



Public Works Agency

*Ventura County
Watershed
Protection District*

San Antonio Creek Spreading Grounds Rehabilitation Project Ojai Valley, CA

Presentation to
Ventura River Watershed Council

August 7, 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



Project Site Vicinity Map

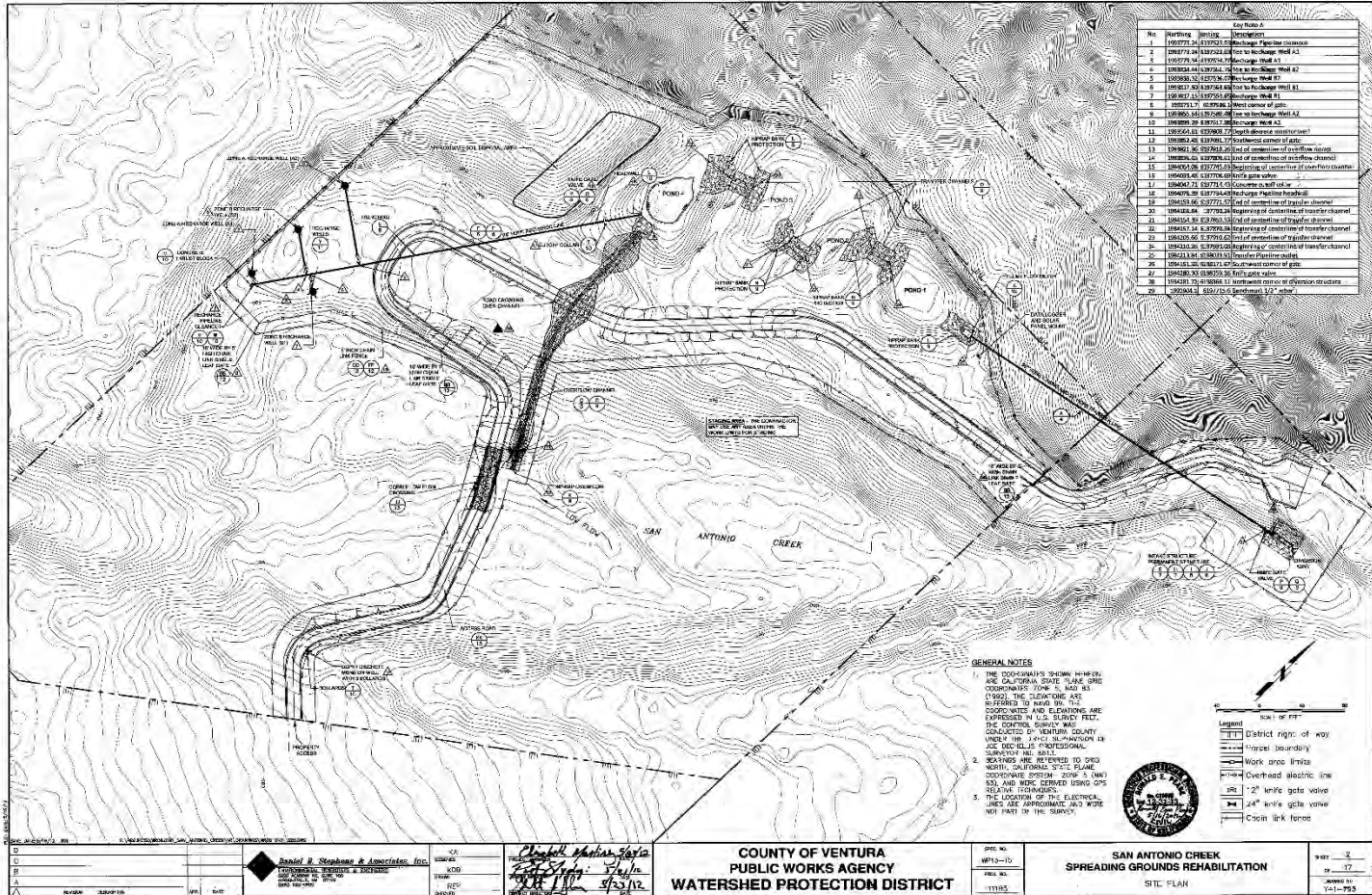
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Project Site Plan

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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 0.8 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



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		Low Bidder		3rd Bidder	
Project Name: San Antonio Creek Spreading Grounds Rehabilitation Project		Toto Enterprises Inc. P O Box 4255 Diamond, CA 95031 805/485-4515 Fax: (805)485-3635		Berlyw Sales, Inc. 80783 Woodside Ave. Ste 201 San Jose, CA 95071 408/952-7711 Fax: (408)258-3515		C A Rasmussen, Inc. 22545 Linnerton Ave Folsom, CA 95105 916/1367-9040 Fax: (916)1367-9097	
Spec No. WP12-22		805/485-4515 Fax: (805)485-3635		408/952-7711 Fax: (408)258-3515		916/1367-9040 Fax: (916)1367-9097	
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 Weir	13,800.00	13,800.00	3,200.00	3,200.00	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	17,050.00	17,050.00	24,100.00	24,100.00	30,900.00	30,900.00
6	Scarfing Ponds	5,750.00	5,750.00	5,800.00	5,800.00	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	18,050.00	18,050.00
9	Top Soil/Gravel	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	15,900.00	15,900.00	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
17	1/2" Top Class Dioxinate Rock Riprap	151.00	149,400.00	111.00	109,800.00	140.00	138,600.00
13	1/4" Top Class Rock Riprap and Filter Blanket	106.00	3,347.00	135.00	4,320.00	170.00	3,840.00
14	Pre-Cast RC Diversion Structure	48,700.00	48,700.00	44,300.00	44,300.00	28,000.00	28,000.00
15	Fish 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" HDPE Recharge Pipeline	143.50	57,320.00	75.00	30,400.00	120.00	48,000.00
21	12" HDPE Pipeline	110.75	15,505.00	53.00	7,260.00	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	Sounding and Evaluation Tube	56.35	11,270.00	53.00	10,600.00	64.00	12,800.00
25	Recharge Well Casing	354.40	57,020.00	350.00	61,250.00	380.00	68,200.00
26	Equipot Pipe	121.18	24,236.00	118.00	23,600.00	130.00	26,000.00
27	Gravel Pack	453.00	4,530.00	455.00	4,550.00	490.00	4,900.00
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	5,168.00	1,290.00	5,120.00	1,730.00	6,920.00
30	Cement Grouting of Annulus	125.50	21,925.00	125.00	21,875.00	140.00	24,500.00
31	Recharge Well Surface Completion	6,830.00	12,890.00	5,860.00	11,720.00	7,000.00	14,000.00
32	Limited Development, Pre-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	40,743.50	21.00	39,705.00	23.00	44,830.00
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
50	Pipe Bolts	995.00	2,985.00	455.00	1,365.00	800.00	2,550.00
36	Low Flow Crossing	20,800.00	20,800.00	8,300.00	8,300.00	17,000.00	17,000.00
27	Hydroseeding	6,685.00	6,685.00	6,455.00	6,455.00	5,200.00	5,200.00
38	Release on Contract -	1.00	1.00	1.00	1.00	1.00	1.00
TOTAL Schedule B:			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%	555,830.00
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	Sounding 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	68,200.00
42	Equipot Pipe	1,116.00	25,690.00	1,115.00	22,600.00	1,310.00	25,000.00
43	Gravel Pack	453.00	4,530.00	455.00	4,570.00	500.00	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	21,431.50	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, Pre-Flush	5,730.00	25,040.00	5,730.00	24,840.00	4,200.00	35,000.00
49	Release on Contract -	1.00	1.00	1.00	1.00	1.00	1.00
TOTAL			2,610,450.00		2,610,000.00		2,620,811.00
TOTAL Schedule B:			1,719,414.50		1,725,020.00		1,808,372.00
Subcontracted Items (Including all of Item 11)		43%	1,185,172.50	45%	1,009,716.00	48%	1,080,750.00
Subcontracted Items (Excluding all of Item 11)		35%	936,322.50				

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



Construction Start September 2013 Rehabilitation of Four Ponds

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March 15, 2010

September 11, 2013



Access Road to Intake Area



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September 13, 2013



May 23, 2014



Drilling Four Recharge Wells

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December 2013



October 2013



April 2014



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

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November 2013





Jack & Bore (Cont.)

Public Works Agency



December 3, 2013





Intake Site Preparation

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October 1, 2013

January 2, 2014





Intake Structure Placement

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January 23, 2014



Storm Event – March 1, 2014

Approx. 80 cfs



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August 7, 2014

Ventura County Watershed Protection District



Temporary Stream Gage Near Intake Structure

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August 7, 2014

Ventura County Watershed Protection District



New Permanent Gage Installed at Grand Avenue Bridge Weir

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August 7, 2014

Ventura County Watershed Protection District



Delivery of Actuator Valve & Fish Screen Cleaning Mechanism

Public Works Agency



June 6, 2014



Next Steps

- **Construction Complete** on July 25, 2014
- **Electrical equipment testing** (flow meter, fish screen cleaner, valve & actuator)
- **Ribbon Cutting** - September 10, 2014
- **Operations Agreement** w/City of Ventura
- Continue **stream flow monitoring** and reporting to NMFS and CDFW



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



Questions?

Public Works Agency



August 7, 2014

Ventura County Watershed Protection District