



# Annual Water Control Management Report For Los Angeles District (SPL) Water Year 2006

## Reservoir Regulation Section Project Areas



Annual Water Control Management Report  
For  
Los Angeles District (SPL)  
Water Year 2006

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## I. Introduction

This report is prepared in accordance with ER 1110-2-240. Its purpose is to assist CESP to provide HQUSACE with necessary information to fulfill legislative reporting requirements and to maintain HQ's ability to guide the Water Control program. In addition, this report serves as a SPL's official documentation of its water control management activities during WY 2006.

There are a total of 16 Corps owned and operated dams, five Section 7 dams, and twelve Section 10\* dams within the Los Angeles District (SPL). Table 1 shows the list of these specific projects.

Dam Name	Lake	State	Gross Pool (1000 AF)	Corps - Sec7 - Sec10
Painted Rock		AZ	2,500	Corps
Alamo	Alamo	AZ	995	Corps
Prado		CA	188	Corps
Mojave		CA	90	Corps
Whitlow Ranch		AZ	36	Corps
Whittier Narrows		CA	35	Corps
Santa Fe		CA	32	Corps
Hansen		CA	25	Corps
Sepulveda		CA	17	Corps
Pine Canyon		NV	8	Corps
San Antonio		CA	8	Corps
Carbon Canyon		CA	7	Corps
Mathews Canyon		NV	6	Corps
Brea		CA	4	Corps
Fullerton		CA	0.8	Corps
Lopez		CA	0.4	Corps
Hoover	Mead	AZ	27,000	Sec7
Modified Roosevelt	Roosevelt	AZ	2,209	Sec7
Seven Oaks		CA	148	Sec7
Twitchell		CA	203	Sec7
Tat Momolikot		AZ	198	Sec7
Lytle Creek Intake Structure		CA	None	Sec10
Adobe Dam		AZ	19.4	Sec10
Blue Diamond Detention Basin		NV	2.3	Sec10
Cave Buttes Dam		AZ	28	Sec10
Cave Creek Dam		AZ	14	Sec10
Dreamy Draw Dam		AZ	0.45	Sec10
New River Dam		AZ	39.5	Sec10
R-4 Detention Basin		NV	0.37	Sec10
Red Rock Detention Basin		NV	2	Sec10
Tahchevah Dam		AZ	2	Sec10
Trilby Wash Detention Basin (McMicken Dam)		AZ	38.4	Sec10
Tropicana Detention Basin		NV	0.8	Sec10

\* Section 10 Projects are small local protection flood control projects that are turned over to local interests for physical operation and maintenance after completion. See CFR Title 33, Part 208 Section 10

## II. Flood Damages Prevented

Table 2 summarizes the total damages prevented by SPL's flood control projects, by State, within the District. Table 3 summarizes the damages prevented by the individual projects.

STATE	Reservoir	Levee	TOTAL
AZ	\$2,968	0.0	\$2,968
CA	\$111,542	\$14,980	\$126,522
NV	\$2,236	0.0	\$2,236
TOTAL	\$116,746	\$14,980.00	\$131,726

BASIN	STATE	CUMULATIVE THRU FY-06	FY-06 LEVEE	FY-06 RESERVOIR	CUMULATIVE THRU FY-06
<b>CALIFORNIA Projects</b>					
Hansen Dam	CA	\$475,177		\$0	\$475,177
Lopez Dam	CA	\$170,328		\$0	\$170,328
Santa Fe Dam	CA	\$514,319		\$4,930	\$519,249
Sepulveda Dam	CA	\$2,321,497		\$50,060	\$2,371,557
Whittier Narrows Dam	CA	\$1,823,997		\$4,930	\$1,828,927
Devil, East Twin, & Warm Creeks Channels	CA	\$30,519		\$0	\$30,519
Mill Creek Levees	CA	\$44,865		\$0	\$44,865
Riverside Levees	CA	\$2,869		\$0	\$2,869
San Jacinto Levees & Baustista Creek Channels	CA	\$5,618		\$0	\$5,618
Brea Dam	CA	\$45,346		\$0	\$45,346
Carbon Canyon Dam/Channel	CA	\$267,900		\$0	\$267,900
Fullerton Dam	CA	\$1,357,284		\$15,426	\$1,372,710
Lytle & Cajon Creeks Channel Improvements	CA	\$61,039		\$0	\$61,039
Prado Dam	CA	\$2,336,353		\$0	\$2,336,353
San Antonio Dam/Channel, Chino Creek	CA	\$111,500		\$0	\$111,500
Banning Levee	CA	\$145			\$145
Chino Canyon Improvements	CA	\$1,700			\$1,700
City Creek Levee	CA	\$2,400			\$2,400
Lytle & Warm Creeks	CA	\$0			\$0
Mojave River Dam	CA	\$772			\$772
Needles	CA	\$0			\$0
Oro Grande Wash Channel	CA	\$600			\$600
Quail Wash Levee	CA	\$0			\$0
Rose Creek Channel	CA	\$1,000			\$1,000
San Diego River Levee	CA	\$0			\$0
Santa Clara River Levee	CA	\$333,204			\$333,204
Stewart Canyon Debris Basin/Channel Improvements	CA	\$2,075			\$2,075
Tijuana River Basin	CA	\$0			\$0

Table 3 (cont'd)  
 FY 2006 Damaged Prevented for SPL Projects  
 (In Thousands of Dollars)

BASIN	STATE	CUMULATIVE THRU FY-06	FY-06 LEVEE	FY-06 RESERVOIR	CUMULATIVE THRU FY-06
Sespe Creek	CA	\$2,925		\$0	\$2,925
Santa Paula Creek	CA	\$0		\$0	\$0
<b>CALIFORNIA Subtotal</b>		<b>\$12,094,626</b>	<b>\$14,980</b>	<b>\$75,346</b>	<b>\$12,184,952</b>
BASIN	STATE	CUMULATIVE THRU FY-06	FY-06 LEVEE	FY-06 RESERVOIR	CUMULATIVE THRU FY-06
<b>ARIZONA Projects</b>					
Alamo Dam	AZ	\$21,511		\$0	\$21,511
Painted Rock Dam	AZ			\$0	\$0
Allenville	AZ	\$0			\$0
Whitlow Ranch Dam	AZ	\$1,088		\$0	\$1,088
Cave Buttes Dam	AZ	\$0			\$0
Dreamy Draw Detention Basin	AZ	\$0			\$0
New River Dam	AZ	\$0			\$0
<b>ARIZONA Subtotal</b>		<b>\$22,599</b>	<b>\$0</b>	<b>\$0</b>	<b>\$22,599</b>
<b>NEVADA Projects</b>					
Mathews Canyon Dam	NV	\$0		\$0	
Pine Canyon Dam	NV	\$0		\$0	
<b>NEVADA Subtotal</b>		<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>SECTION 7 Projects</b>					
Hoover Dam & Lake Mead	AZ	\$14,491		\$2,968	\$17,459
Hoover Dam & Lake Mead	CA	\$21,954		\$4,496	\$26,450
Hoover Dam & Lake Mead	NV	\$10,917		\$2,236	\$13,153
Santa Maria Valley Levees/Twitchell Dam & Res	CA	\$6,406		\$31,700	\$38,106
Santa Rosa Wash (Tat Momolikot Dam & Lake St. Clair)	AZ	\$0		\$0	\$0
Seven Oaks Dam	CA	\$19,170		\$0	\$19,170
Modified Roosevelt Dam	AZ	\$0		\$0	\$0
<b>Section 7 Subtotal</b>		<b>\$72,938</b>	<b>\$0</b>	<b>\$41,400</b>	<b>\$114,338</b>
<b>SPL SUMMARY</b>					
Arizona		\$37,090	\$0	\$2,968	\$40,058
California		\$12,142,156	\$14,980	\$111,542	\$12,268,678
Nevada		\$10,917	\$0	\$2,236	\$13,153
<b>Totals</b>		<b>\$12,190,163</b>	<b>\$14,980</b>	<b>\$116,746</b>	<b>\$12,321,889</b>

### III. Status of Water Control Manuals and Plans

Table 4 shows the status of Water Control Manuals and Plans for Projects within the Los Angeles District (SPL)

TABLE 4 Status of Water Control Manuals in SPL									
Reservoir Project	Doc Type	Stream	Owner	Last Approved	Revision Scheduled	Projected Revision Completion Date	Priority by Need	Revision Budgeted (Yes/No)	Known Issues
Alamo Dam	WCM	Bill Williams River	COE	Jan-1968	Completed				
Brea Dam	WCM	Brea Ck	COE	May 1990	Jan-2009	Jan 2011	Low		
Carbon Canyon Dam	WCM	Carbon Canyon Ck	COE	Dec 1990	Jan-2009	Jan 2011	Low		
Fullerton Dam	WCM	Fullerton Ck	COE	May 1989	Jan-2009	Jan 2011	Low		
Hansen Dam	WCM	Tujunga Wash	COE	Nov 1990	Jan-2009	Jan 2011			A feasibility study for seasonal water conservation was approved; however, a further engineering study and a new manual containing the revised operations are necessary prior to implementation of the new water conservation plan. The local sponsor (LACDPW) needs to finance a portion of the study and the new water control manual. To date, no discussion has taken place between SPL's Planning Division and local sponsor since the approval of the feasibility study. This clouds the issue of setting a final completion date for the water control manual revision.
Hoover Dam	WCM	Colorado River	USBR	Dec 1982	Unscheduled				
Lopez Dam	WCM	Pacoima Wash	COE	Jan 1986	Unscheduled		Low		The project is designed to function as a debris basin, however, the entire storage allocated for debris accumulation has completely filled. SPL is currently looking at several plans regarding the project, such as restoring the project design storage and turning ownership over to the local sponsor. However, these plans are complicated by the fact that some areas in the reservoir are considered environmentally sensitive. This clouds the issue of setting a final completion date for the WCM revision.
Modified Roosevelt Dam	WCM	Salt River	USBR	Sep 1997	Unscheduled				

TABLE 4 (cont'd)  
Status of Water Control Manuals in SPL

Reservoir Project	Doc Type	Stream	Owner	Last Approved	Revision Scheduled	Projected Revision Completion Date	Priority by Need	Revision Budgeted (Yes/No)	Known Issues
Painted Rock Dam	WCM	Gila River	COE	Jun 1962	In Progress			Yes	The manual and the EA is scheduled to be ready for ITR in the 1 <sup>st</sup> half of the current calendar year.
Prado Dam	Interim WCM	Santa Ana River	COE	May 2003	In Progress	Oct 2008	5	(Yes) Prelim plan	Construction to raise the dam embankment and build a new outlet works is in progress. The last approved Interim WCM is still in effect, which supplements the WCM approved in Sep 1994. An update of the Interim Plan to utilize the newly completed features of the dam, including the new outlet works is necessary prior to the demolition of the existing outlet works. The current construction schedule shows that the existing outlet works will still be in operation for the 2008 flood season, which means that the updated Interim WCP must be completed prior to the start of the 2009 flood season.
Prado Dam	WCM	Santa Ana River	COE	Sep 1994	Unscheduled				A preliminary water control plan is required after the completion of the overall project. Then, one year after the completion of the entire project, a new water control manual for the modified dam is required. The current construction contract does not include the raising of the spillway, since the acquisition of the additional reservoir lands has not been accomplished by the local sponsor (Orange County) yet. To date, there is not definite schedule for the raising of the spillway.
San Antonio Dam	WCM	San Antonio Ck	COE	May 1991	Jan-2009	Jan 2011			
Santa Fe Dam	WCM	San Gabriel River	COE	Oct 1967	In Progress	Draft - May 2007	3	Yes	The revised draft WCM is planned to be ready for ITR by May 2007. A planning study to revise project operations to provide additional water conservation has been approved. Before the revised operation can be implemented however, the local sponsor needs to finance structural changes in the reservoir, further, engineering studies, and another revision of the WCM. This clouds the issue of setting a final completion date for the WCM revision.

TABLE 4 (cont'd)

Status of Water Control Manuals in SPL

Reservoir Project	Doc Type	Stream	Owner	Last Approved	Revision Scheduled	Projected Revision Completion Date	Priority by Need	Revision Budgeted (Yes/No)	Known Issues
Sepulveda Dam	WCM	Los Angeles River	COE	May 1989	Jan-2009	Jan 2011			
Seven Oaks Dam	WCM	Santa Ana River	SB, Orange, Riverside Co	Sep 2003	Unscheduled				The project owners have not requested a revision of the manual, however, future hydraulic testing and studies to investigate water conservation opportunities and water quality issues may result in a request to update the WCM.
Tat Momolikot Dam	WCM	Santa Rosa Wash	BIA	Dec 1990	Unscheduled				
Twitchell Dam	WCM	Cuyama River	USBR	Aug 1960	In Progress	Draft – Sep 2007	5		The revised draft WCM is planned to be ready for ITR by Sep 2007. Local stakeholders have request a revision of the water control manual to incorporate a repeated deviation to store water in the flood control pool late in the flood season. The project owner, although not opposed to a revision, has not requested one and odes not have funds to participate. At this point in time, it is unclear where the resources to complete the required environmental documentation will come from, therefore, the manual is not scheduled beyond the draft stage. Note that the Santa Maria Levees downstream will not be certified by the Corps for the FEMA Map Modernization effort, which further complicates the revision of the WCM.
Whittier Narrows Dam	WCM	Rio Hondo/San Gabriel River	COE	Oct 1957	In Progress	Draft – Jun 2007	2	Yes	The revised draft WCM is planned to be ready for ITR by June 2007. This draft WCM does not contain the recently approved operation for additional watercon. The completion date may change if approved modifications to operations for water conservation are implemented.
Mathews Canyon Dam	WCM	Mathews Canyon Wash	COE	Sep 2000	Unscheduled				
Mojave Dam	WCM	Mojave River	COE	Aug 1974	Jan-2009	Jan 2011			
Pine Canyon Dam	WCM	Pine Canyon Wash	COE	Oct 1974	In Progress	Draft – Oct 2007	2	Yes	The revised draft WCM is planned to be ready for ITR by October 2007.
Whitlow Ranch Dam	WCM	Queen Creek	COE	Oct 1975	Jan-2009	Jan 2011			

#### **IV. District Water Control Staffing and Facilities**

Table 5 lists Water Control staffing within the Los Angeles District (SPL).

TABLE 5. CESPL-LOS ANGELES DISTRICT Reservoir Regulation Section			
Tracy, Brian G.	CESPL-ED-HR	213-452-3527	GS-0810-13
Craig, Christopher K	CESPL-ED-HR	626-401-4028	GS-1316-09
Downing, Daniel J	CESPL-ED-HR	626-401-4032	GS-1316-11
Gilbert, Moon K.	CESPL-ED-HR	213-452-3533	GS-0810-11
Kakimoto, Tetsuya	CESPL-ED-HR	626-401-4029	GS-1316-09
Kuboshige, Robert M.	CESPL-ED-HR	213-452-3435	GS-0810-11
Luo, Wendy L	CESPL-ED-HR	213-452-3532	GS-0810-11
Meneses, Melvin M	CESPL-ED-HR	213-452-3530	GS-0810-12
Peacock, Gregory	CESPL-ED-HR	213-452-3536	GS-0810-12
Pedroza, Carlos	CESPL-ED-HR	626-401-4030	GS-1316-09
Queen, Donald R	CESPL-ED-HR	213-452-3531	GS-0334-12
Wallace, Darius B	CESPL-ED-HR	626-401-4033	GS-1316-07
Wong, Cynthia	CESPL-ED-HR	213-452-3560	GS-0810-11

#### **V. USGS and NWS Cooperative Program Summary**

Table 6 provides a summary of District USGS and NWS Cooperative Program Costs for WY 2006.

TABLE 6 FY05 Summary of USGS and NWS Cooperative Program Costs					
District	NWS Coop Reporting Network	AFOS	GOES DOMSAT	USGS Coop Stream Gaging	Total Cost to District
CESPL	\$0	\$0	\$0	\$272,040	\$272,040
Source: District Data Call					

## **VI. Significant Events – SPL Los Angeles District WY06 (Oct 1 – Sep 30)**

### **1. SOUTHERN CA PROJECTS**

Water Year (WY) 2006 brought 12.73 inches of rain to downtown Los Angeles, making it a less than a normal year. A few storm events were observed in Southern California at various times from January through April 2006. Among these storms, the most intense events occurred during late February and mid March. The following tables and paragraphs summarize the significant events at LACDA and SAR projects, respectively, during the water year.

Project	Dates of Event	Maximum Inflow (cfs)	Maximum WSE (ft)	Maximum Outflow (cfs)
Brea Dam	Feb 28 2006	770	221.20	690
Fullerton Dam	Mar 28 2006 Apr 04 2006	780	272.61	270
Hansen Dam	Apr 5 2006	430	994.05	530
Lopez Dam *	Mar 15 2006	-	1257.90	-
Mojave River Dam	Feb 28 2006	5,400	3009.05	5,300
Santa Fe Dam	Feb 28 2006 Apr 06 2006 May 09 2006	2,600	438.50	430
Sepulveda Dam	Jan 02 2006	10,400	684.90	8,500
Whittier Narrows Dam (Rio Hondo)	Feb 28 2006 Mar 28 2006	13,340	202.10	8,000
Whittier Narrows Dam (San Gabriel)	Jan 02 2006 Mar 28 2006	10,400	211.85	5,000

\* Note: Maximum Inflow and Outflow information for Lopez Dam is not available. See discussion below.

### **BREA AND FULLETERON DAMS**

The most intense events for Brea and Fullerton Dams were observed during the February and March 2006 storms, respectively (Table A). The outlet gates at both dams were operated to make flood control releases up to their respective available channel capacities. Notifications, as necessary, were made to parties located either upstream or downstream of the project, affected by water impoundment or flood control releases. No restrictions that prevented normal operations of the dams were observed during this water year.

### **HANSEN DAM**

The peak event for Hansen Dam was observed during the early April 2006 storm, and a maximum water surface elevation of 994.05 feet was reached within the reservoir. No gate adjustments were necessary throughout the water year, and the project operation during this peak event did not require any notification to parties located upstream or downstream of the reservoir.

### LOPEZ DAM

Lopez Dam is a debris basin where the storage allocated for debris accumulation has been completely filled. It is a gated structure (one gate with a maximum opening of 5-feet), however, adjustments are rarely necessary throughout the water year as the project rarely receives inflow from local runoff, except during times of significant storm events, or when the LACDPW makes releases from their project upstream, Pacoima Dam, for their operation via the Lopez reservoir, to their spreading grounds just downstream of Lopez Dam. During WY2006, the reservoir generally remained empty and gate adjustments were not necessary.

Lopez Dam was once equipped with telemetry instrumentation that reported water surface elevation information, however, due to heavy sedimentation within the reservoir, this instrumentation became difficult to maintain and therefore, completely removed in May 1995. There is a dam tender on staff that provides one report daily of the reservoir staff reading during the flood season months (Nov 15 thru Apr 15), and reports once a week during non-flood season months. Because of the infrequency of the reports made, it is difficult to determine the times at which the maximum water surface elevation could have been achieved, much less, make a determination as to what the maximum inflow and outflow may have been for those events.

### MOJAVE RIVER DAM

Five storm events resulted in significant inflows into the Mojave River Dam project during WY2006, with the maximum event observed in late February 2006. An early January 2006 storm brought inflows of up to 3,100 cfs, resulting in a maximum water surface elevation of 3001.03, and an outflow of 2,700 cfs. Following the February event, three other storms were observed during late March and early April 2006 with peak inflows of 3,500 cfs, 3,200 cfs, and 1,800 cfs, resulting in water surface elevations of 3002.27, 2999.80, and 2997.67 feet, respectively. The corresponding outflows to these last three events were 3,100 cfs, 2,300 cfs, and 1,700 cfs, respectively.

Mojave River Dam is an ungated project where all inflow received is passed through the dam. As the water surface elevation rises and the corresponding discharge increases from the project, notifications are made to affected parties located downstream. Notifications and coordination took place, as necessary, for all the events discussed above.

### SANTA FE DAM

Operation of the gates was minimal as the project was not operated for flood control. For most of the water year, the gates were set to pass a maximum of 400 cfs through the project, while the LACDPW gradually drained their upstream project, the San Gabriel Dam. Inflows into the project were mainly from the LACDPW's upstream operation, which varied from as little as 200 cfs to 2,600 cfs. The reservoir maximum water surface elevation during the year of 438.5 feet was recorded on 6 April 2006.

In the spring of 2006, the Renaissance Faire event was held at the Santa Fe Dam recreation area.

The fair grounds facilities were in operation from April 8 through May 21. Staff from the Los Angeles District's Operations Branch performed an inspection of their facilities to ensure that their operation stays within the Corps' requirements. The Corps and the LA County Department of Parks and Recreation are currently in negotiations regarding their future setup within the reservoir. The event is expected to return in 2007.

#### SEPULVEDA DAM

The most intense storm event for Sepulveda Dam was observed during the January 1-3, 2006 storm (Table A). The water surface elevation resulted in closure of Burbank Boulevard to vehicular traffic by the LAPD. Other relatively less intense storm events that also resulted in closure of Burbank Boulevard occurred on February 27-28, 2006 and March 27-28, 2006, where the maximum water surface elevations were 682.30 feet and 683.30 feet, respectively. All releases made from the dam for all of these events were contained well within the downstream channel capacities, therefore, adjustments of the gates were not necessary. Notifications, as necessary, were made to parties located either upstream or downstream of the project, affected by water impoundment or flood control releases. No restrictions that prevented normal operations of the dams occurred during this water year.

#### WHITTIER NARROWS DAM

Towards the end of the WY2005 flood season, undermining and major deterioration of the stabilizer under the Rosemead Boulevard bridge over the cross-over channel and exposure of a sewer line (both located within the reservoir) were discovered. This was a result of major vegetation growth in the cross-over channel which constricted the effective width of the channel during the coincident occurrence of major cross-over flows and major releases on the Rio Hondo side. This condition led to initial releases greater than scheduled rates on the San Gabriel side in order to minimize the frequency of cross-over flows. Repairs to the sewer line and the Rosemead bridge stabilizer, as well as the vegetation removal within the cross-over channel were completed prior to the flood season. Normal operations on the San Gabriel side (spillway gates) of the dam resumed in February 2006.

Project	Dates of Event	Maximum Inflow (cfs)	Maximum WSE (ft)	Maximum Outflow (cfs)
Carbon Canyon Dam	Feb 28 2006	130	406.90	100
Prado Dam	Feb 28 2006 Apr 5 2006	11,300	505.65	5,000
San Antonio Dam	Apr 6 2006 Apr 19 2006	180	2162.34	100
Seven Oaks Dam*	Apr 6 2006	450	2209.20	500

Note: Seven Oaks Dam is a Section 7 Project located within the Santa Ana Basin. Discussion on Seven Oaks Dam is included as part of section VII "Supplemental Information" of this report.

### CARBON CANYON DAM

The peak event for Carbon Canyon was observed during the late February 2006 storm, and a maximum water surface elevation of 406.90 feet was reached within the reservoir. No gate adjustments were necessary throughout the water year, and the project operation during this peak event did not require any notification to parties located upstream or downstream of the reservoir.

### PRADO DAM

The construction of the new outlet works and the immediate downstream channel continued during Water Year 2006. The coffer dam that was in place to protect the upstream construction of the new future Prado Dam outlet works was completely removed in December 2005, as temporary bulkheads and the new future outlet gates have been installed.

When it became necessary to cut back releases from the dam to accommodate various construction and maintenance activities, the proposed operations were coordinated in advance with construction contractors, the OCWD, and the OCSD. The USFWS was also notified several times to ensure that reservoir impoundment or cutback of releases from the dam would not adversely impact the endangered species, the Least Bell's Vireo and the Santa Ana Suckers, located within the reservoir and along downstream channel, respectively.

In late September 2006, a Periodic Inspection was performed at Prado Dam. Due to on-going construction, visual inspection of the existing outlet works was limited to the control house, the upstream reservoir, and the main embankment. The dam's main embankment was also being raised as part of the modification, and it was learned from the inspection that the access roads to the control tower was not available for the dam tender to access the control tower. In addition, the Edison power pole that supplied power to operate the main gates had been removed due to upstream construction activities, and power supply was temporarily restricted to the backup generators, as provided by the construction contractor. The control house is also equipped with a backup generator for gate operations, but they were not necessary as the contractor's generator was sufficient for that time being.

## SAN ANTONIO DAM

Operation at San Antonio Dam was minimal releases made from the project were coordinated with the downstream water users. Flood control releases were not necessary during this water year. There was still on-going gravel mining activities within the San Antonio reservoir during WY 2006, where a total of 202.9 acre-feet of sediment and 53.0 acre-feet of silt were removed.

### 2. ARIZONA, AND NEVADA PROJECTS

During WY 2006, various storm events had brought in some inflows particularly to the Mojave River Dam project. With the exception of Mojave River Dam, Alamo Dam and other Arizona projects (Painted Rock and Mojave River Dams) along with the Nevada projects (Mathews and Pine Canyon Dams), have all remained empty throughout the water year (Table C.).

Project	Dates of Event	Maximum Inflow (cfs)	Maximum WSE (ft)	Maximum Outflow (cfs)
Alamo Dam	Oct 3 2005 Mar 13 2006	- -	1133.81	2,000
Mathews Canyon Dam	-	0	5420.00	0
Painted Rock Dam	-	0	530.05	0
Pine Canyon Dam	Sep 22 2006	0	5604.00	0

#### ALAMO AND PAINTED ROCK DAMS – Arizona Projects

As for Alamo Dam, the reservoir level started the water year at the peak elevation of 1133.81 feet, NGVD. During the recession of the impoundment, the Bill Williams River Corridor Technical Committee proposed that the Corps maintain additional water above the nominal target elevation of 1125 feet in order to have sufficient water for a “spring flush” to benefit the riparian habitat downstream. In March 2006, the “spring flush” was performed, where a maximum release of 2,000 cfs was maintained for two days, immediately after which, the flows were cut back to 400 cfs. Following the cutback to 400 cfs, the releases were then gradually cut back 20 cfs each day until the scheduled required riparian release was achieved.

A new bypass valve was installed in August 2005 to repair the leak originating from the valve, but soon after the new valve installation, it was found that the connecting pipe downstream of the valve had also developed a leak. The pipe, however, was able to be repaired with a patch, and riparian release rates were once again possible by November 2005.

Throughout most of the water year, the elevator at the Alamo Dam control house had ceased to function, which made it difficult for the dam tenders to access the bypass chamber to make riparian release adjustments. During the warmer summer months, with hydrogen sulfide gas levels increasing to unsafe levels, it was impossible for the dam tenders to safely access the gate chamber to make riparian release adjustments. During these times, a pulse release schedule, using the main outlet gates, was implemented to provide compensation flows.

Notifications and coordination took place, as necessary, between the Corps and affected parties including Planet Ranch, and the Central Arizona Project. Flood control notifications were provided via email list to these parties and numerous others that are affected by Alamo Dam's releases.

The Painted Rock Dam reservoir had been empty since August of 2005. There were no significant inflows observed during WY 2006 and remained empty throughout the water year.

#### MATHEWS AND PINE CANYON DAMS – Nevada Projects

Mathews and Pine Canyon Dams are both ungated projects that are designed to work in conjunction near a small town called Caliente in Nevada. Both reservoirs rarely received inflow from local runoff, except during times of significant storm events. Both reservoirs had remained empty throughout water year 2006.

### **VII. Supplemental Information**

The following is a discussion on Seven Oaks Dam during WY2006. Although Seven Oaks Dam has been officially turned over to the local sponsors in October 2003 for regulation and operation, the Los Angeles District, Corps of Engineers maintained involvement with this project in terms of the construction repairs to the outlet works and providing regulation guidance, as needed, by the Orange County Resource Development and Management Department (OCRDMD) during the flood seasons.

- During WY 2005, prototype testing of the RO gate releases in early March resulted in failure of an approximately 30-foot long section of the outlet tunnel invert. The remaining pool was evacuated through the LF gate, the MDL, and the MDLE in order to allow for repairs. Repairs to the damaged slab section began in early WY 2006 and continued throughout the water year.
- Reservoir operation during tunnel slab repairs throughout WY 2006 continued in accordance with the approved Water Control Plan, and the releases coordinated as appropriate to satisfy the downstream water users' requirements. The peak water surface elevation recorded during the water year was 2209.20 feet, which slightly exceeds the current top of debris pool elevation of 2200 feet, NGVD, however, no flood control releases were necessary.

The following are improvements made during WY 2006 to the District's Water Control Data System (WCDS) and the Corps Water Management System (CWMS):

- Select SPL project data was made available to web browser-enabled cellular phones.
- A new Los Angeles Telemetry System (LATS) Central server was deployed to the Baseyard.
- A new Corps Water Management System (CWMS) server was configured and is currently operational.
- A new alarm notification package based on CWMS data was developed. Alarm notifications are made via email, printer and cellular phone messages.
- A new CWMS Oracle database application programming interface (API) was provided by the Hydrologic Engineering Center (HEC). All new web scripting was locally developed utilizing this new API. These scripts are used to disseminate CWMS data via intranet web servers.
- Jython servlets utilizing the new database API and running on a *Tomcat* web server were developed and deployed. These servlets more rapidly return data plots and tables to end users.

The following are changes made to the Gage/Telemetry system for LA District's projects during FY 2006:

- Greater Los Angeles area, California: The LATS (Los Angeles Telemetry System) **VHF** radio based telemetry system, has now been completely converted to operate in narrow band mode. The sixty nine remote data collection sites, transmit collected information to the district via two mountaintop repeaters.
- Prado Dam, California: The completion of the lower portion of the permanent outlet channel required the construction of a second temporary gaging station complete with GOES (satellite) and LATS telemetry. Construction of the permanent downstream gaging station (SAR7) is on schedule.
- Data from the gaging station, Santa Ana River above Seven Oaks Dam (SARO) was determined to be no longer needed and the station was discontinued during the period.

### **VIII. Water Control Plan Deviations for WY 2006**

None for SPL.

## IX. Status of O&M Funding

<b>Table 7.</b>				
<b>O&amp;M Funding Information for</b>				
<b>SPD Water Control Activities</b>				
<b>(In Thousands of Dollars)</b>				
<b>FOA/HQ</b>	<b>Actual FY2006</b>	<b>Budgeted FY2007</b>	<b>Budgeted FY2008</b>	<b>Budgeted FY2009</b>
SPL Activities	\$2,916	\$3,154	\$4,917	\$4,984
SPD Bill Back*	\$0	\$0	\$0	\$0
<b>SPL Total</b>	<b>\$2,916</b>	<b>\$3,154</b>	<b>\$4,917</b>	<b>\$4,984</b>

\* Note: SPD Bill Back stopped in FY 2005.