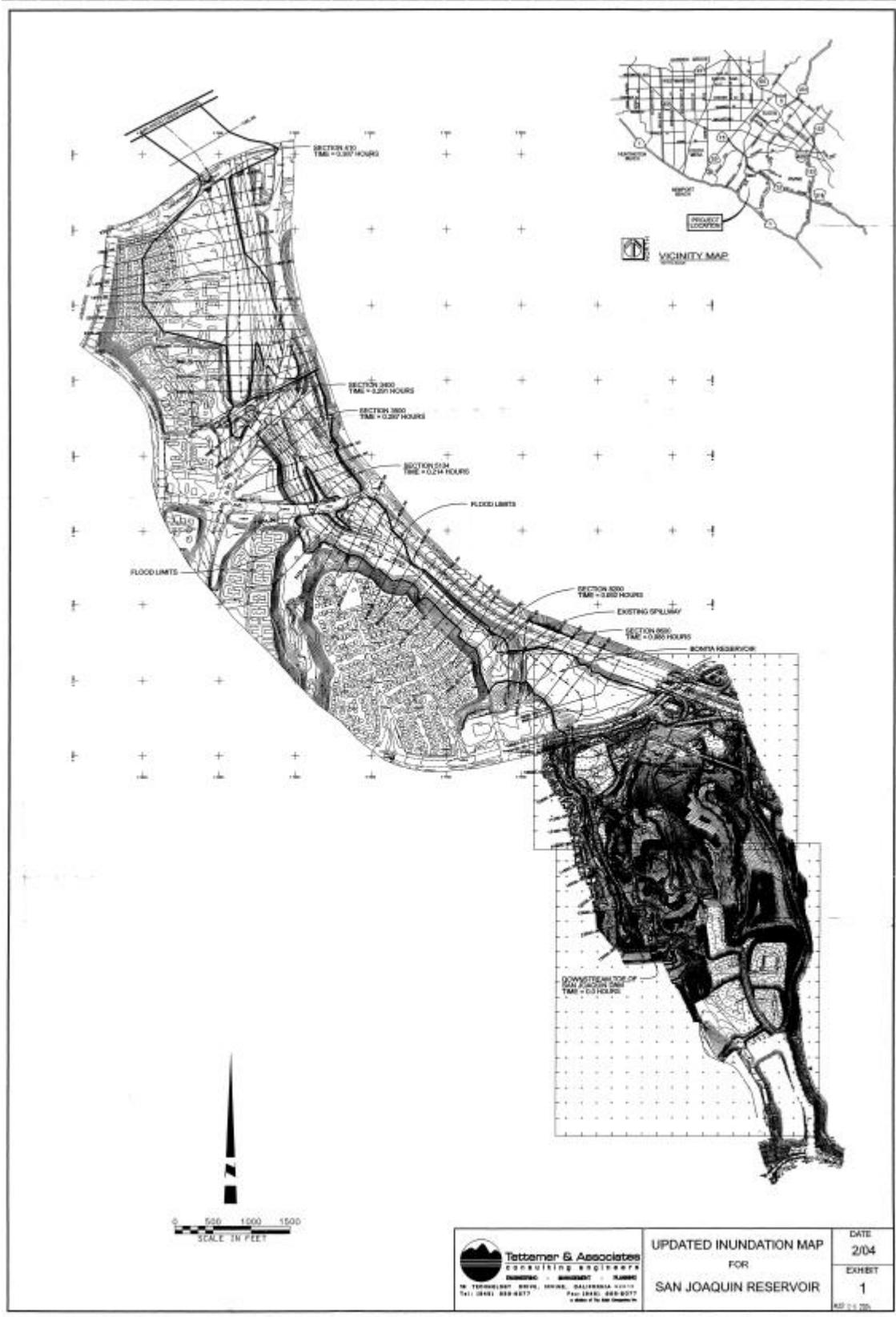
**above reference information is excerpts from the Inundation Study prepared for Irvine Ranch Water District by Tettermer and Associates, March 2004



REVISIONS		ACCEPTANCE BY	DATE	OWNER IRVINE RANCH WATER DISTRICT	ENGINEERING ANALYSIS BY
BY	DATE			ADDRESS P.O. BOX D-1	NAME V.T.N. CONSOLIDATED, INC.
				4201 CAMPUS DRIVE	ADDRESS 2301 CAMPUS DRIVE
				IRVINE CALIF. 92664	IRVINE CALIF 92664
				DATE AUG. 1973	SIGNATURE <i>V.T.N.</i>
				NEXT REVIEW DATE	REG. CIV. ENG. NO. 18496

1203 INUNDATION MAP
FOR
SAN JOAQUIN RESERVOIR
COUNTY ORANGE SHEET NO. 1

FINAL



Sand Canyon

Owner: Irvine Ranch Water District

California ID#: 1029-002

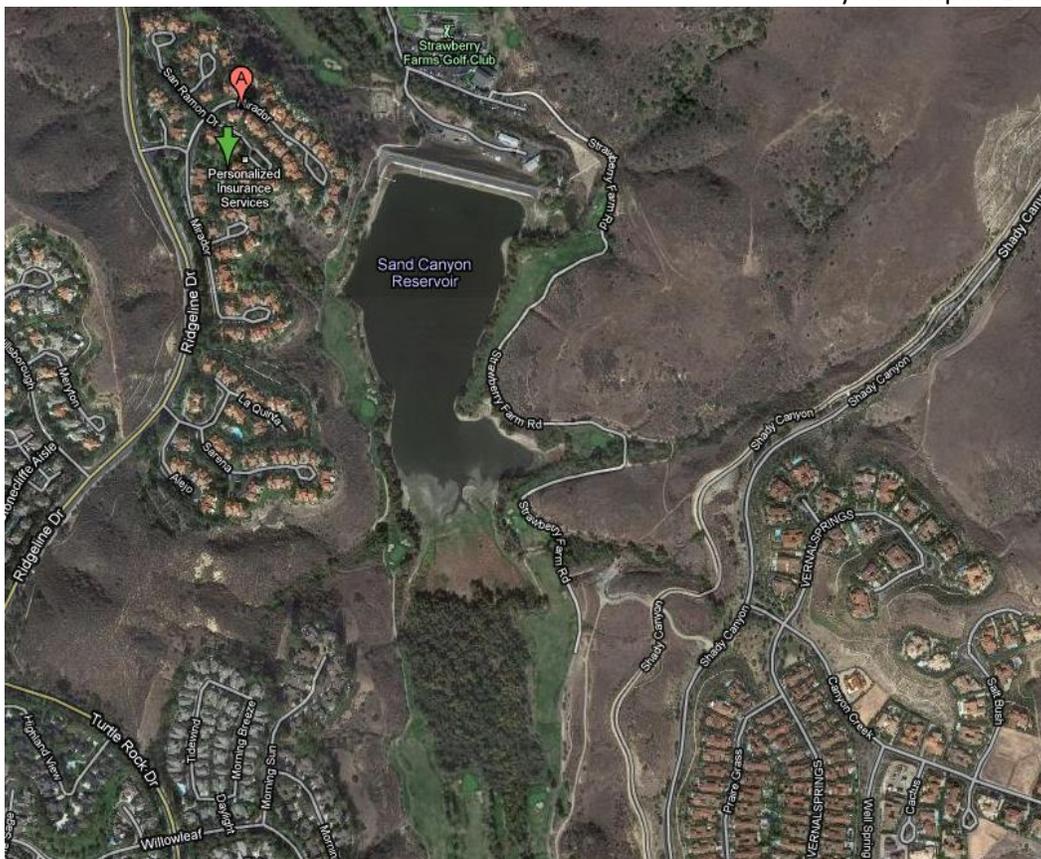
National ID#: CA00854

Sand Canyon Reservoir and Dam

Sand Canyon Reservoir is on the Sand Canyon River along the inland side on the north- central portion of the San Joaquin Hills and is used for storage, irrigation. Construction was completed in 1912.

Dam Type	Length	Height
Earth	861 ft	58 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres
960	6.76	51

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Irvine Police Department	Orange County Fire Authority	City of Irvine OC Parks City of Newport Beach



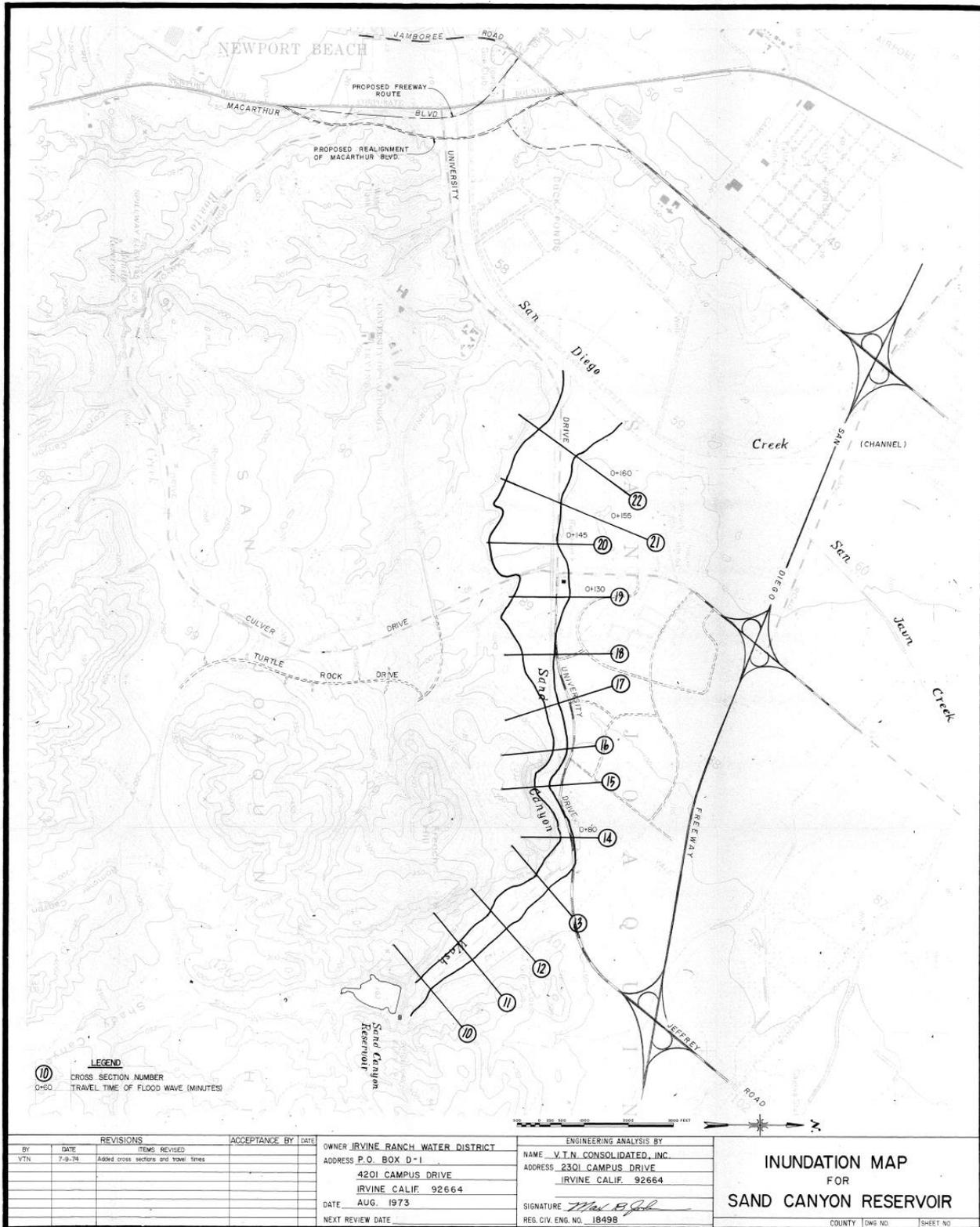
Notification

Irvine Ranch Water District is responsible for control, coordination and notification of the Sand Canyon Reservoir and Dam.

Water Movement Information

The discharge from Sand Canyon Dam was routed approximately 15,000 feet to San Diego Creek which has sufficient capacity to contain the flow. The inundated area indicated on the accompanying Inundation map represents the limits of the floodway at the routed peak discharge from the dam.

The route of the flood will be generally along Sand Canyon Wash through Mason Regional Park to the San Diego Creek Channel. The roadway crossings at Culver Drive and University Drive constrict the flow and have been assumed to be washed out prior to peak discharge making them unavailable for evacuation routes. The levy of San Diego Creek is graded open to the San Canyon Wash, and would be expanded through erosion to permit entry of flood waters. Should failure occur of the magnitude discussed, the Methodist Church at University and Culver Drives would be within the inundated areas.



Santiago Reservoir (Irvine Lake)

Owner: Serrano and Irvine Ranch Water District

California ID#: 0075-000

National ID#: CA00298

Santiago Reservoir and Dam

Santiago Reservoir and Dam is an earth filled structure with an approximate capacity of 25,000 acre-feet and is owned by the Serrano Water District (SWD) and Irvine Ranch Water District (IRWD) and was completed in April 1933. Santiago Reservoir provides raw potable water storage for SWD and IRWD it is located upstream of Villa Park Dam in Santiago Canyon.

Dam Type	Risk Rating	Length	Height
Earth	Extremely High	1425 ft	136 ft

Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres
25000	63.1	650

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sheriff's Department	Orange County Fire Authority	OC Parks Transportation Corridor Agency City of Orange City of Villa Park City of Tustin City of Irvine Ca Highway Patrol



Notification

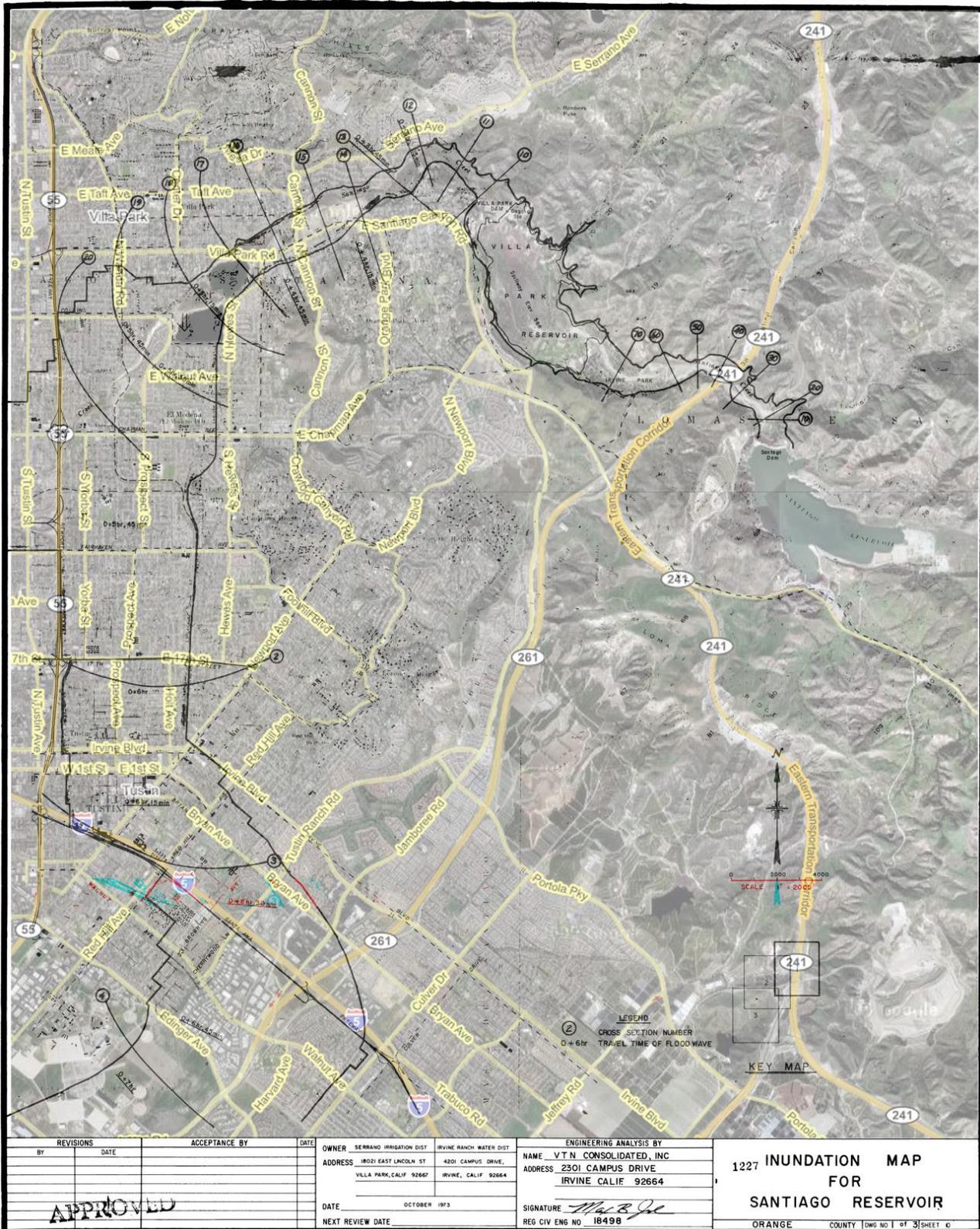
Serrano and Irvine Ranch Water Districts are responsible for control, coordination and notifications of the Santiago Reservoir.

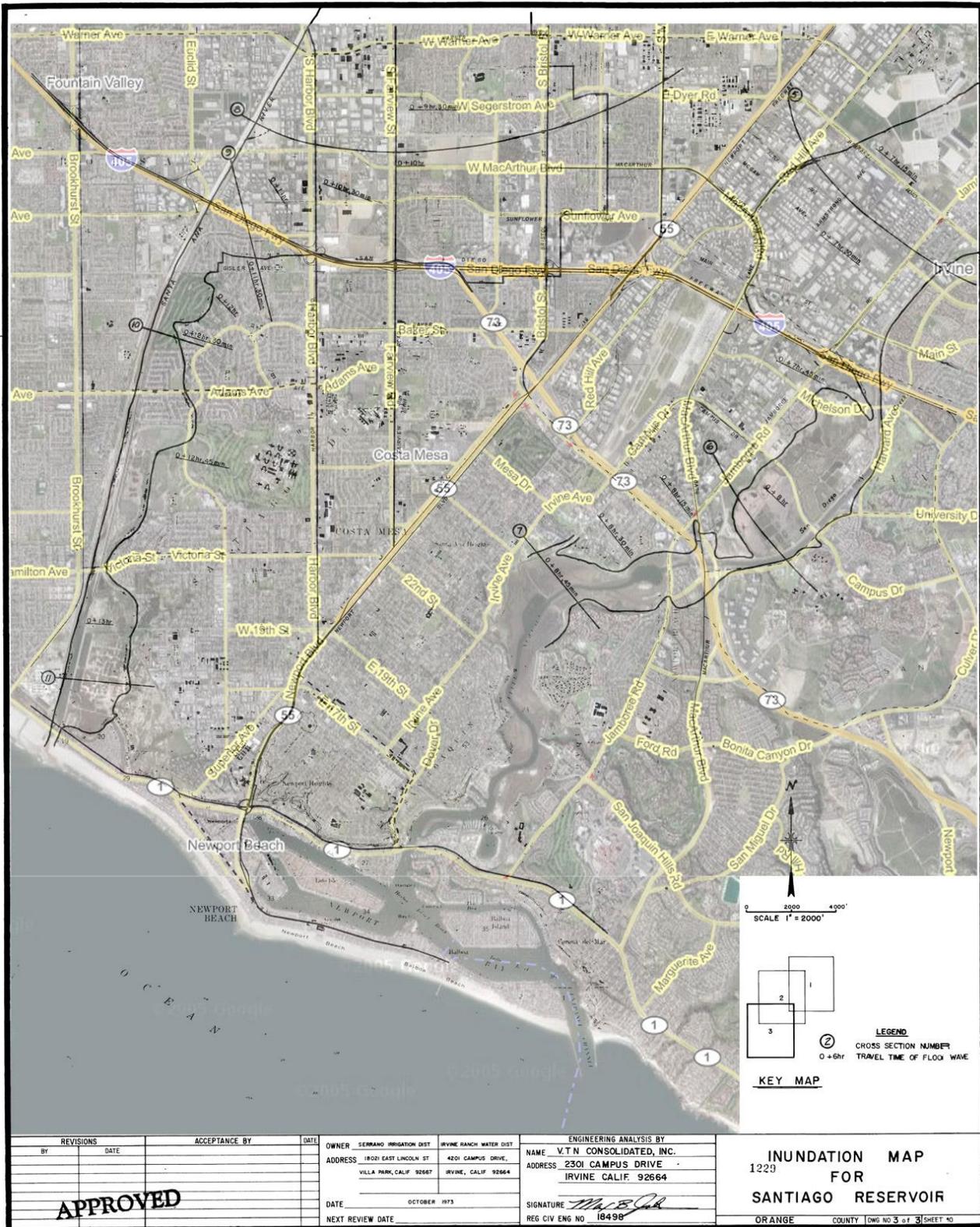
Santiago Reservoir Water Movement Timeline

Location	Arrival Time	
Santiago Canyon & Orange Park Blvd	4 hrs 15 min	There is no other data available to provide depth and peak elevation numbers
Villa Park Rd & Hewes	4 hrs 45 min	
North of Collins & Prospect	5 hrs 15 min	
South of Collins & Prospect	5 hrs 45 min	
55 Freeway & 17 th street	6 hrs	
Santa Ana River Channel Fork:		
22 Freeway & Cambridge	6 hrs 30 min	
22 Freeway & Main Street	7 hrs	
17 th & Bristol	7 hrs 30 min	
1 st Street	8 hrs	
Between Edinger & Warner	9 hrs	
MacArthur	10 hrs	
Sunflower	10 hrs 30 min	
Gisler	12 hrs	
Just north of Adams	12 hrs 30 min	
Victoria	13 hrs	
San Diego Creek Channel Fork:		
Newport Ave & Bryan Ave	6 hrs 15 min	
261 Toll Road & Edinger	6 hrs 45 min	
Old Tustin USMC base	7 hrs	
Red Hill & Alton Pkwy	7 hrs 15 min	
405 Freeway	7 hrs 45 min	
South of Campus Drive	8 hrs	
73 Toll Road	8 hrs 15 min	
East side of Irvine Ave & Santa Isabel	8 hrs 45 min	

**above reference points are the closest approximate main street along plotted timeline of OCPW inundation maps

NAVD = North American Vertical Datum (NAVD). In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929 it will differ to actual sea level by 71 cm or 2.3 feet. The acronym has been adopted by FEMA FIS and FIRM maps to NAVD.





REVISIONS		ACCEPTANCE BY	DATE
BY	DATE		

OWNER	SERRANO IRRIGATION DIST	IRVINE RANCH WATER DIST
ADDRESS	18201 EAST LINCOLN ST	4201 CAMPUS DRIVE,
	VILLA PARK, CALIF 92687	IRVINE, CALIF 92664
DATE	OCTOBER 1973	
NEXT REVIEW DATE		

ENGINEERING ANALYSIS BY	NAME	V.T.N CONSOLIDATED, INC.
	ADDRESS	2301 CAMPUS DRIVE
		IRVINE CALIF 92664
SIGNATURE	<i>M. B. Oja</i>	
REG CIV ENG NO	18498	

INUNDATION MAP
FOR
SANTIAGO RESERVOIR

ORANGE COUNTY DWG NO 3 of 3 SHEET NO

APPROVED

Sulphur Creek Dam

Owner: County of Orange
California ID#: 1012-007
National ID#: CA00873

Sulphur Creek Dam

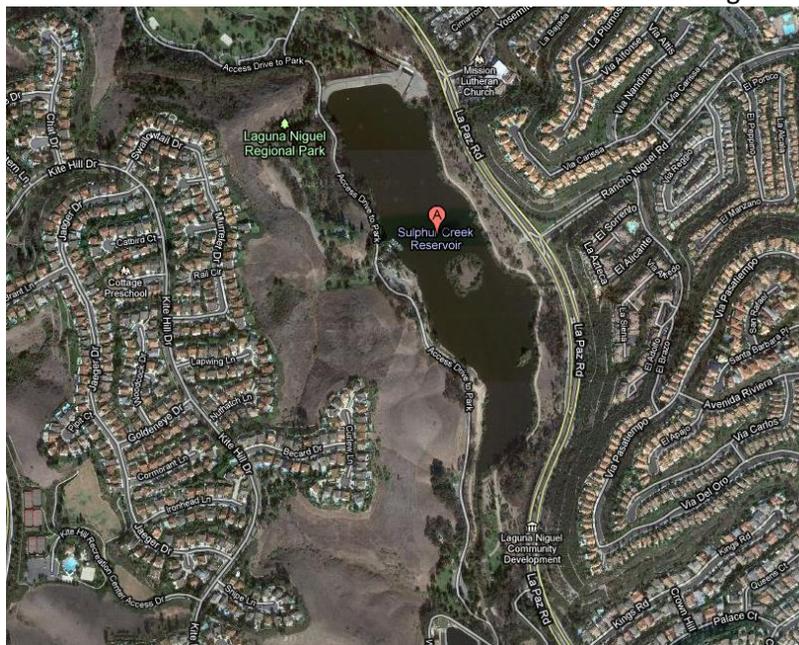
The Sulphur Creek Dam and Reservoir is located within the Laguna Niguel Regional Park and receives runoff from the drainage area located in the Niguel Hills. The dam was constructed for the Orange County Sanitation District No. 12 (now Moulton-Niguel Water District, MNWD) in 1965 to provide storage for reclaimed water. In 1970, the Orange County Flood Control District (OCFCD) and the County of Orange entered into a lease agreement with MNWD for use of the dam and reservoir for flood control, water conservation, and recreation purposes for a term of 25 years with option to purchase.

In 1994, the dam and reservoir was deeded by MNWD to OCFCD and the County of Orange in fee: the portion of parcel that includes the dam and spillway structures to OCFCD and the rest to the County of Orange (OC Parks), with OCFCD having a flowage easement and right-of-way for flood control and water conservation purposes.

Dam Type	Risk Rating	Length	Height
Earth	High	485 ft	42 ft

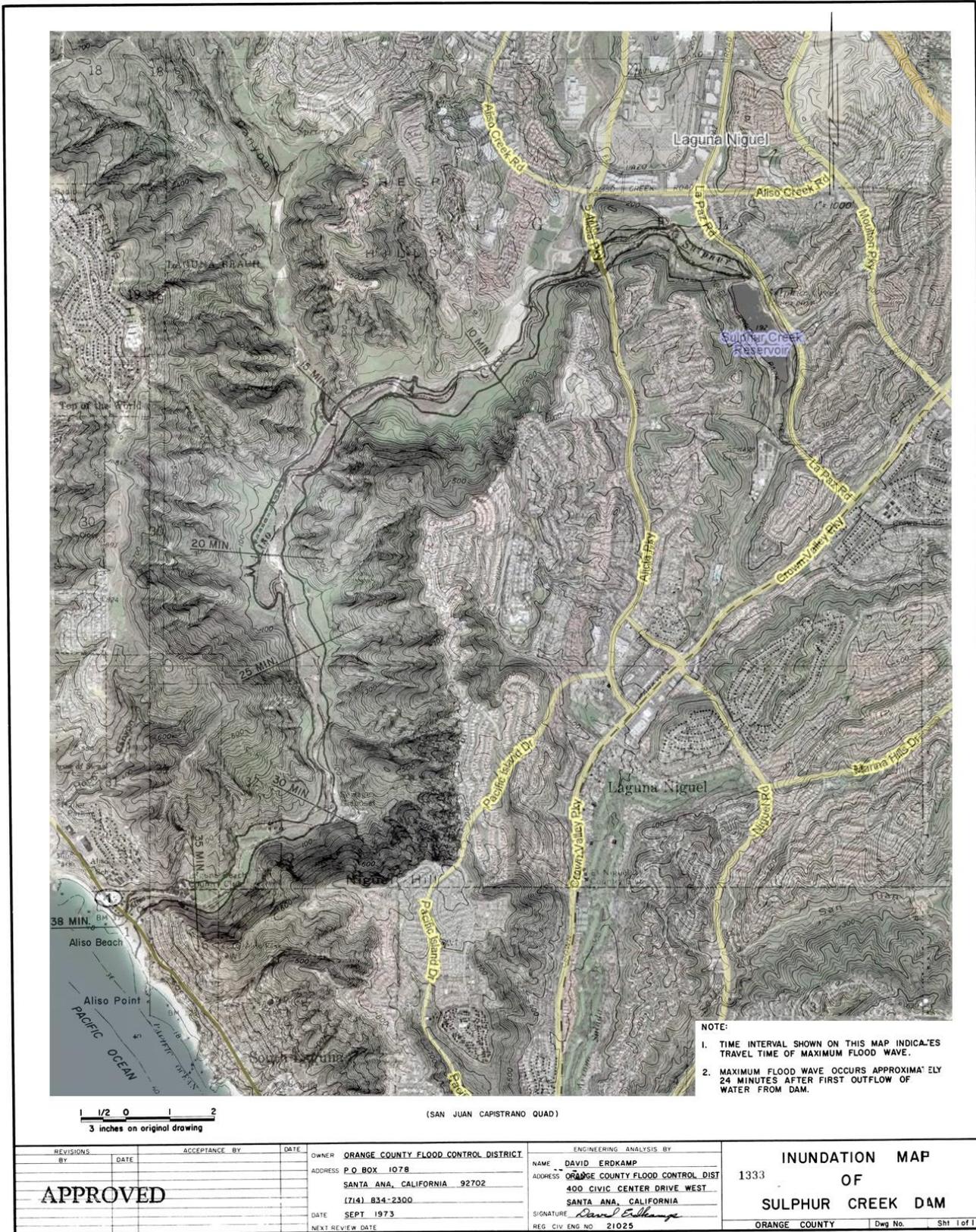
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres
520	4.9	40

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sheriff’s Department	Orange County Fire Authority	City of Laguna Niguel OC Parks South Orange County Water District



Notification

OC Public Works is responsible for the control, coordination and notifications of the Sulphur Creek Dam and Reservoir.



Syphon Canyon Dam

Owner: The Irvine Company

California ID#: 0793-009

National ID#: CA00749

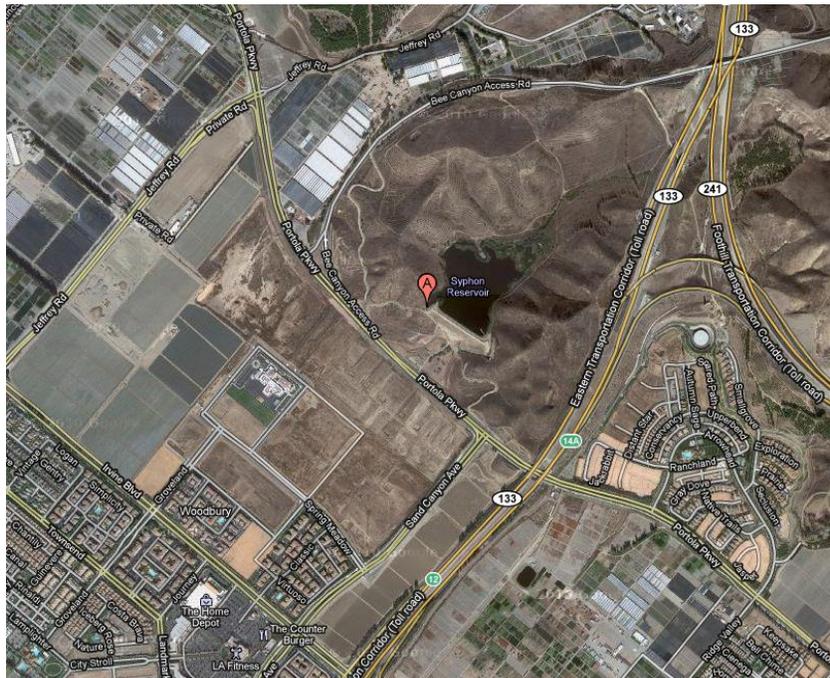
Syphon Canyon Dam

Syphon Canyon Dam is on a tributary of Newport Bay and is used for irrigation purposes. Construction was completed in 1949.

Dam Type	Risk Rating	Length	Height
Earth	High	843 ft	59 ft

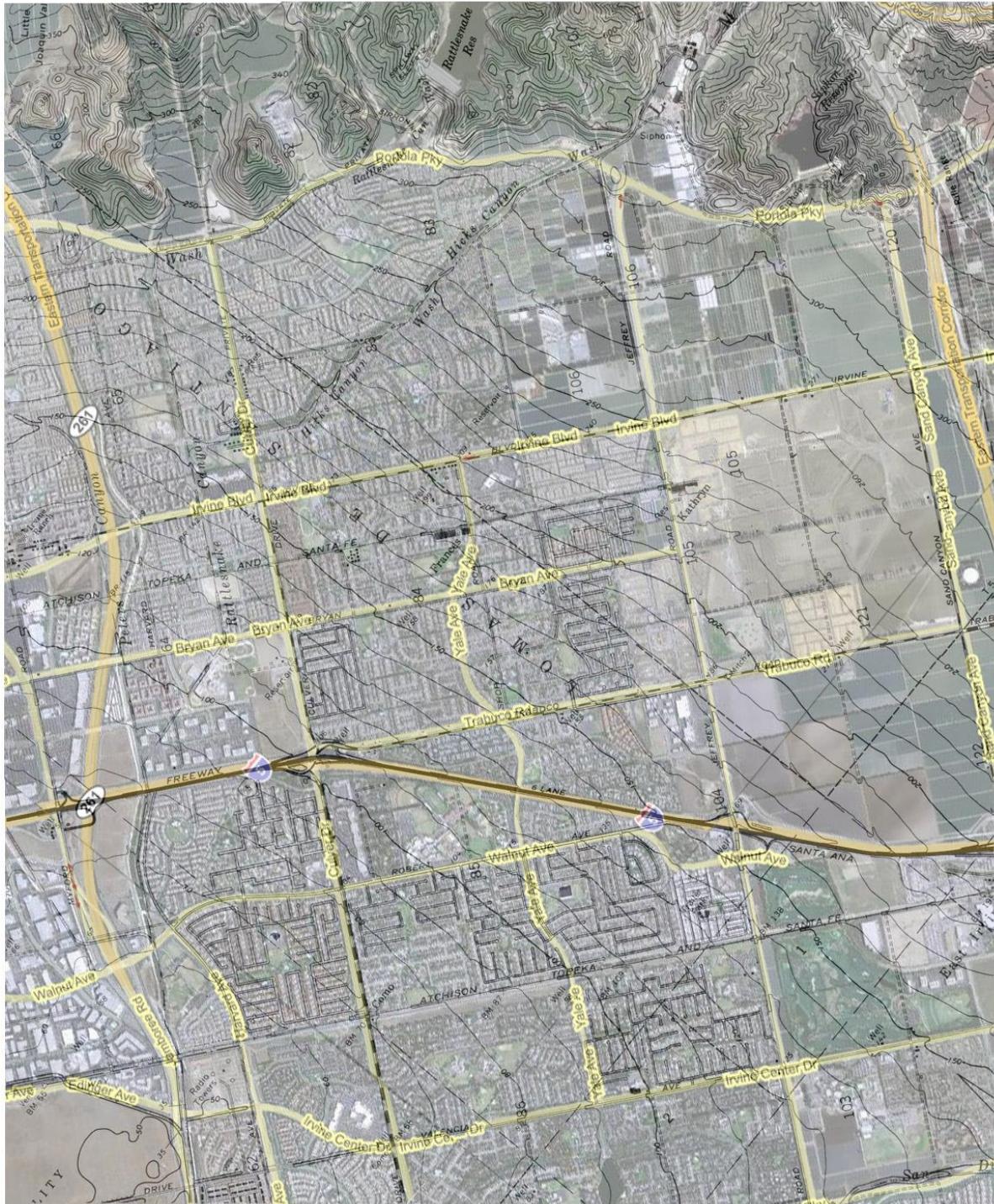
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres
500	0.29	27

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Irvine Police Department	Orange County Fire Authority	City of Irvine Crean Lutheran High School Transportation Corridor Agency Ca Highway Patrol Irvine Unified School District



Notification

The Irvine Company is responsible for control, coordination and notifications of the Syphon Canyon Dam.



OWNER: THE IRVINE COMPANY
ADDRESS: 550 NEWPORT CENTER DRIVE
NEWPORT BEACH
CA. 92660
DATE: JUNE 1983

ENGINEERING ANALYSIS BY:
Boule Engineering Corporation
1501 Quail Street
P.O. Box 3030
Newport Beach, California 92663
714 / 752-0505
SIGNATURE: _____
REG. CIVIL ENGR. NO. _____

ORANGE COUNTY
DRW REGISTRY NO. 793-009
ACCEPTED BY: _____

INUNDATION MAP OF
SYPHON CANYON DAM
1398
DRAWING NO. _____
SHEET NO. 1 OF 1
APPROVED
OCT 26 1983
California C-102 of

Trabuco

Owner: Trabuco Canyon Water District

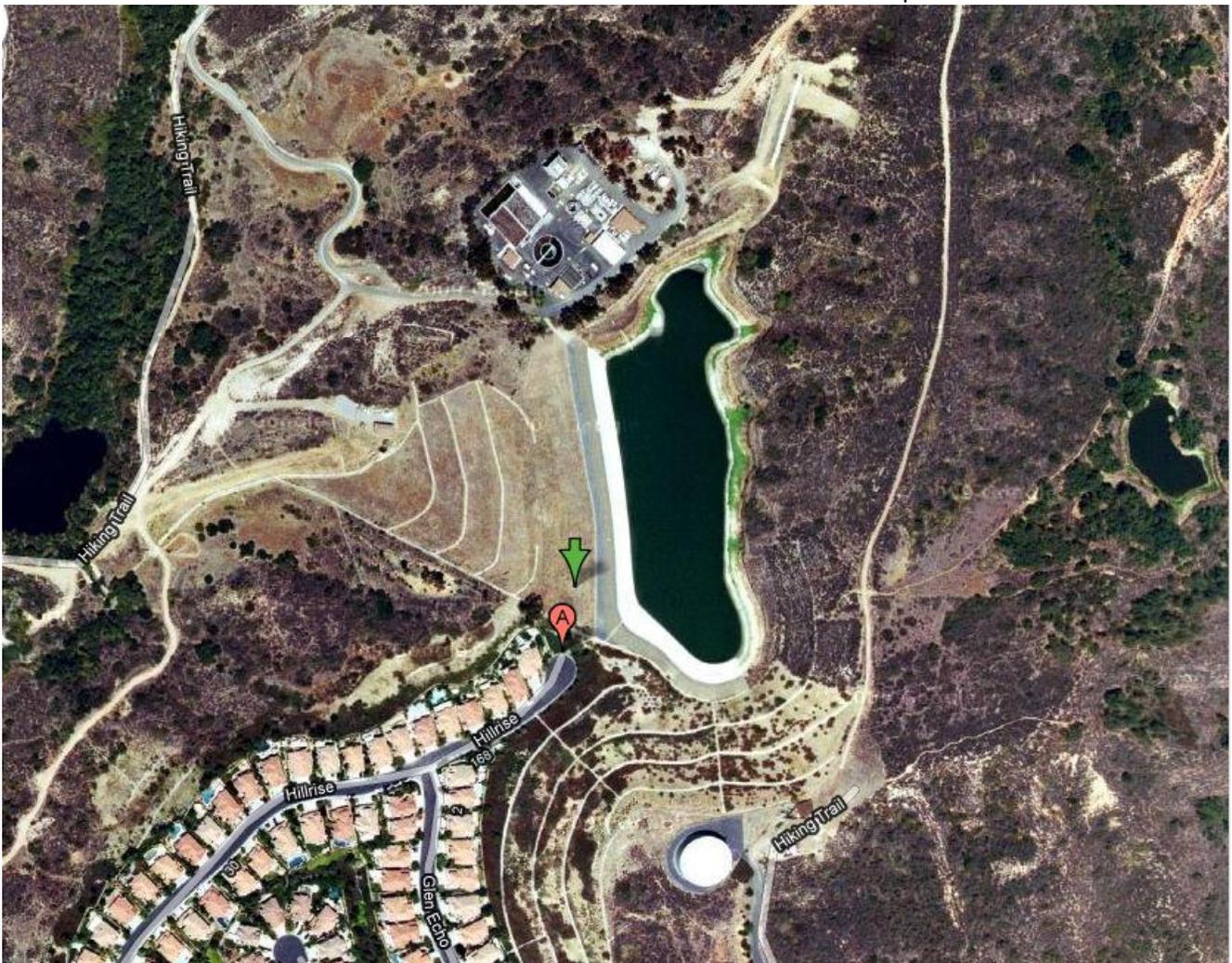
California ID#: 2030-002

National ID#: CA01241

Trabuco Dam

Trabuco Dam is on a tributary of Dove Creek and is used for irrigation, storage. Construction was completed in 1984.

Dam Type	Risk Rating	Length	Height
Earth	High	620 ft	108 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
138	0.05	5	
Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions	
Orange County Sheriff's Department	Orange County Fire Authority	Dove Canyon Capistrano Unified School District	



Notification

Trabuco Canyon Water District is responsible for control, coordination and notification of Trabuco Dam.

Trabuco Retarding Basin

Owner: County of Orange

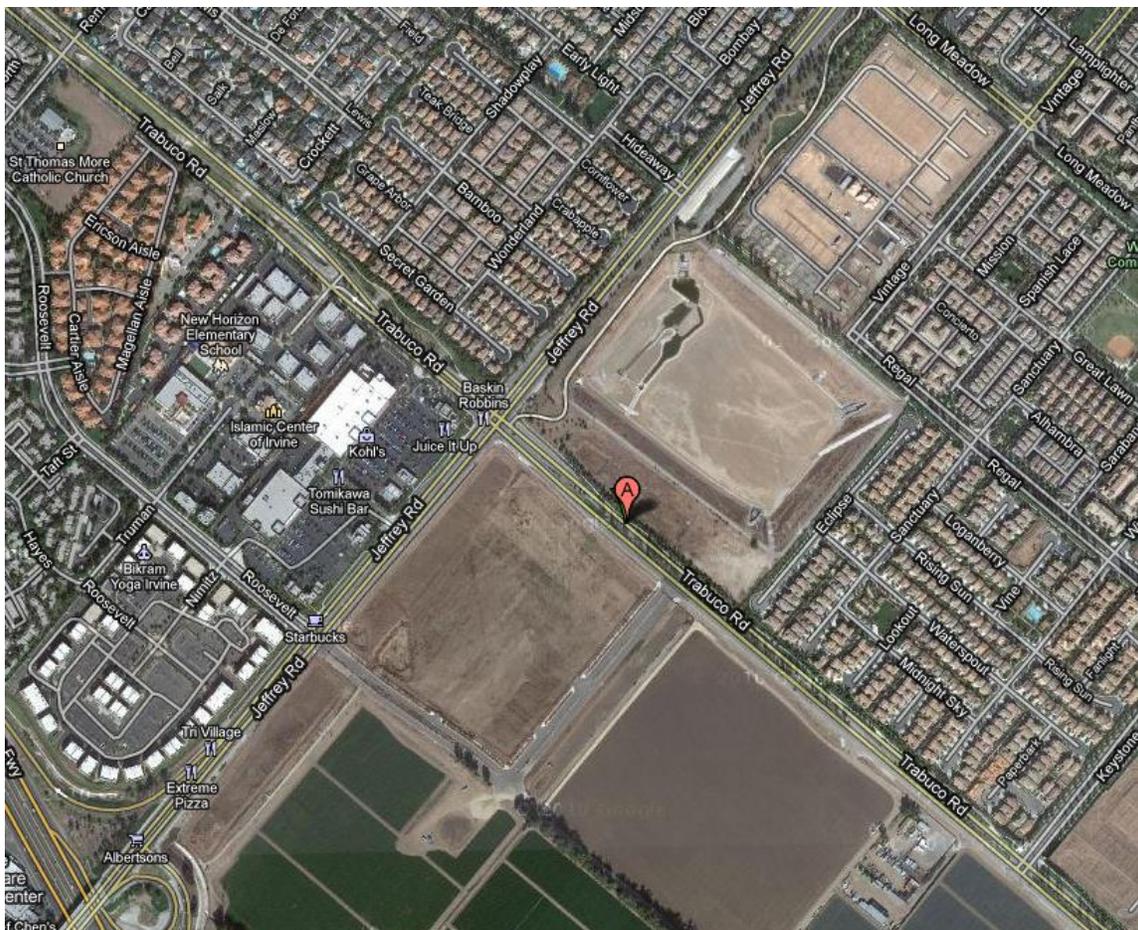
California ID#: 1012-008

National ID#: CA01399

Trabuco Retarding Basin

Trabuco Retarding Basin is on San Diego Creek and is used for flood control. Construction was completed in 1996.

Dam Type	Risk Rating	Length	Height
Earth	High	2250 ft	18 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
269	2.9	22	
Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions	
Irvine Police Department	Orange County Fire Authority	City of Irvine Irvine Unified School District	



Notification

OC Public Works is responsible for control, coordination and notification of Trabuco Retarding Basin.

Trampas Canyon

Owner: Oglebay Norton Industrial Sands

California ID#: 1795-006

National ID#: CA01123

Trampas Canyon Dam

Trampas Canyon Dam is on Trampas Canyon, which is a tributary of San Juan Creek and its uses are for storage, diversion and industrial. Construction was completed in 1975.

Dam Type	Risk Rating	Length	Height
Earth	Extremely High	1330 ft	183 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
5700	0.91	96	

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sheriff's Department	Orange County Fire Authority	Ca Highway Patrol City of San Juan Capistrano



Notification

The Oglebay Norton Industrial Sands is responsible for control, coordination and notifications of the Trampas Canyon Dam.



REVISIONS	ACCEPTANCE BY	DATE
BY		
DATE		

OWNER: OWENS - ILLINDIS, INC
 ADDRESS: P.O. BOX 248
 SAN JUAN CAPISTRANO
 CALIFORNIA 92675
 DATE: 1/3/77
 NEXT REVIEW DATE:

ENGINEERING ANALYSIS BY
 NAME: HARDING - LAWSON ASSOCIATES
 ADDRESS: P.O. BOX 3030
 SAN RAFAEL
 CALIFORNIA 94902
 SIGNATURE: *Keith H. Bergman*
 REG. CIV. ENG. NO. C-5005

APPROVED

INUNDATION MAP
 1428
 OF *FNRL* 4-21-77
TRAMPAS CANYON DAM
 ORANGE COUNTY DWG NO. 1 SHEET NO.

Upper Chiquita Reservoir

Owner: Santa Margarita Water District

California ID#: 2013-3

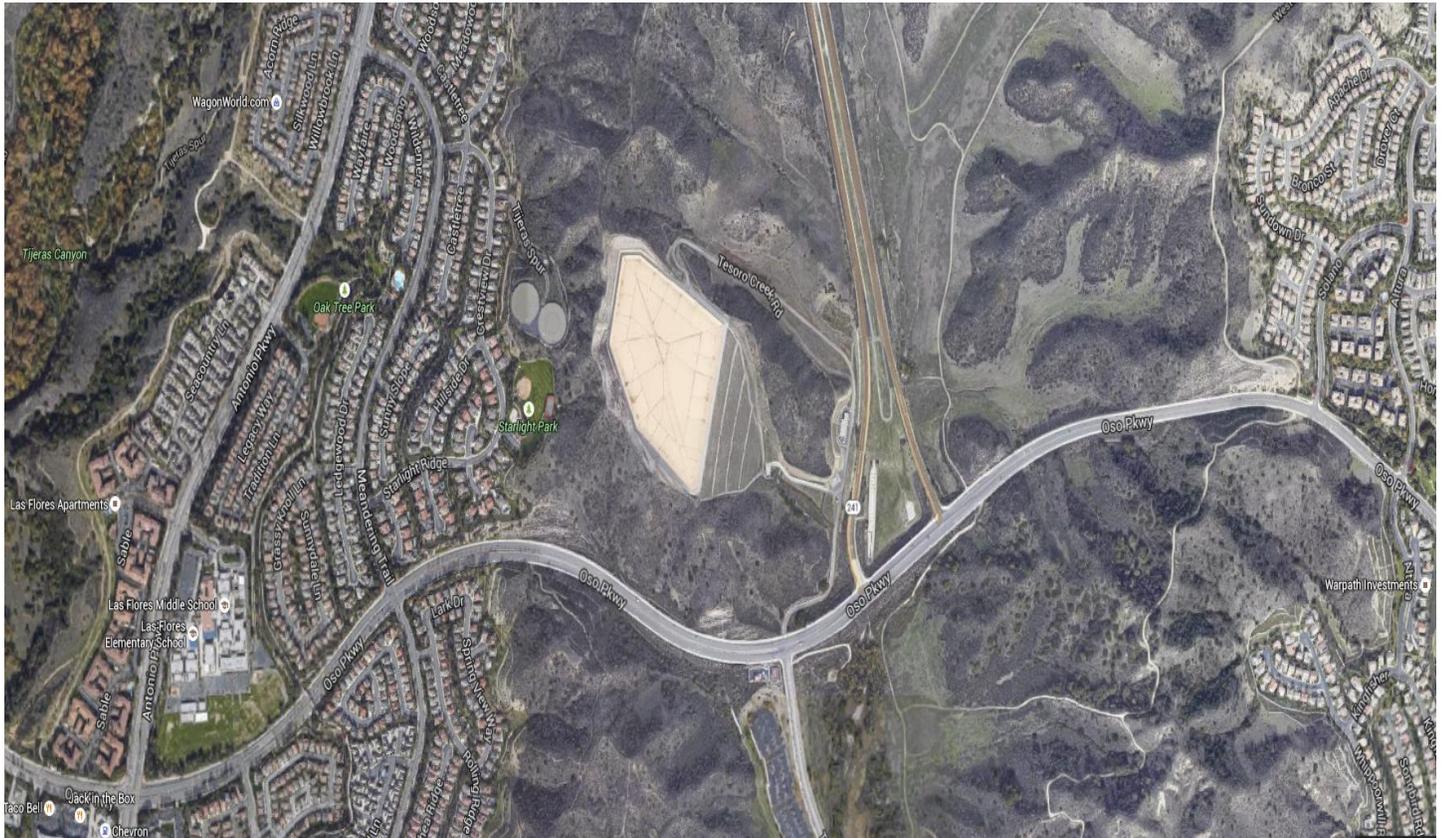
National ID#: CA01553

Upper Chiquita Reservoir

The Upper Chiquita Reservoir earth filled structure owned by the Santa Margarita Water District (SMWD) and was completed in 2012. Upper Chiquita Reservoir provides emergency storage.

Dam Type	Risk Rating	Length	Height
Earth	Extremely High	965 ft	177.2 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
753.5	0.035	15.65	

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sheriff's Department	Orange County Fire Authority	Ca Highway Patrol Transportation Corridor Agency Capistrano Unified School District



Notification

The Santa Margarita Water District is responsible for control, coordination and notifications of the Upper Chiquita Reservoir.

Upper Oso Reservoir

Owner: Santa Margarita Water District

California ID#: 2013-000

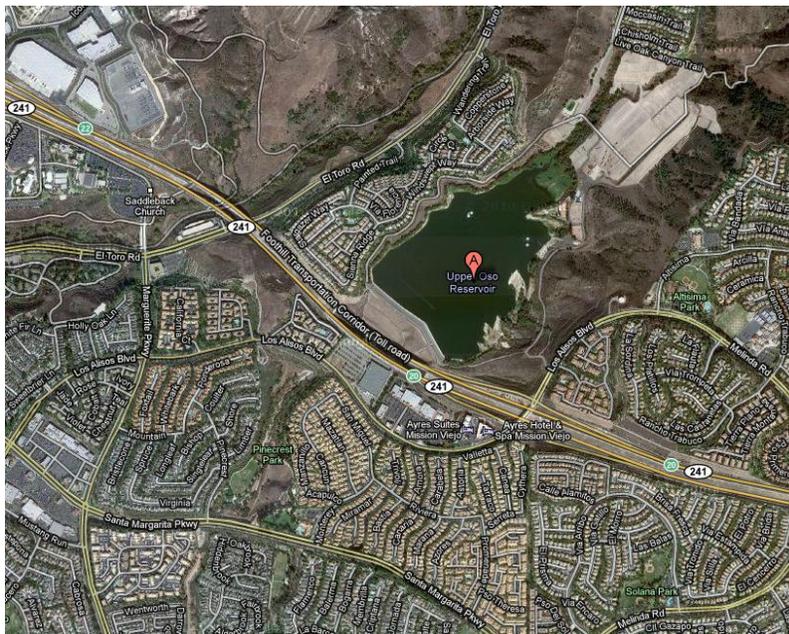
National ID#: CA01145

Upper Oso Reservoir

The Upper Oso Reservoir is on Oso Creek and its uses are for storage, irrigation and recreation. Construction was completed in 1979.

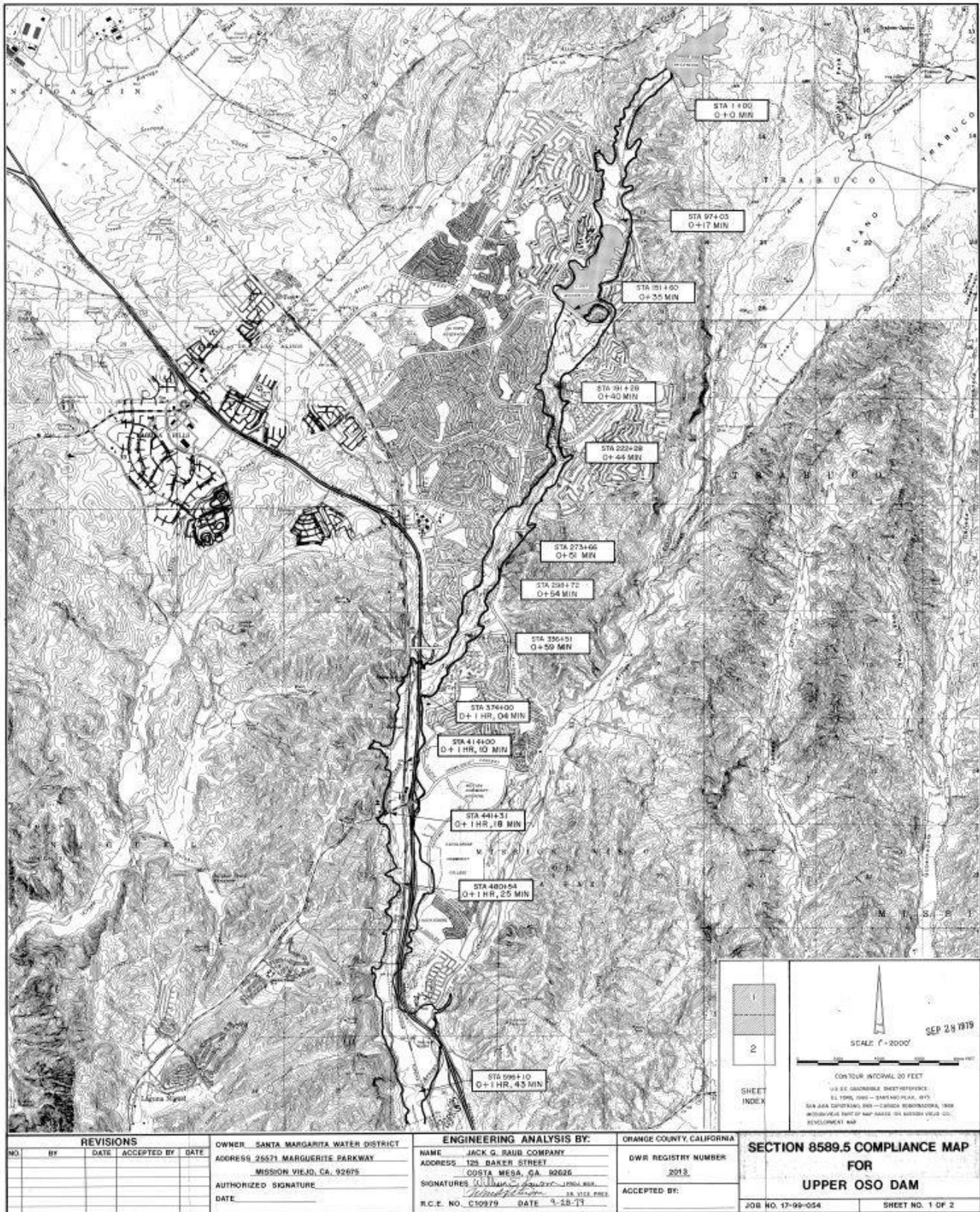
Dam Type	Risk Rating	Length	Height
Earth	Extremely High	800 ft	142 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
3700	1.13	115	

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sheriff’s Department	Orange County Fire Authority	City of Mission Viejo Transportation Corridor Agency Ca Highway Patrol



Notifications

Santa Margarita Water District is responsible for control, coordination and notifications of the Upper Oso Reservoir.



REVISIONS				
NO.	BY	DATE	ACCEPTED BY	DATE

OWNER SANTA MARGARITA WATER DISTRICT
ADDRESS 25571 MARGUERITE PARKWAY
MISSION VILLO, CA. 92675
AUTHORIZED SIGNATURE _____
DATE _____

ENGINEERING ANALYSIS BY:
NAME JACK G. RAUB COMPANY
ADDRESS 120 BAKER STREET
COSTA MESA, CA 92626
SIGNATURES *[Signature]* J.G. RAUB, P.E.
R.C.E. NO. C50979 DATE 9-28-79

ORANGE COUNTY, CALIFORNIA
DWR REGISTRY NUMBER 2012
ACCEPTED BY: _____

**SECTION 8589.5 COMPLIANCE MAP
FOR
UPPER OSO DAM**
JOB NO. 17-99-054 SHEET NO. 1 OF 2



REVISIONS				
NO.	BY	DATE	ACCEPTED BY	DATE

OWNER: SANTA MARGARITA WATER DISTRICT
 ADDRESS: 25571 MARGUERITE PARKWAY
 MISSION VIEJO, CA. 92673
 AUTHORIZED SIGNATURE: _____
 DATE: _____

ENGINEERING ANALYSIS BY:
 NAME: JACK G. RAUB COMPANY
 ADDRESS: 125 BAKER STREET
 COSTA MESA, CA 92626
 SIGNATURES: *[Signature]* SEP 2 2013
 R.C.E. NO. C10272 DATE: 9-28-13

ORANGE COUNTY, CALIFORNIA
 DWR REGISTRY NUMBER: 2013
 ACCEPTED BY: _____

SECTION 8589.5 COMPLIANCE MAP
FOR
UPPER OSO DAM
 SEP 28 2013
 JOB NO. 17-99-054 SHEET NO. 2 OF 2

Veeh Reservoir

Owner: Lake Hills Community Church

California ID#: 796-000

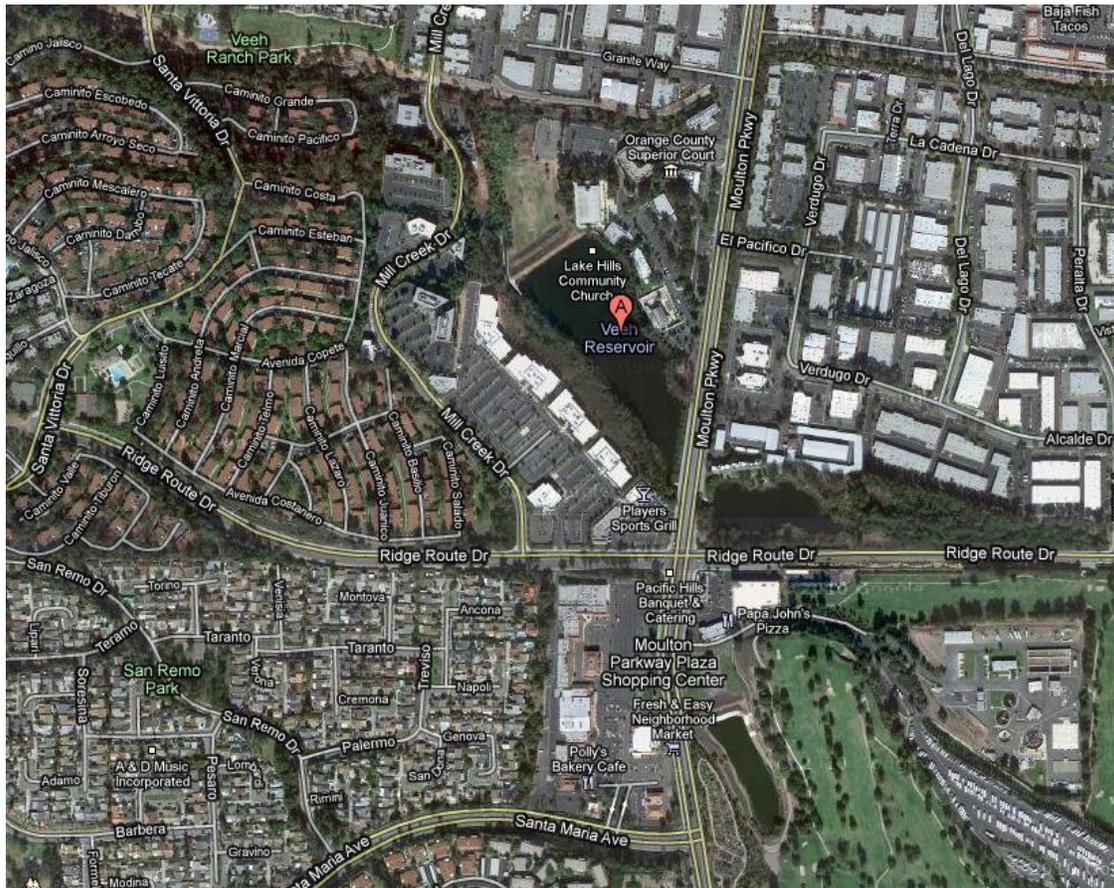
National ID#: CA00750

Veeh Reservoir

The Veeh Reservoir is on a tributary of San Diego Creek and its uses are for storage, irrigation. Construction was completed in 1936.

Dam Type	Risk Rating	Length	Height
Earth	High	417 ft	37 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
185	1.7	16	

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sheriff's Department	Orange County Fire Authority	City of Laguna Hills City of Irvine Saddleback Valley Unified School District



Notifications

Lake Hills Community Church is responsible for control, coordination and notifications of the Veeh Reservoir.

Villa Park Dam

Owner: County of Orange

California ID#: 1012-000

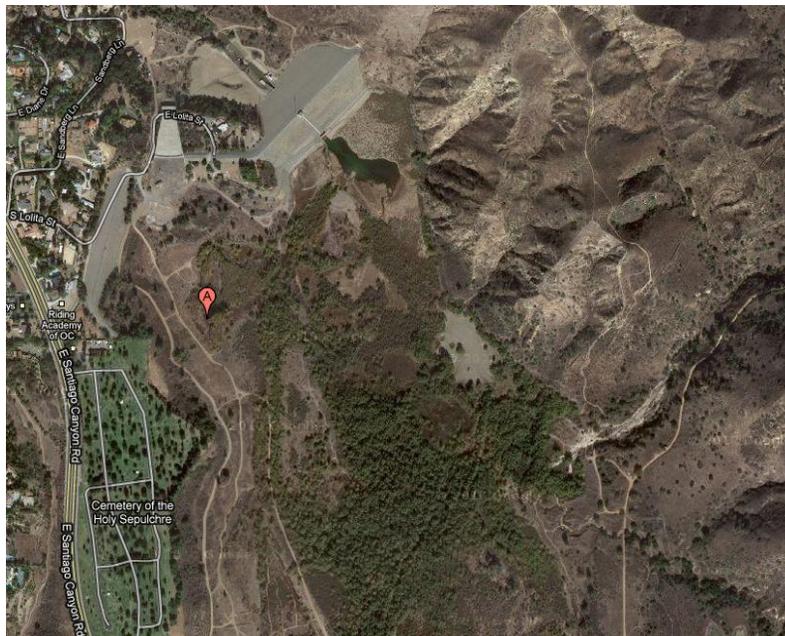
National ID#: CA00829

Villa Park Dam

Villa Park Dam is on Santiago Creek and is used for flood control. Construction was completed in 1963.

Dam Type	Risk Rating	Length	Height
Earth	Extremely High	119 ft	118 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
15600	83.4	480	

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sheriff's Department	Orange County Fire Authority	OC Parks City of Orange City of Villa Park City of Tustin Ca Highway Patrol City of Irvine City of Santa Ana City of Costa Mesa



Notification

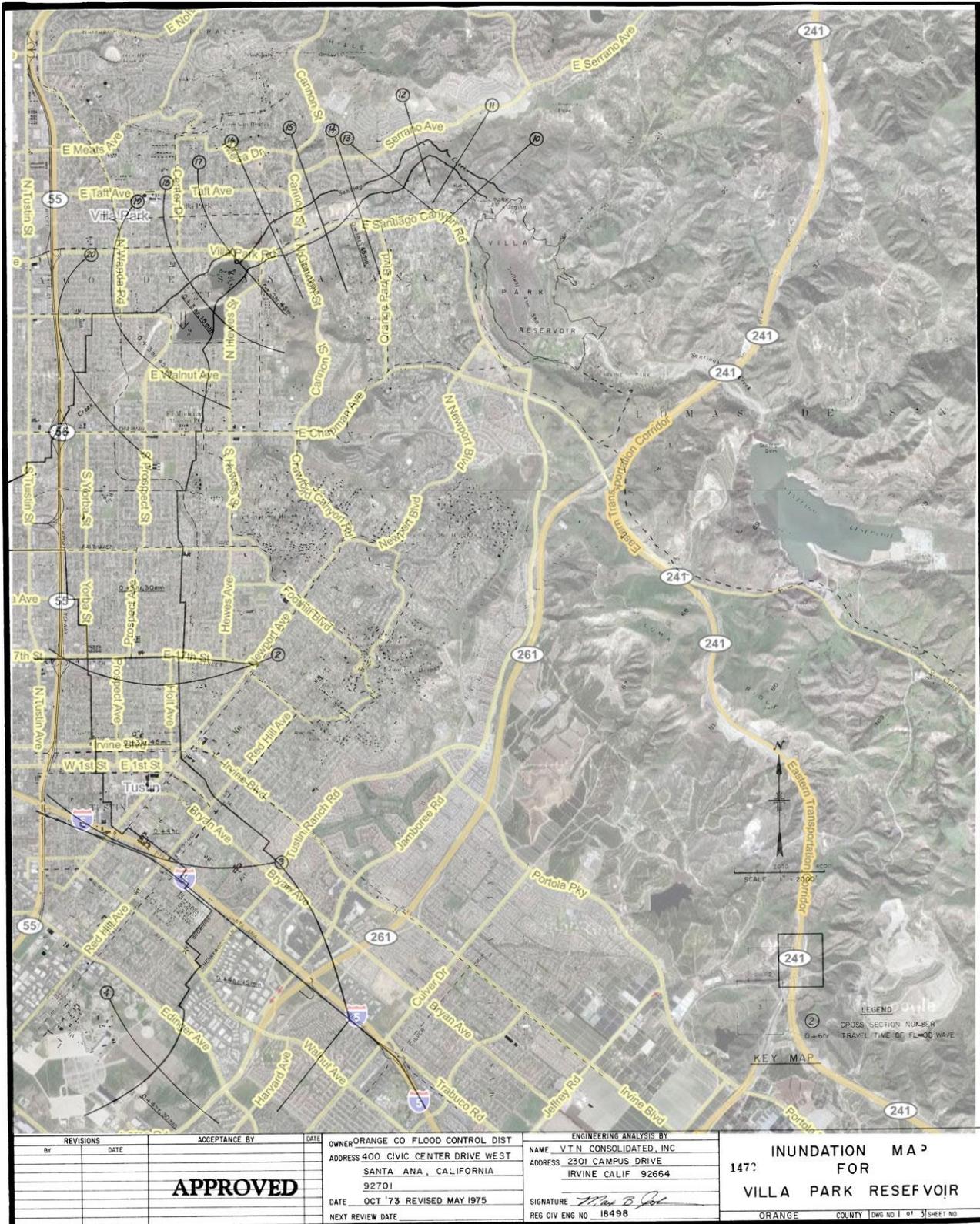
OC Public Works is responsible for control, coordination and notifications of the Villa Park Dam.

Villa Park Dam Water Movement Timeline

Location	Arrival Time	
Santiago Canyon & Orange Park Blvd	1 hrs 45 min	
Villa Park Rd & Hewes	2 hrs 45 min	
North of Collins & Prospect	3 hrs 15 min	
South of Collins & Prospect	3 hrs 45 min	
Santa Ana River Channel Fork:		
55 Freeway & Chapman	4 hrs 30 min	
22 Freeway & Cambridge	5 hrs	
22 Freeway & Main Street	5 hrs 30 min	
17 th & Bristol	6 hrs 15 min	
1 st Street	6 hrs 30 min	
Between Edinger & Warner	7 hrs	
MacArthur	7hrs 15 min	
Sunflower	7 hrs 45 min	
Gisler	8 hrs 15 min	
Just north of Adams	8 hrs 45 min	
Victoria	9 hrs 15 min	
San Diego Creek Channel Fork:		
Newport Ave & Bryan Ave	4 hrs	
261 Toll Road & Edinger	4 hrs 15 min	
Old Tustin USMC base	4 hrs 30 min	
Red Hill & Alton Pkwy	5hrs	
405 Freeway	5 hrs 15 min	
South of Campus Drive	5 hrs 30 min	
73 Toll Road	5 hrs 15 min	
East side of Irvine Ave & Santa Isabel	6 hrs 15 min	

**above reference points are the closest approximate main street along plotted timeline of OCPW inundation maps

NAVD = North American Vertical Datum (NAVD). In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929 it will differ to actual sea level by 71 cm or 2.3 feet. The acronym has been adopted by FEMA FIS and FIRM maps to NAVD.



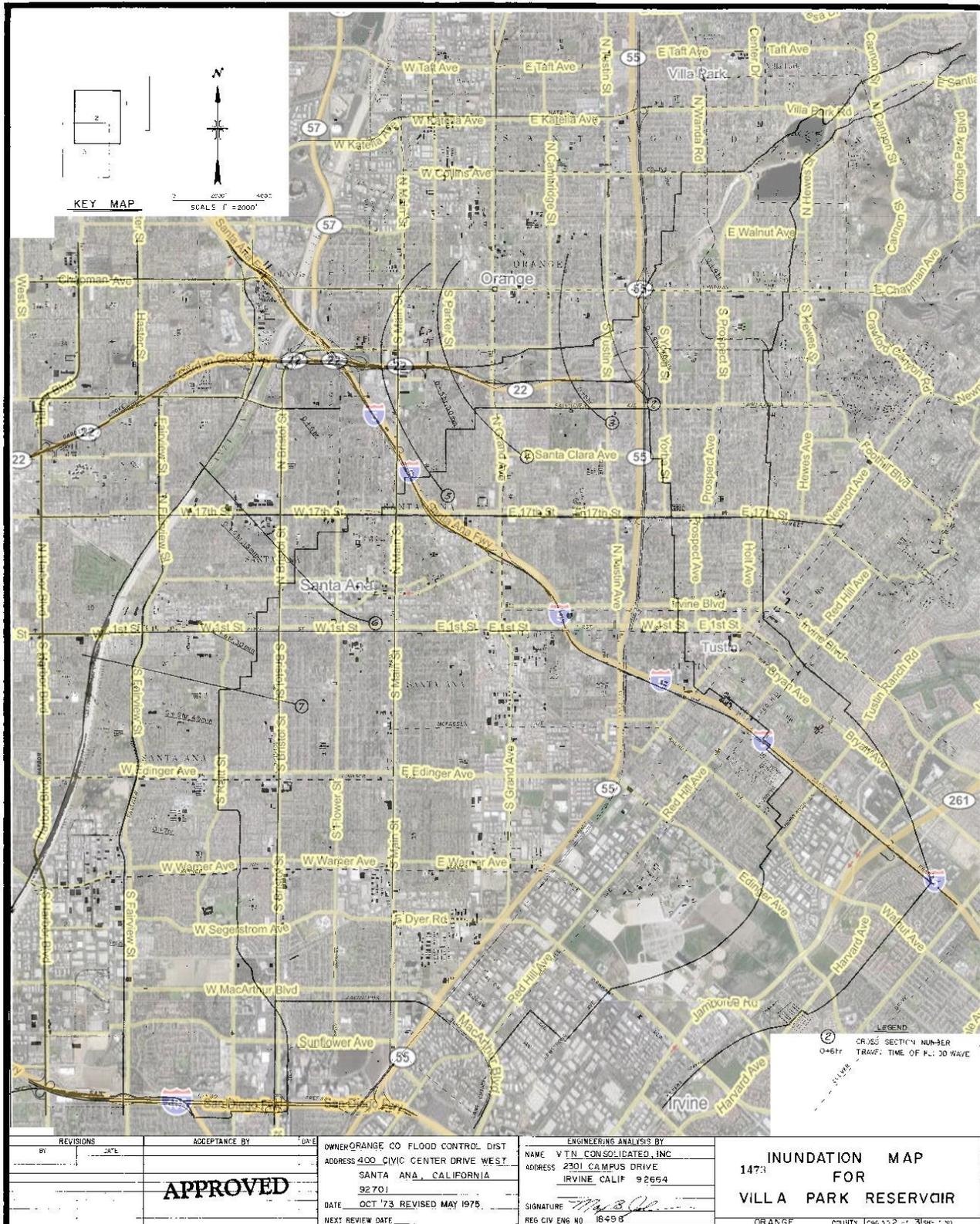
REVISIONS	DATE	ACCEPTANCE BY	DATE

OWNER ORANGE CO FLOOD CONTROL DIST
ADDRESS 400 CIVIC CENTER DRIVE WEST
SANTA ANA, CALIFORNIA
92701
DATE OCT '73 REVISED MAY 1975
NEXT REVIEW DATE

ENGINEERING ANALYSIS BY
NAME V.T.N CONSOLIDATED, INC
ADDRESS 2301 CAMPUS DRIVE
IRVINE CALIF 92664
SIGNATURE *[Signature]*
REG CIV ENG NO 18498

INUNDATION MAP
147 FOR
VILLA PARK RESEVOIR
ORANGE COUNTY Dwg No 1 of 3 SHEET NO

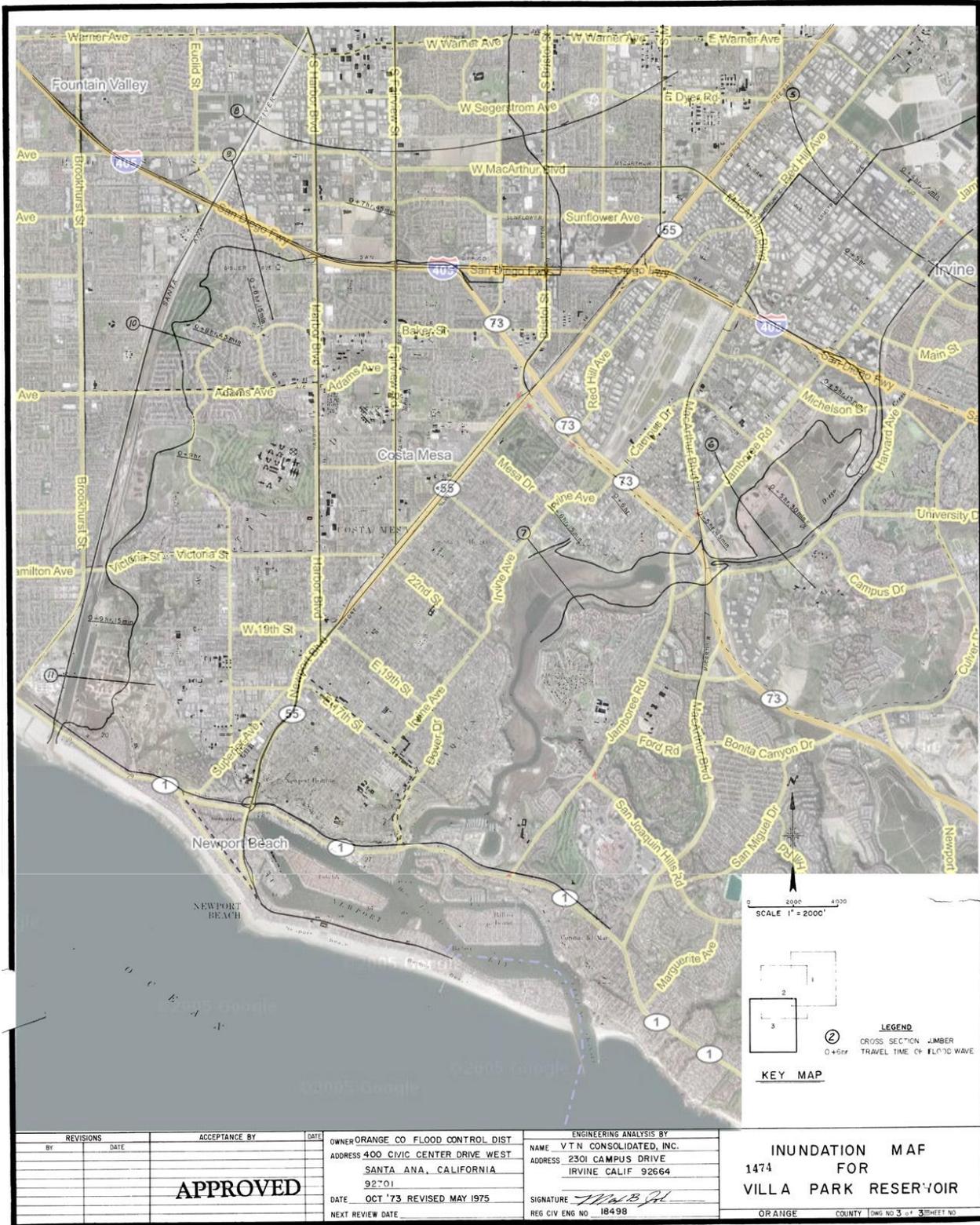
APPROVED



BY	REVISIONS	DATE	ACCEPTANCE BY	DATE
			APPROVED	

OWNER ORANGE CO FLOOD CONTROL DIST ADDRESS 400 CIVIC CENTER DRIVE WEST SANTA ANA, CALIFORNIA 92701 DATE OCT '73 REVISED MAY 1975 NEXT REVIEW DATE	ENGINEERING ANALYSIS BY NAME V.T.N. CONSOLIDATED, INC ADDRESS 2301 CAMPUS DRIVE IRVINE CALIF 92664 SIGNATURE <i>[Signature]</i> REG CIV ENG NO 18498
--	---

INUNDATION MAP
147.1
FOR
VILLA PARK RESERVOIR
ORANGE COUNTY LONG 10 2 21 315 11 70



REVISIONS		ACCEPTANCE BY	DATE
BY	DATE		
		APPROVED	

OWNER ORANGE CO FLOOD CONTROL DIST
ADDRESS 400 CIVIC CENTER DRIVE WEST
SANTA ANA, CALIFORNIA
92701
DATE OCT '73 REVISED MAY 1975
NEXT REVIEW DATE

ENGINEERING ANALYSIS BY
NAME V T N CONSOLIDATED, INC.
ADDRESS 2301 CAMPUS DRIVE
IRVINE CALIF 92664
SIGNATURE *[Signature]*
REG CIV ENG NO. 18498

INUNDATION MAP
1474
FOR
VILLA PARK RESERVOIR
ORANGE COUNTY DWG NO. 3 OF 3 SHEET NO.

Walnut Canyon

Owner: City of Anaheim

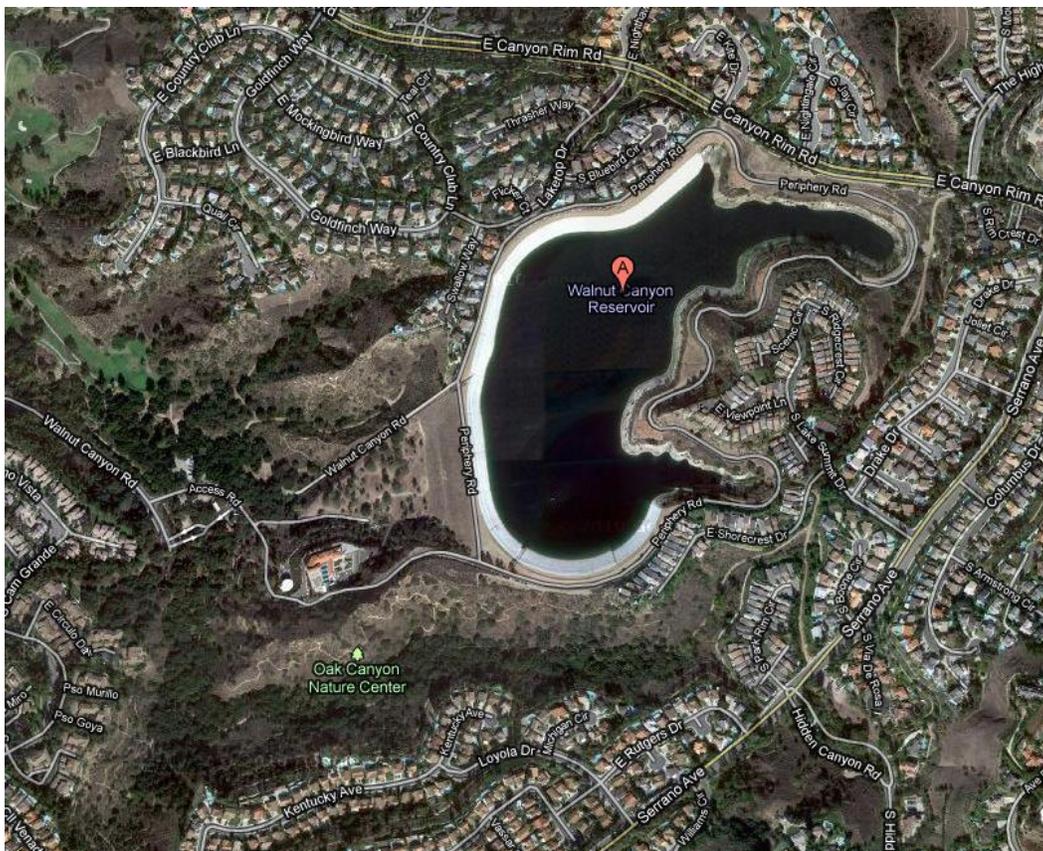
California ID#: 1037-000

National ID#: CA00869

Walnut Canyon Reservoir

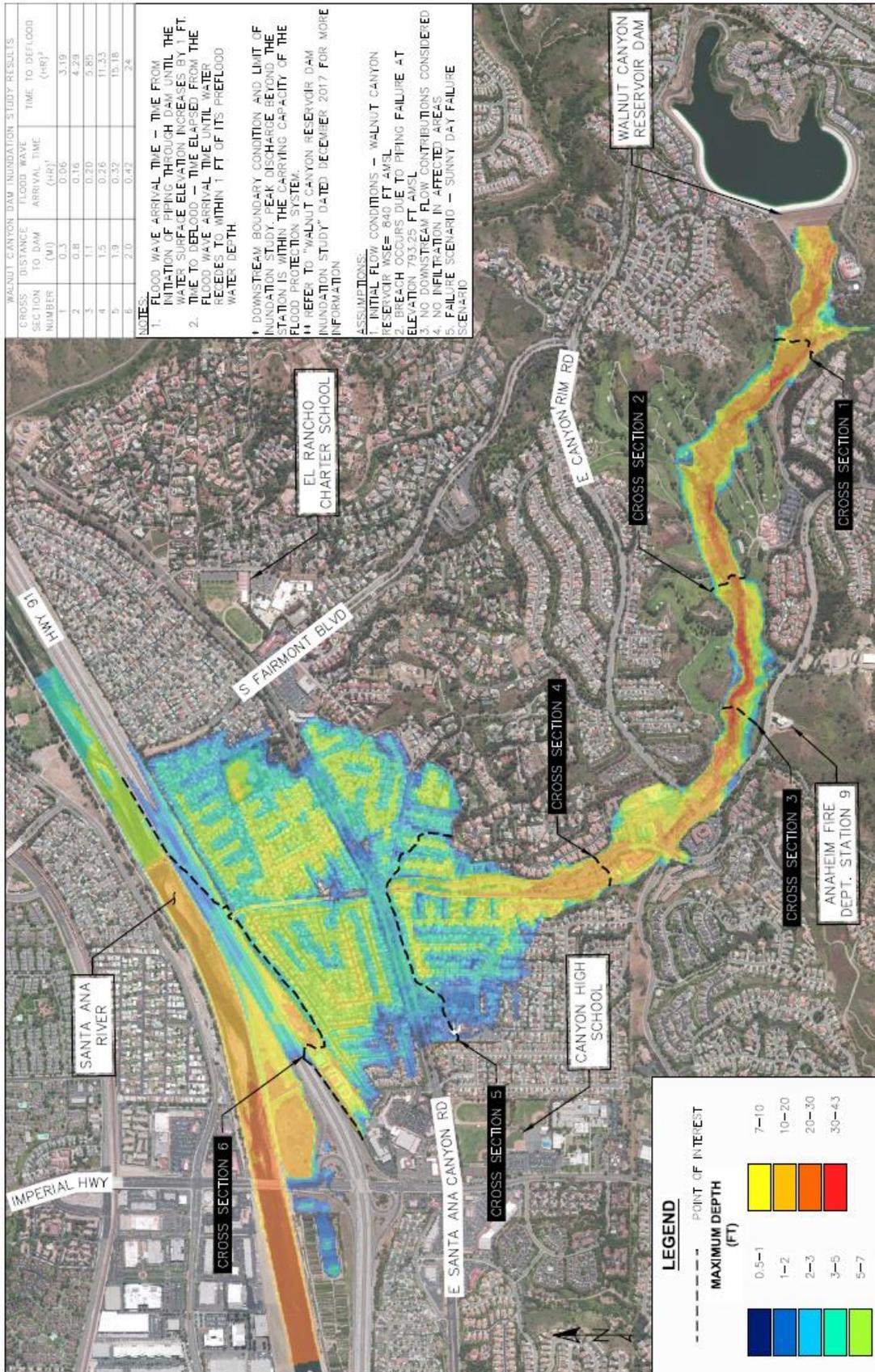
Walnut Canyon Reservoir is on the Walnut Canyon River and is used for storage and drinking water. Construction was completed in 1968.

Dam Type	Risk Rating	Length	Height
Earth	Extremely High	930 ft	187 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
2570	0.33	47	
Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions	
Anaheim Police Department	Anaheim Fire & Rescue	City of Anaheim Ca Highway Patrol	



Notification

The City of Anaheim is responsible for the control, coordination and notifications of the Walnut Canyon Reservoir.



ENGINEER OF WORK: [Seal of Bill Morhead, City of Anaheim]

OWNER'S INFORMATION:
 NAME: CITY OF ANAHEIM
 CONTACT: BILL MORHEAD
 PHONE NO.: (714) 765-4165
 ADDRESS: 201 S ANAHEIM BLVD, SUITE 601 ANAHEIM, CALIFORNIA 92805

PREPARED BY: DUDEK
 2732 Calle Arroyo
 San Juan Capistrano, CA 92675
 PH: 949.261.0225

MAP DATE: 12-19-17

CITY OF ANAHEIM
 WALNUT CANYON RESERVOIR-DSOD#1037
 INUNDATION MAP

LEGEND:
 POINT OF INTEREST (Dashed line)
 MAXIMUM DEPTH (FT):
 0.5-1 (Dark Blue)
 1-2 (Blue)
 2-3 (Light Blue)
 3-5 (Cyan)
 5-7 (Green)
 7-10 (Yellow)
 10-20 (Orange)
 20-30 (Red-Orange)
 30-43 (Red)

GRAPHIC SCALE:
 1" = 100 FT
 1" = 30.48 M

Yorba Dam

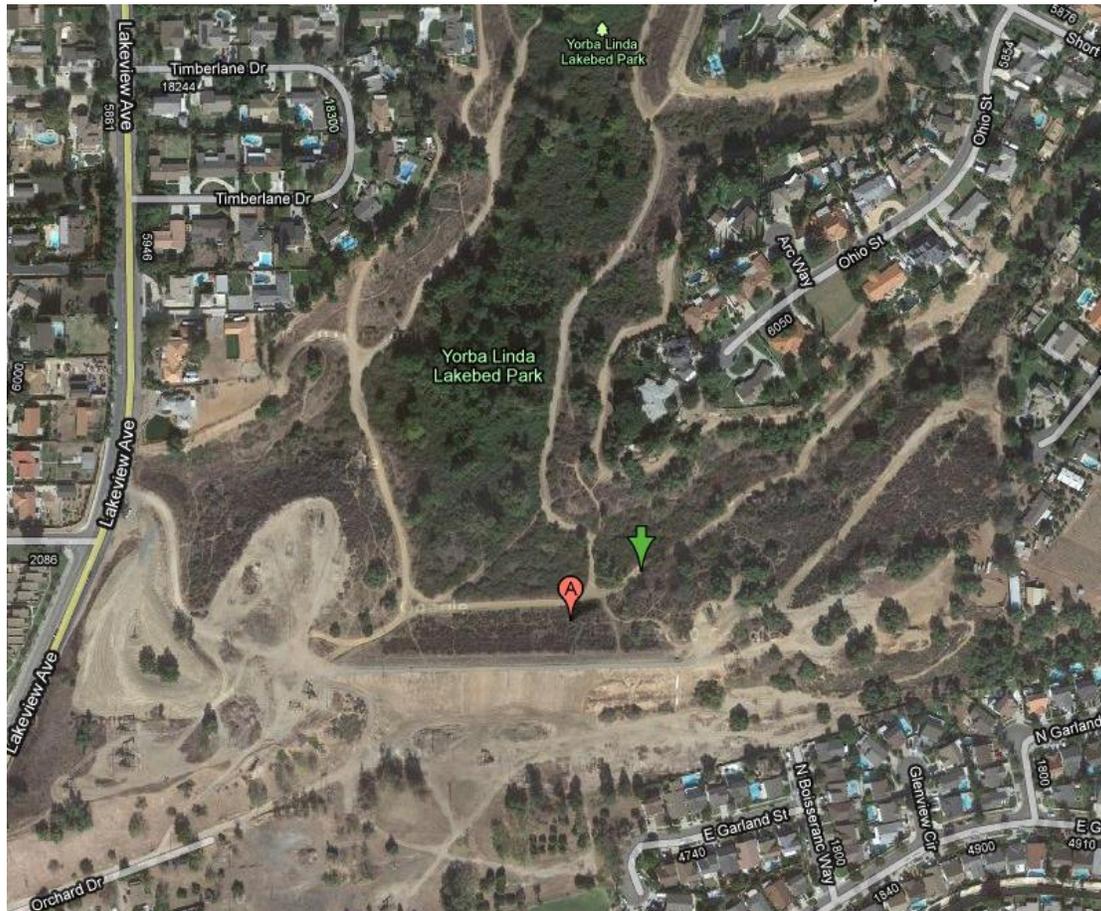
Owner: County of Orange
California ID#: 1012-003
National ID#: CA00831

Yorba Dam

The Yorba Dam and Reservoir is located east of Lakewood Avenue and north of Orchard Road in the City of Yorba Linda. It was built in 1907 by the Anaheim Union Water Company in 1907 to store water. An on-going issue with the dam was seepage, leaking at a rate of about 12 acre-feet per day. The reservoir was drained in 1969 and was acquired by the Orange County Flood Control District in 1972 for use as a flood retarding basin.

Dam Type	Risk Rating	Length	Height
Earth	High	920 ft	45 ft
Storage Capacity in acre feet	Drainage Area in square miles	Reservoir Area in acres	
1200	1.5	87	

Public Safety Answering Point (PSAP)	Fire/EMS	Impacted Jurisdictions
Orange County Sheriff's Department	Orange County Fire Authority	City of Yorba Linda Placentia-Yorba Unified School District City of Anaheim



Notification

OC Public Works is responsible for the control, coordination and notifications of the Yorba Dam.