



Public Works Agency

*Ventura County
Watershed
Protection District*

San Antonio Creek Spreading Grounds Rehabilitation Project Ojai Valley, CA

Ribbon Cutting Event
Slideshow

September 10, 2014



Project Funding

- **Proposition 50 Integrated Regional Water Management Grant (2007)**
 - \$1,315,000 grant award from State Water Resources Control Board
 - Minimum local match of \$108,746 from Project Stakeholders

- **Proposition 84 Round 1 IRWM Implementation Grant, Amendment 1 (2013)**
 - \$500,000 grant award from California Department of Water Resources



Project Partners

- Ojai Basin Groundwater Management Agency
- Ojai Water Conservation District
- Golden State Water Company
- Casitas Municipal Water District
- Ventura County Watershed Protection District



Acknowledgements

■ WPD & County Staff

- Sue Hughes
- Peter Sheydayi
- Gerard Kapuscik
- Elizabeth Martinez
- Pam Lindsey
- Martha Symes
- Matt Hespenheide
- Bill Carey
- Rick Viergutz
- Barbara Council
- Keith Filegar
- Dave Jackson
- Kathy Jones
- Dan Romero
- Will Randall

■ Design

- Jordan Kear, Kear GW
- Daniel B. Stephens
- Penfield & Smith

■ Geotechnical

- BTC Labs

■ Environmental

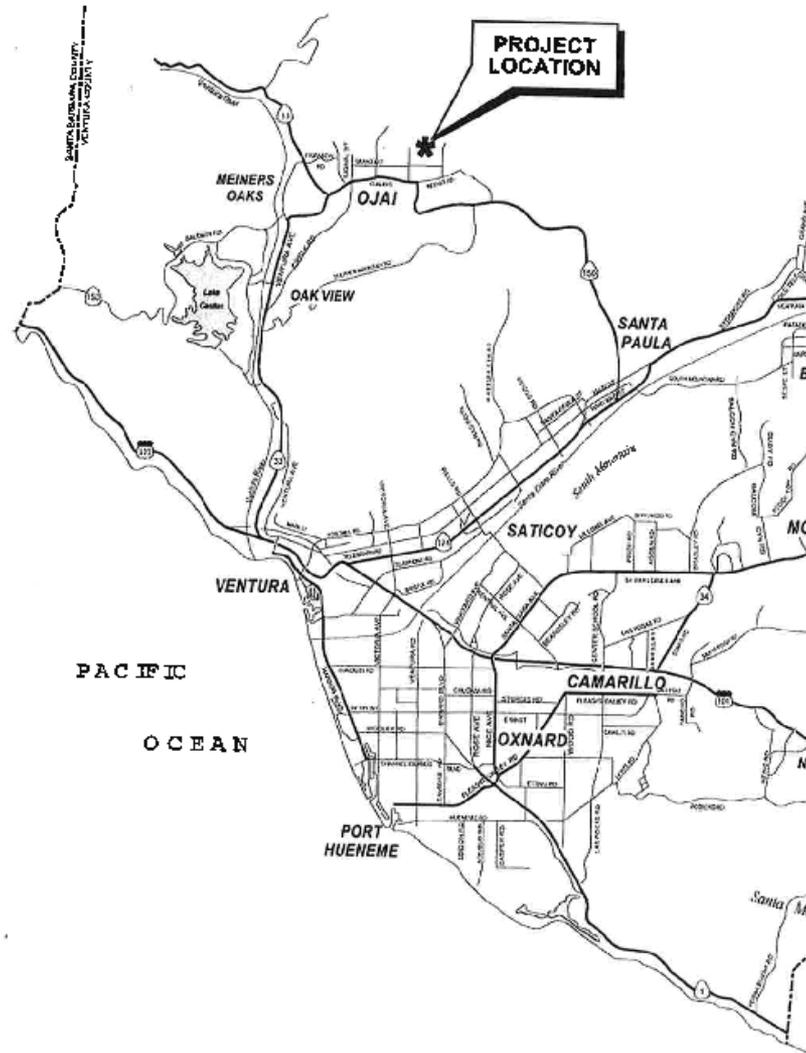
- Analytical Environmental
- BioResource Consultants
- Padre Associates, Inc.
- Stillwater Sciences

■ Construction Management

- Penfield & Smith
- Don Morin, BTC Labs



Regional Location Map





Project Site Vicinity Map

Public Works Agency





Historical Aerial Photographs

1968



Early evidence of a series of ponds on both the north and south sides of San Antonio Creek. VCWPD did not purchase the parcel until 1986, but the property lines are shown as a frame of reference.

SAN ANTONIO CREEK AREA OF
SPREADING GROUNDS/DEBRIS BASIN
DATE: APRIL, 1968



SCALE: 1"=400'

1989



When the debris basin was constructed in 1986, the excavated soil was placed on the spreading grounds. In this 1989 photo, the ponds are no longer visible.

SAN ANTONIO CREEK AREA OF
SPREADING GROUNDS/DEBRIS BASIN
DATE: JUNE, 1989



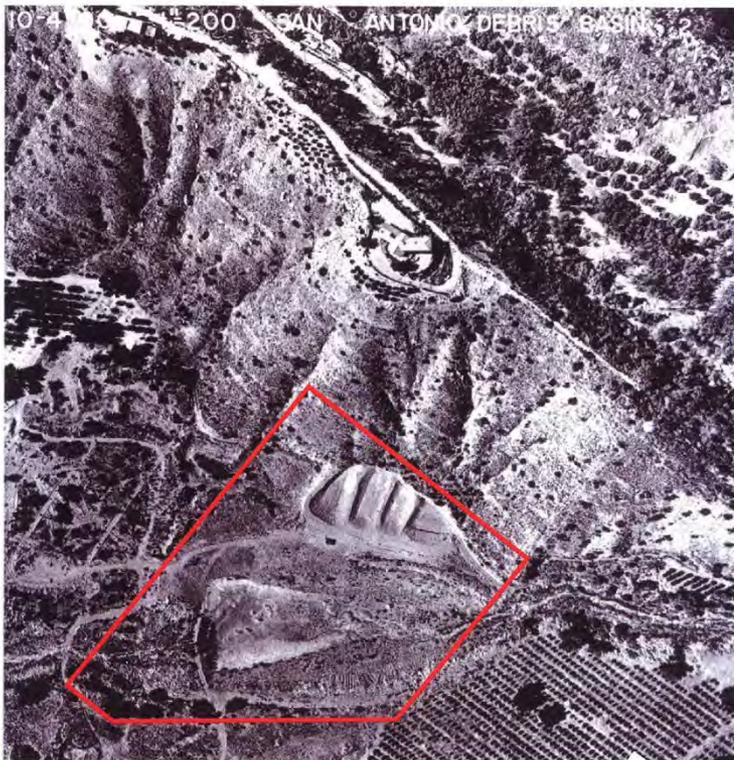
SCALE: 1"=400'



Historical Aerial Photographs

Public Works Agency

1990



Four ponds were constructed in 1990 in a new configuration on top of fill material taken from the debris basin

SAN ANTONIO CREEK AREA OF
SPREADING GROUNDS/DEBRIS BASIN
DATE: OCTOBER, 1990



SCALE: 1" = 200'

2004



SAN ANTONIO CREEK
AREA OF SPREADING GROUNDS/DEBRIS BASIN
DATE: 2004(?)

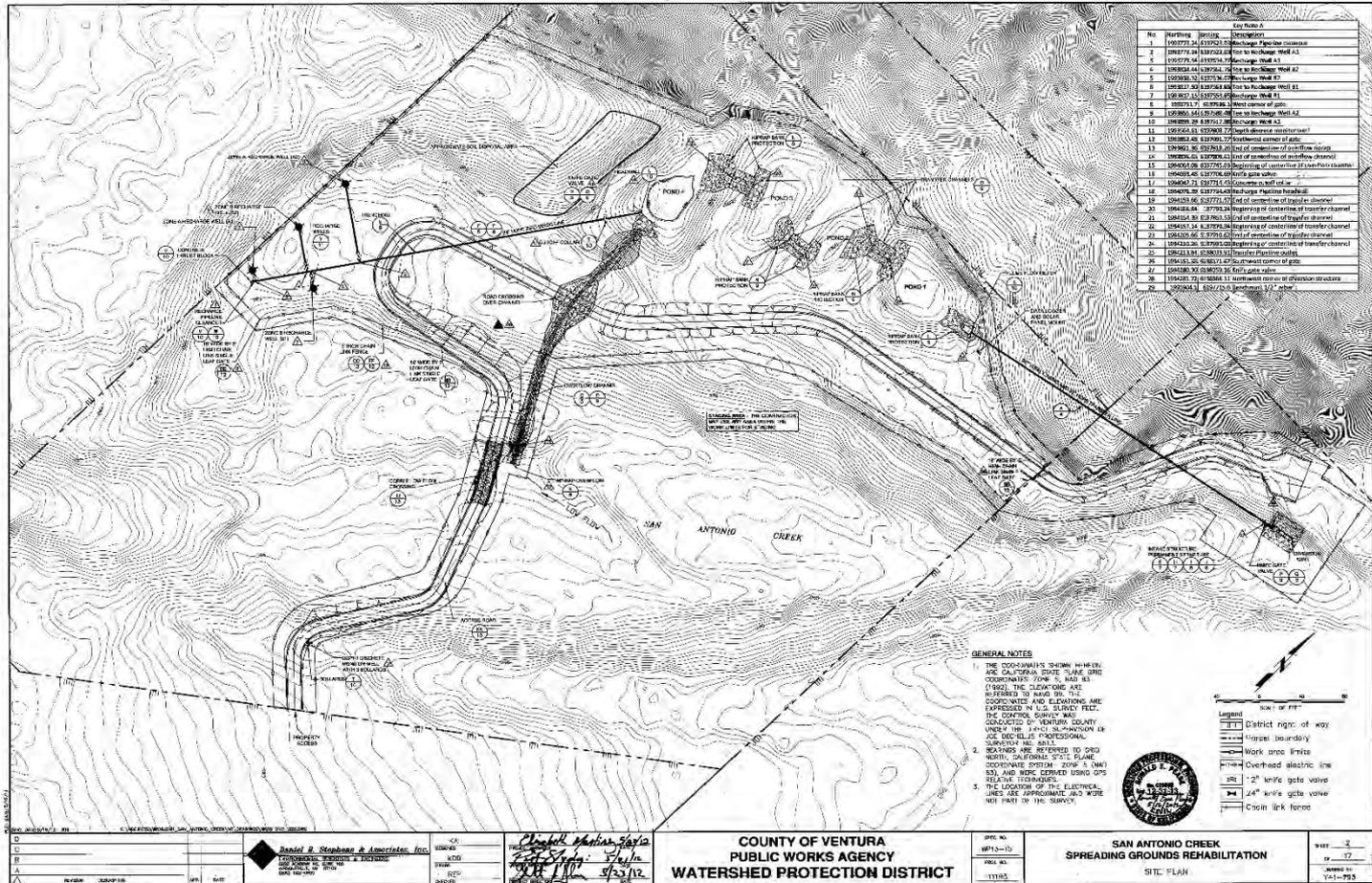


SCALE: 1" = 200'



Project Site Plan

Public Works Agency





Pre-Project Site Conditions

Existing Spreading Grounds Pond



View East

San Antonio Ck near Intake Location



View Downstream (west)



CEQA Compliance

- Draft Initial Study and Mitigated Negative Declaration (MND) prepared January 2011
- Impact Areas identified in the IS/MND
 - Air Quality
 - Cultural Resources
 - Transportation & Circulation
 - Water Resources
- All impacts less-than-significant with mitigation
- Last minute request by City of Ventura before Board of Supervisor's hearing on April 26, 2011
 - New mitigation measure requiring District to enter into an Operations Agreement to protect senior water rights



Challenge #1: Project Permitting

- Streambed Alteration Agreement from CDFW
- Section 404 Permit from USACE
- Section 401 Water Quality Certification from Los Angeles RWQCB
- **Water Right Permit** from the State Water Resources Control Board



Endangered Steelhead Trout

- Project site u/s of steelhead critical habitat
- 2007 and 2010 steelhead habitat studies find “limited and marginal steelhead migratory, spawning, and rearing habitat in San Antonio, Senior, and Gridley Creeks”
- However, NMFS cites survey: 3 dead steelhead

Attachment 2

Oncorhynchus mykiss mortalities in upper San Antonio Creek, July 2011.
Andrew L. Bonsignori and Scott D. Lewis

On 26 July 2011, at 1050 h, three dead *O. mykiss* were found downstream of the confluence of Senior Canyon and Gridley Canyon creeks at coordinates: N 34.46599, W 119.20564. The *O. mykiss* were in a small pool where the water was going subsurface (i.e., there was no water downstream from that point). There was an impediment upstream of the pool with a series of small steps that totaled about 2 m in height; the individual steps were up to about 0.6 m (Figure 1). The water depth was estimated to have been no more than about 8 cm.

O. mykiss # 1 was 22 cm FL and 23 cm TL (Figure 2). *O. mykiss* # 2 was 22.3 cm FL and 23 cm TL (Figure 3). *O. mykiss* # 3 was 29.1 cm FL and 30.6 cm TL (Figure 4). Based on appearance and odor, they were not likely dead for very long. There were no visible marks to their bodies from predators or scavengers. The fish were left in the pool and not removed from the site.

The pool was revisited at 1822 h to measure water temperature and dissolved oxygen and it was found to be dry. Measurements were taken in the next small pool upstream. This pool was approximately 22 cm deep. The water temperature at 1822 h was 26.5 °C and the dissolved oxygen was 5.89 mg/L and about 74% of saturation. On the following morning of 27 July at 0825 h, the same pool had a temperature of 17.1 °C and the dissolved oxygen was 8.46 mg/L and 89% of saturation.



Figure 1.



Figure 2.



Figure 3.



Figure 4.

3 dead steelhead
found July 2011



Water Right Application – Resolution of Protests

- **Protests** received February 2011 from CDFW, NMFS, CalTrout, and City of Ventura
- **Main issues** – bypass flows for steelhead, low flow crossing, maintain senior water rights
- **Resolution efforts** – written correspondence, meetings & teleconferences, lots of additional data, requirement for Operations Agreement, developed Adaptive Management Plan, agreed to 1-foot depth minimum bypass flow, and additional stream flow monitoring



Cobble Low Flow Crossing

Arizona Crossing
Not Allowed



Cobble Crossing
Constructed





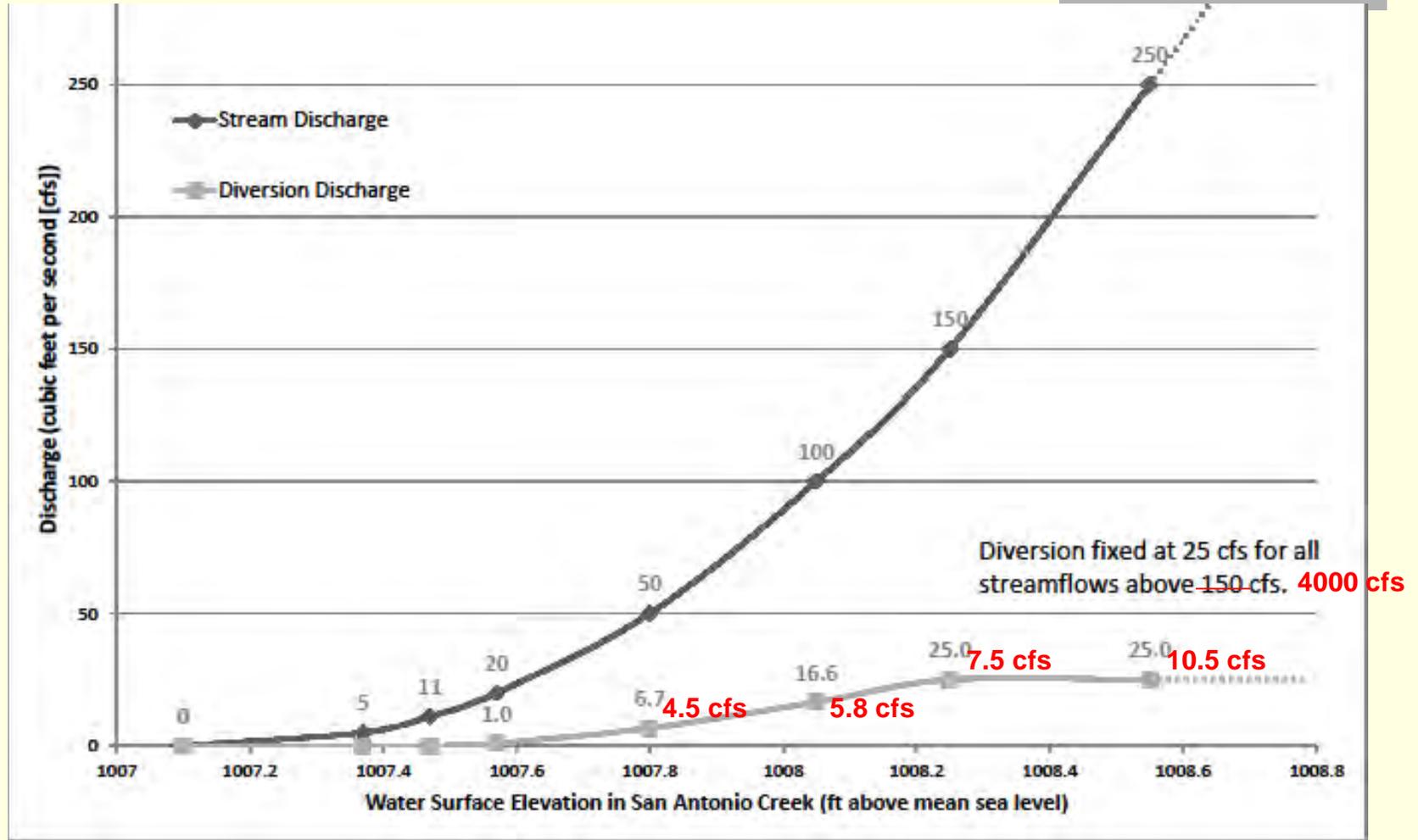
Operating Parameters

(Revisions due to Permit Conditions Shown in “Red”)

- Ojai Valley Groundwater Basin recharge estimates:
 - average ~~308~~ **126 ac-ft** over ~~12~~ **6** days
 - 914 acre-feet annual maximum
- Diversion begins when min. flow criteria met:
 - ~~0.6~~ **1-foot** depth at Grand Avenue (new gage)
 - (Approx. ~~5 cfs~~ **21 cfs** at Grand Ave)
 - ~~40~~ **50 cfs** at Casitas Vista gage on Ventura R.
- Diversion begins when approx. ~~>10.6 cfs~~ **>30 cfs** at intake



Comparison of San Antonio Creek Flows and Proposed Diversion Flows





Intake Structure Fish Screen & Automatic Cleaning Device



Fish screen panels constructed of V-wire profile bar with <math><0.0689</math>-inch width openings

Screen cleaning device: rotating bars spray water from inside





Challenge #2: Inadequate Construction Funding in 2012

WP12-022

Bids Opened
7/3/12

Low Bid
\$1,719,414.50

Bids Opened on 7/3/12		Low Bidder		Mid Bidder		High Bidder	
Project Name: San Antonio Creek Spreading Grounds Rehabilitation Project		Two Enterprises Inc. P O Box 6255 Diamond, CA 95031 805/485-4515 Fax: 805/485-3635		Bert W. Sabas, Inc. 8078 Woodside Ave. Ste 201 San Jose, CA 95071 415/952-7711 Fax: 415/958-3515		C A Rasmussen, Inc. 22543 Linnerton Ave Folsom, CA 95105 916/367-9040 Fax: 916/367-9097	
Spec No. WP12-22		805/485-4515 Fax: 805/485-3635		415/952-7711 Fax: 415/958-3515		916/367-9040 Fax: 916/367-9097	
ITEM NO	ITEM	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL
1	Mobilization	32,200.00	32,200.00	145,000.00	145,000.00	12,000.00	12,000.00
2	Water Pollution Control	9,300.00	9,300.00	47,150.00	47,150.00	23,000.00	23,000.00
3	Director, Control & Removal of Water	13,800.00	13,800.00	9,200.00	9,200.00	8,200.00	8,200.00
4	Shoring and Worker Safety	6,500.00	6,500.00	6,600.00	6,600.00	3,600.00	3,600.00
5	Cleaning and Grouting	17,650.00	17,650.00	24,100.00	24,100.00	30,900.00	30,900.00
6	Scarfing Ponds	5,750.00	5,750.00	5,900.00	5,900.00	3,500.00	3,500.00
7	Excavation	32,530.00	32,530.00	50,900.00	50,900.00	130,000.00	130,000.00
8	Fill and Backfill	5,370.00	5,370.00	31,900.00	31,900.00	16,050.00	16,050.00
9	Top Soil/Fill	3,700.00	3,700.00	3,500.00	3,500.00	11,000.00	11,000.00
10	Jacking Pit or Platform	23,800.00	23,800.00	15,600.00	15,600.00	29,000.00	29,000.00
11	Jacking Steel Casing	1,151.00	402,850.00	1,170.00	406,500.00	1,200.00	420,000.00
12	1/2 Ton Class Fluviated Rock Riprap	151.00	149,400.00	111.00	109,800.00	140.00	138,600.00
13	1/4 Ton Class Rock Riprap and Filter Blankets	106.00	3,347.00	135.00	4,320.00	170.00	3,840.00
14	Flt. Cast RC Diversion Structure	48,700.00	48,700.00	44,300.00	44,300.00	28,000.00	28,000.00
15	High Screen	8,500.00	8,500.00	9,400.00	9,400.00	1,900.00	1,900.00
16	Reinforced Concrete Structures	760.00	16,720.00	885.00	15,470.00	770.00	15,940.00
17	Flow Meter, Flume, and Appurtenances	29,410.00	29,410.00	17,800.00	17,800.00	17,000.00	17,000.00
18	24" Knife Gate Valves and Vaults	43,720.00	87,440.00	41,150.00	82,300.00	40,000.00	80,000.00
19	12" Knife Gate Valves and Vaults	11,160.00	44,640.00	9,000.00	36,000.00	7,700.00	30,800.00
20	24" Inlet HDPE Recharge Pipeline	143.50	57,320.00	75.00	30,400.00	130.00	48,000.00
21	12" Inlet HDPE Pipeline	110.75	15,505.00	59.00	8,260.00	110.00	15,420.00
22	Pipeline Cleanout Pipe & Thrust Block	3,330.00	3,330.00	6,635.00	6,635.00	5,200.00	5,200.00
23	Borehole Drilling	444.40	88,880.00	425.00	85,000.00	470.00	94,000.00
24	Soundings and Evaluation Tube	53.35	11,270.00	53.00	16,600.00	64.00	12,800.00
25	Recharge Well Casing	354.40	52,020.00	350.00	61,250.00	390.00	68,250.00
26	Equipot Pipe	121.18	24,226.00	118.00	23,600.00	130.00	25,000.00
27	Gravel Pack	453.00	4,432.00	455.00	4,370.00	590.00	5,250.00
28	Equipot Tee	3,200.00	6,500.00	3,195.00	6,390.00	4,200.00	8,400.00
29	Bentonite Seal	1,292.00	5,104.00	1,290.00	5,120.00	1,730.00	6,920.00
30	Cement Grouting of Annulus	125.50	21,922.50	125.00	21,875.00	140.00	24,500.00
31	Recharge Well Surface Completion	6,430.00	12,860.00	5,860.00	11,720.00	7,000.00	14,000.00
32	Limited Development, Pile Flush	3,620.00	30,560.00	3,730.00	29,840.00	4,200.00	35,800.00
33	High Chair Link Flange	21.50	40,742.50	21.00	39,765.00	22.00	41,830.00
34	High Chair 5' High Chair Link Gates	1,380.00	4,140.00	600.00	1,650.00	1,800.00	5,400.00
35	OMS Access Road	12.20	32,948.00	8.00	21,600.00	8.70	23,490.00
36	Pipe Bolts	995.00	2,985.00	455.00	1,365.00	880.00	2,550.00
37	Low Flow Crossing	20,800.00	70,800.00	6,300.00	6,300.00	17,000.00	17,000.00
38	Hydroseeding	6,685.00	6,685.00	6,455.00	6,455.00	5,200.00	5,200.00
39	Release on Contract -	1.00	1.00	1.00	1.00	1.00	1.00
TOTAL Schedule I			1,491,450.00		1,481,000.00		1,511,441.00
Subcontracted Items (Including all of Item 11)		56%	655,882.00	42%	508,925.00	48%	555,820.00
Subcontracted Items (Excluding all of Item 11)		21%	253,032.00				
39	Borehole Drilling	427.00	89,400.00	425.00	85,200.00	470.00	94,000.00
40	Soundings and Evaluation Tube	53.35	10,670.00	60,000.00	12,600.00	65.00	13,000.00
41	Recharge Well Casing	351.00	61,425.00	350.00	61,250.00	390.00	68,250.00
42	Equipot Pipe	1,116.00	25,690.00	1,115.00	25,600.00	1,310.00	25,000.00
43	Gravel Pack	453.00	4,342.00	455.00	4,370.00	590.00	5,250.00
44	Equipot Tee	3,195.00	6,390.00	3,195.00	6,390.00	4,200.00	8,400.00
45	Bentonite Seal	1,280.00	5,120.00	1,280.00	5,120.00	1,730.00	6,920.00
46	Cement Grouting of Annulus	122.50	21,432.50	125.00	21,875.00	140.00	24,500.00
47	Recharge Well Surface Completion	5,860.00	11,720.00	5,860.00	11,720.00	7,000.00	14,000.00
48	Limited Development, Pile Flush	5,730.00	25,040.00	5,730.00	29,840.00	4,200.00	35,000.00
49	Release on Contract -	1.00	1.00	1.00	1.00	1.00	1.00
TOTAL			2,610,455.00		2,613,995.00		2,626,811.00
TOTAL Schedule I & II			1,719,414.50		1,725,022.00		1,808,372.00
Subcontracted Items (Including all of Item 11)		43%	1,135,172.50	45%	1,009,716.00	48%	1,089,750.00
Subcontracted Items (Excluding all of Item 11)		38%	936,322.50				

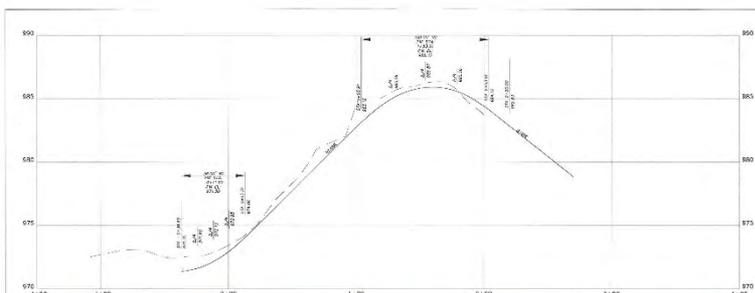
Remaining Available Prop 50 funds = \$1M in 2012



Contract Change Order #1

CCO #1 \$7,000
Realign Access

Public Works Agency



COUNTY OF VENTURA PUBLIC WORKS AGENCY WATERSHED PROTECTION DISTRICT		SAN ANTONIO CREEK SPREADING GROUNDS REHABILITATION REWORK ACCESS ROAD	
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Remote Site Location

Public Works Agency

Before



After





Rehabilitation of Four Ponds

Public Works Agency



March 15, 2010

September 11, 2013



Access Road to Intake Area



Public Works Agency



September 13, 2013



May 23, 2014



Accidental Rupture & Repair of Private Water Line



Public Works Agency



Drilling Four Recharge Wells

Public Works Agency



December 2013



October 2013



April 2014



Trenching 24" HDPE Pipe from Pond 4 to Recharge Wells

Public Works Agency





Heat Fusion Welding HDPE Pipe

Public Works Agency





Preparing to Jack & Bore 36" Steel Casing and 24" HDPE Pipe

Public Works Agency



November 2013





Jack & Bore (Cont.)

Public Works Agency





Jack & Bore (Cont.)





Welding Casing Segments

Public Works Agency



December 3, 2013





SUCCESS! 24" Pipe Daylights in Shoring on Opposite Side



Public Works Agency



Intake Site Preparation

Public Works Agency



October 1, 2013

January 2, 2014





50-Ton Crane to Lift Pre-Cast Concrete Intake Structure

Public Works Agency



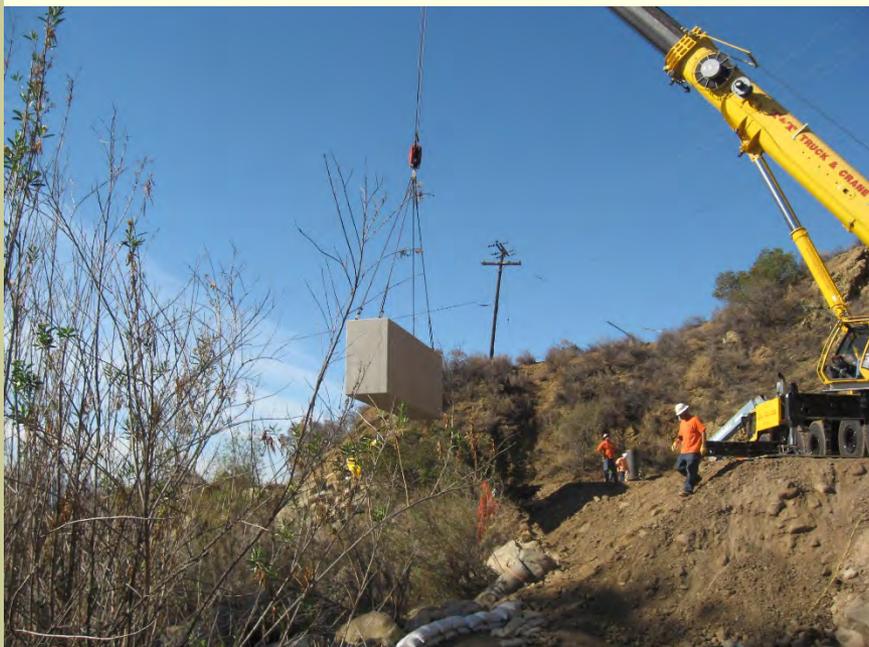
September 10, 2014

Ventura County Watershed Protection District



Intake Structure Placement

Public Works Agency



January 23, 2014





Placement of Actuator Valve Box

Public Works Agency



February 12, 2014





Storm Event – March 1, 2014

Approx. 80 cfs

Public Works Agency





Temporary Stream Gage Near Intake Structure





New Permanent Gage Installed at Grand Avenue Bridge Weir

Public Works Agency





New Edison Power Pole & Meter

Public Works Agency





Relocate House Finch Fledglings

Public Works Agency



Source: CalPhotos

House Finch

Nest Found in Crane Pulley





New Radio Antenna & Power Pole

Public Works Agency



June 6, 2014





Delivery of Actuator Valve & Fish Screen Cleaning Mechanism

Public Works Agency



June 6, 2014



Next Steps

- **Electrical equipment testing** (flow meter, fish screen cleaner, valve & actuator)
- **Final walk-through** & release of contractor
- **Ribbon Cutting Ceremony** (September)
- **Operations Agreement** w/City of Ventura
- Continue **stream flow monitoring** and reporting to NMFS and CDFW
- **Mitigation** implementation and monitoring



On Site and Off Site Mitigation

Public Works Agency



On Site Hydroseed
March 20, 2014

Off Site Giant Reed Removal
November 14, 2013





Monitoring & Reporting

- Annual Flow Monitoring Report
- Annual Steelhead Surveys
- Groundwater Monitoring Plan & Reporting
- Mitigation Monitoring & Reporting
- Maintain Records of Diversion & Use and report annually via eWRIMS



Thank you

Public Works Agency

