Technical Appendices

Initial Study/Mitigated Negative Declaration

Sunset Upper Debris Basin Dam Modification Project County of Los Angeles, California

Prepared for

County of Los Angeles
Department of Public Works
Water Resources Division
900 South Fremont Avenue, Second Floor
Alhambra, California 91803

Prepared by

BonTerra Consulting
225 South Lake Avenue, Suite 1000
Pasadena, California 91101
T: (626) 351-2000 F: (626) 351-2030

February 2013

APPENDIX A

AIR QUALITY AND GREENHOUSE GAS ANALYSIS: CalEEMod DATA

Sunset Debris Basin

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	1	Acre
Other Non-Asphalt Surfaces	1	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Los Angeles Department of Water & Power
Climate Zone	12		2.2		
		Precipitation Freq (Days)			
			31		

1.3 User Entered Comments

Project Characteristics -

Land Use - Assumes a maximum impacted area of 0.25 acres. Assumed 0.2 for the non-paved areas and 0.05 for the paved access road (2,400 sqft)

Construction Phase - Demo 4/16-5/11; Grad 5/12-6/29; Dam const 7/2-9/18;
Geobrugg 8/20-24; Pave 9/19-28; 20-35-57-5-8

Off-road Equipment - Pave-Loader, Roller

On-road Fugitive Dust - 25 mph for local roads

Demolition - 50 cubic yards at 145#/cubic ft=98 tons

Grading - maximum impacted area = 0.25 acres

Construction Off-road Equipment Mitigation - water 2x per day

Off-road Equipment - Demo-Saw, dozer, 1 loader

Off-road Equipment - Grading-dozer, 2 loader/backhoe, 1 grader

Off-road Equipment - Dam site-2 mixer, 2 forklift, 2 loader, 1 welder, 1 other

Off-road Equipment - Geobrugg - loader, generator (4 drill)

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	4.40	34.42	20.85	0.04	5.43	2.00	7.28	2.90	2.00	4.74						3,805.57
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	4.40	34.42	20.85	0.04	2.53	2.00	4.37	1.31	2.00	3.15						3,805.57
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.10	0.00	0.10	0.00	0.00	0.00						0.00
Off-Road	1.71	11.91	7.55	0.01		0.89	0.89		0.89	0.89						1,169.53
Total	**1.71**	**11.91**	**7.55**	**0.01**	**0.10**	**0.89**	**0.99**	**0.00**	**0.89**	**0.89**						**1,169.53**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.03	0.30	0.15	0.00	0.23	0.01	0.25	0.00	0.01	0.01						41.48
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.05	0.06	0.65	0.00	0.12	0.00	0.13	0.00	0.00	0.01						103.08
Total	**0.08**	**0.36**	**0.80**	**0.00**	**0.35**	**0.01**	**0.38**	**0.00**	**0.01**	**0.02**						**144.56**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.05	0.00	0.05	0.00	0.00	0.00						0.00
Off-Road	1.71	11.91	7.55	0.01		0.89	0.89		0.89	0.89						1,169.53
Total	**1.71**	**11.91**	**7.55**	**0.01**	**0.05**	**0.89**	**0.94**	**0.00**	**0.89**	**0.89**						**1,169.53**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.03	0.30	0.15	0.00	0.23	0.01	0.25	0.00	0.01	0.01						41.48
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.05	0.06	0.65	0.00	0.12	0.00	0.13	0.00	0.00	0.01						103.08
Total	**0.08**	**0.36**	**0.80**	**0.00**	**0.35**	**0.01**	**0.38**	**0.00**	**0.01**	**0.02**						**144.56**

3.3 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.28	0.00	5.28	2.90	0.00	2.90						0.00
Off-Road	4.33	34.35	20.04	0.03		1.84	1.84		1.84	1.84						3,344.37
Total	**4.33**	**34.35**	**20.04**	**0.03**	**5.28**	**1.84**	**7.12**	**2.90**	**1.84**	**4.74**						**3,344.37**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.07	0.07	0.81	0.00	0.15	0.00	0.16	0.00	0.00	0.01						128.85
Total	**0.07**	**0.07**	**0.81**	**0.00**	**0.15**	**0.00**	**0.16**	**0.00**	**0.00**	**0.01**						**128.85**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.37	0.00	2.37	1.30	0.00	1.30						0.00
Off-Road	4.33	34.35	20.04	0.03		1.84	1.84		1.84	1.84						3,344.37
Total	**4.33**	**34.35**	**20.04**	**0.03**	**2.37**	**1.84**	**4.21**	**1.30**	**1.84**	**3.14**						**3,344.37**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.07	0.07	0.81	0.00	0.15	0.00	0.16	0.00	0.00	0.01						128.85
Total	**0.07**	**0.07**	**0.81**	**0.00**	**0.15**	**0.00**	**0.16**	**0.00**	**0.00**	**0.01**						**128.85**

3.4 Upper Dam Site Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.28	24.36	14.01	0.03		1.45	1.45		1.45	1.45						3,130.04
Total	**3.28**	**24.36**	**14.01**	**0.03**		**1.45**	**1.45**		**1.45**	**1.45**						**3,130.04**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**0.00**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.28	24.36	14.01	0.03		1.45	1.45		1.45	1.45						3,130.04
Total	**3.28**	**24.36**	**14.01**	**0.03**		**1.45**	**1.45**		**1.45**	**1.45**						**3,130.04**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**0.00**

3.5 Geobrugg installation - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.01	6.76	4.38	0.01		0.55	0.55		0.55	0.55						675.30
Total	**1.01**	**6.76**	**4.38**	**0.01**		**0.55**	**0.55**		**0.55**	**0.55**						**675.30**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**0.00**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.01	6.76	4.38	0.01		0.55	0.55		0.55	0.55						675.30
Total	**1.01**	**6.76**	**4.38**	**0.01**		**0.55**	**0.55**		**0.55**	**0.55**						**675.30**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**0.00**

3.6 Paving - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.27	8.06	5.35	0.01		0.70	0.70		0.70	0.70						776.00
Paving	0.02					0.00	0.00		0.00	0.00						0.00
Total	**1.29**	**8.06**	**5.35**	**0.01**		**0.70**	**0.70**		**0.70**	**0.70**						**776.00**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.03	0.03	0.41	0.00	0.08	0.00	0.08	0.00	0.00	0.00						64.43
Total	**0.03**	**0.03**	**0.41**	**0.00**	**0.08**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**						**64.43**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.27	8.06	5.35	0.01		0.70	0.70		0.70	0.70						776.00
Paving	0.02					0.00	0.00		0.00	0.00						0.00
Total	**1.29**	**8.06**	**5.35**	**0.01**		**0.70**	**0.70**		**0.70**	**0.70**						**776.00**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.03	0.03	0.41	0.00	0.08	0.00	0.08	0.00	0.00	0.00						64.43
Total	**0.03**	**0.03**	**0.41**	**0.00**	**0.08**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**						**64.43**

Sunset Debris Basin

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	1	Acre
Other Non-Asphalt Surfaces	1	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Los Angeles Department of Water & Power
Climate Zone	12	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use - Assumes a maximum impacted area of 0.25 acres. Assumed 0.2 for the non-paved areas and 0.05 for the paved access road (2,400 sqft)

Construction Phase - Demo 4/16-5/11; Grad 5/12-6/29; Dam const 7/2-9/18;
Geobrugg 8/20-24; Pave 9/19-28; 20-35-57-5-8

Off-road Equipment - Substituted the default forklift for the cement and mortar mixers

Off-road Equipment - Pave-Loader, Roller

On-road Fugitive Dust - 25 mph for local roads

Demolition - 50 cubic yards at 145#/cubic ft=98 tons

Grading - maximum impacted area = 0.25 acres

Construction Off-road Equipment Mitigation - water 2x per day

Waste Mitigation -

Off-road Equipment - Demo-Saw, dozer, 1 loader

Off-road Equipment - Grading-dozer, 2 loader/backhoe, 1 grader

Off-road Equipment - Dam site-2 mixer, 2 forklift, 2 loader, 1 welder, 1 other

Off-road Equipment - Geobrugg - loader, generator (4 drill)

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	0.20	1.47	0.88	0.00	0.10	0.09	0.19	0.05	0.09	0.14						152.33
Total	**0.20**	**1.47**	**0.88**	**0.00**	**0.10**	**0.09**	**0.19**	**0.05**	**0.09**	**0.14**						**152.33**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	0.20	1.47	0.88	0.00	0.05	0.09	0.13	0.02	0.09	0.11						152.33
Total	**0.20**	**1.47**	**0.88**	**0.00**	**0.05**	**0.09**	**0.13**	**0.02**	**0.09**	**0.11**						**152.33**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.02	0.12	0.08	0.00		0.01	0.01		0.01	0.01						10.61
Total	**0.02**	**0.12**	**0.08**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**						**10.61**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.38
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.88
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**1.26**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.02	0.12	0.08	0.00		0.01	0.01		0.01	0.01						10.61
Total	**0.02**	**0.12**	**0.08**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**						**10.61**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.38
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.88
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**1.26**

3.3 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.09	0.00	0.09	0.05	0.00	0.05						0.00
Off-Road	0.08	0.60	0.35	0.00		0.03	0.03		0.03	0.03						53.08
Total	**0.08**	**0.60**	**0.35**	**0.00**	**0.09**	**0.03**	**0.12**	**0.05**	**0.03**	**0.08**						**53.08**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00						1.92
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**1.92**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.04	0.00	0.04	0.02	0.00	0.02						0.00
Off-Road	0.08	0.60	0.35	0.00		0.03	0.03		0.03	0.03						53.08
Total	**0.08**	**0.60**	**0.35**	**0.00**	**0.04**	**0.03**	**0.07**	**0.02**	**0.03**	**0.05**						**53.08**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00						1.92
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**1.92**

3.4 Upper Dam Site Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.09	0.69	0.40	0.00		0.04	0.04		0.04	0.04						80.90
Total	**0.09**	**0.69**	**0.40**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**						**80.90**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**0.00**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.09	0.69	0.40	0.00		0.04	0.04		0.04	0.04						80.90
Total	**0.09**	**0.69**	**0.40**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**						**80.90**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**0.00**

3.5 Geobrugg installation - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00						1.53
Total	**0.00**	**0.02**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**						**1.53**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**0.00**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00						1.53
Total	**0.00**	**0.02**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**						**1.53**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**0.00**

3.6 Paving - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.03	0.02	0.00		0.00	0.00		0.00	0.00						2.82
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.01**	**0.03**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**						**2.82**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.22
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**0.22**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.03	0.02	0.00		0.00	0.00		0.00	0.00						2.82
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**0.01**	**0.03**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**						**2.82**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						0.22
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**						**0.22**

APPENDIX B

BIOLOGICAL RESOURCES REPORT

BonTerra CONSULTING
225 South Lake Avenue, Suite 1000 Pasadena, CA 91101
T: (626) 351-2000 F: (626) 351-2030 | www.BonTerraConsulting.com

January 24, 2013

Ms. Grace Yu
Department of Public Works
County of Los Angeles
900 South Fremont, 2nd Floor Annex
Alhambra, California 91803-1331

VIA EMAIL
gyu@dpw.lacounty.gov

Subject: Biological Resources Report for the Sunset Upper Debris Basin Dam Modification Project, City of Burbank, Los Angeles County, California

Dear Ms. Yu:

BonTerra Consulting conducted biological studies at the Sunset Upper Debris Basin for the Sunset Canyon Debris Control Study project in 2007–2008. These studies included a biological reconnaissance survey, focused surveys for special status plant species and coastal California gnatcatcher (*Polioptila californica californica*), and a Jurisdictional Delineation (BonTerra Consulting 2008a–2008d). The impact area for the current Sunset Upper Debris Basin Dam Modification project site is located entirely within the study area for the previous project; therefore, the purpose of the 2011 survey was to conduct an updated reconnaissance survey to confirm that existing conditions at the Sunset Upper Debris Basin were similar to conditions previously observed during the 2008 surveys.

Project Site

The Sunset Upper Debris Basin Dam Modification project (hereafter referred to as the "project") is located in the City of Burbank in Los Angeles County, California (Exhibit 1). The project site is located in the Verdugo Mountains and is largely surrounded by open space (including Wildwood Canyon Park and Brand Park) and lesser amounts of residential development. The project site is located north of Sunset Canyon Drive at the terminus of Country Club Drive. It is located on the Burbank U.S. Geological Survey (USGS) 7.5-minute quadrangle map, with an elevation range of about 1,550 to 1,620 feet above mean sea level (Exhibit 2). The proposed project would raise the height of the existing dam to increase the capacity of the basin..

METHODS

BonTerra Consulting Senior Biologist Amber Oneal conducted the updated reconnaissance survey on June 21, 2011, to evaluate current site conditions. This was a follow-up survey to a general plant and wildlife survey (including vegetation mapping) that was conducted on November 6, 2007, by BonTerra Consulting Senior Biologist Marc Blain and Botanist Andrea Edwards. The California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2007, 2011) and the California Department of Fish and Wildlife's (CDFW; formerly California Department of Fish and Game) California Natural Diversity Database (CDFW 2007, 2011) were reviewed prior to the surveys to identify special status plants, wildlife, and habitats known to occur in the vicinity.

All species observed were recorded in field notes. Plant species were identified in the field or collected for subsequent identification using keys in Hickman (1993) and Munz (1974). Taxonomy follows Hickman (1993) and current scientific data (e.g., scientific journals) for scientific and common names.

Vegetation was mapped on an aerial photograph at a scale of 1 inch = 200 feet; nomenclature generally follows that of *The Vegetation Classification and Mapping Program: List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (CDFW 2003).

Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic sign including scat, footprints, scratch-outs, dust bowls, burrows, and trails. Taxonomy and nomenclature for wildlife generally follows Stebbins (2003) for amphibians and reptiles, American Ornithologists Union (2006) for birds, and Baker et al. (2003) for mammals.

RESULTS

Soils

Soil types in and around the survey areas generally consist of the Vista-Amargosa association (30 to 50 percent slopes, eroded), which occurs in steep mountainous areas; is well to excessively drained; and contains a coarse sandy loam surface layer and gravelly to coarse sandy loam subsoil above granitic rock (USDA 1969).

Vegetation Types

Vegetation types within the study area include California sagebrush scrub, mixed chaparral, and coast live oak woodland (Exhibit 3A); disturbed and developed areas were also present.

California sagebrush scrub is on the steep slopes adjacent to the debris basin. It also intergrades in a patchy distribution with chaparral throughout the rest of the survey area. This vegetation type is dominated by California sagebrush (*Artemisia californica*); other common species present include California buckwheat (*Eriogonum fasciculatum*), deerweed (*Lotus scoparius*), white sage (*Salvia apiana*), our Lord's candle (*Yucca whipplei*), and laurel sumac (*Malosma laurina*). Coastal sage scrub would not be impacted in the dam modification area.

Mixed chaparral covers the majority of the survey areas, varying in density based on aspect and topography. This vegetation type is dominated by chamise (*Adenostoma fasciculatum)*, toyon (*Heteromeles arbutifolia*), California coffeeberry (*Rhamnus californica*), and laurel sumac. Other common species present include elderberry (*Sambucus mexicana*), holly-leaf cherry (*Prunus ilicifolia*), lemonadeberry (*Rhus integrifolia*), hoaryleaf ceanothus (*Ceanothus crassifolius*), mountain mahogany (*Cercocarpus betuloides*), and black sage (*Salvia mellifera*). Mixed chaparral would not be impacted in the dam modification area.

Coast live oak woodland occurs above the basin and along the drainage below the project site; it is dominated by coast live oak (*Quercus agrifolia*). Other common species present include red willow (*Salix laevigata*), mule fat (*Baccharis salicifolia*), western poison oak (*Toxicodendron diversilobum*), mugwort (*Artemisia douglasiana*), and California blackberry (*Rubus ursinus*). Additional occasional species include western sycamore (*Platanus racemosa*), bush monkeyflower (*Mimulus aurantiacus*), Southern California black walnut (*Juglans californica*),

California brickellbush (*Brickellia californica*), and the scrub and chaparral species listed above. Coast live oak woodland will not be impacted in the dam modification area.

Developed areas include all paved surfaces, concrete-lined channels, and other structures. Disturbed areas include dirt roads, fire breaks, and other mechanically disturbed areas that are generally devoid of vegetation.

Construction of the proposed dam modifications will occur on existing disturbed and developed areas (i.e., dam, access road, and gunite slopes) and within the 16,168-square foot (sf) area (approximately 0.37 acre) below the 25% capacity contact line, which is permitted for disturbance via an existing long term maintenance agreement. Specifically, construction of the proposed dam modifications would involve a total impact footprint of 29,115 sf (approximately 0.7 acre). The construction footprint includes 24,579 sf of temporary impact areas (e.g., construction staging, equipment operations) and 4,536 sf of permanent impact areas (e.g., footprint of additional dam and access road features). Disturbed and developed areas are considered to have no to low biological value to wildlife, and as such, impacts on these areas would be considered less than significant per California Environmental Quality Act (CEQA) guidelines. Vegetation types mapped below the 25% contact line are considered impacted via ongoing annual debris basin maintenance activities, and have been mitigated under the Section 1605 Agreement with CDFW. There would be no vegetation removal outside of the 25% contact line, as part of project construction. Therefore, there will be no additional impacts to vegetation resulting from construction of the proposed dam modifications.

Long-term operation of the modified Sunset Upper Debris Basin Dam would lead to potential inundation and/or debris deposition within the expanded 25% and 100% contact lines. It should be noted that while heightening the dam will increase the debris basin capacity by 8,000 cubic yards allowing for the detainment of flows of larger storm events without overtopping, the change in dam height would not be expected to change the inundation frequency, inundation duration, or the flow regime upstream or downstream of the dam. The debris basin typically fills to an average of approximately 18% capacity (i.e., 18% of the existing 100% capacity contact line) each season; during larger storm events, the post-project basin may fill to a greater capacity than currently. However, this occurrence is expected to be extremely infrequent.

Table 1 summarizes the vegetation types within the expanded 25% and 100% contact lines. As shown, California sagebrush scrub, coast live oak woodland, mixed chaparral, developed, and disturbed areas occur within the post-project contact lines. Among these, California sagebrush scrub and coast live oak woodland are considered sensitive natural vegetation communities.

TABLE 1
VEGETATION TYPES WITHIN POST-PROJECT 25% AND 100% CONTACT LINES

Vegetation Type	Post-Project 25% Contact Line [sf (acre)]	Post-Project 100% Contour Line [sf (acre)]
California sagebrush scrub	611.4 (0.01)	1,696.6 (0.04)
Coast live oak woodland	1,483.6 (0.03)	5,174.8 (0.12)
Mixed chaparral	298.9 (0.007)	1,041.8 (0.02)
Developed	26.7 (0.0006)	230.0 (0.005)
Disturbed	858.5 (0.02)	858.5 (0.02)
Totals	**3,279.1 sf (0.08)**	**9001.7 sf (0.21)**

sf–square feet
Note: Totals may not add due to rounding.

As shown in Table 1, the change in elevation of the 100% contact line will result in an inundation area increase of approximately 9,002 sf (0.21 acre) between the existing and post-project contact lines. The additional area includes California sagebrush scrub, coast live oak woodland, and mixed chaparral, as well as developed and disturbed areas. During a storm event that produces storm water and/or debris flows that are greater than the existing debris basin capacity of 20,000 cy, some or all of the additional area of 9,002 sf would be subject to potential inundation. However, as noted above, rain intensity and frequency, which define the flow regime upstream and downstream of the dam, would not change with the project. Regardless, the Section 1605 Long-Term Streambed Alteration Agreement for the Debris Basin Maintenance Program (No. 1600-2008-0290-R5)(Section 1605 Agreement) with the CDFW that was signed on August 15, 2011, and other permits related to long-term maintenance activities, would require amendments subsequent to proposed project implementation to reflect the expanded 25% and 100% contour lines. This requirement has been included as a recommended mitigation measure. Impacts to vegetation within the post-project 100% contour line, including the minimal amount of 0.16 acres of sensitive vegetation types (i.e., 0.04 acre California sagebrush scrub and 0.12 acre of coast live oak woodland), are considered less than significant under the CEQA with appropriate permit amendments.

As shown in Table 1, the inundation area of the 25% contact line would be increased by approximately 3,279 sf (0.08 acre) between the existing and post-project contact lines. The expanded 25% contact line would encompass areas of California sagebrush scrub, coast live oak woodland, and mixed chaparral, as well as developed and disturbed areas. The change in the debris basin's post-project 25% contact line has an associated capacity increase of 2,000 cy (for a proposed total capacity of 7,000 cy), and the additional 3,279 sf of area would be subject to potential inundation. The post-project 25% contact line inundation area would contain 0.04 acre of sensitive vegetation types (i.e., 0.01 acre of California sagebrush scrub and 0.03 acre of coast live oak woodland). Because of the minimal amount of sensitive vegetation within the post-project inundation area of the 25% contact line (0.04 acre), the potential inundation of this vegetation would be considered a less than significant impact under CEQA. Regardless, as discussed above, the Section 1605 Agreement, and other permits related to long-term maintenance activities, would require amendments subsequent to proposed project implementation to reflect the expansion of the inundation area of the 25% contact line.

Wildlife

Amphibians require moisture for at least a portion of their life cycle and many require standing or flowing water for reproduction. Although no amphibians were observed during the survey, amphibian species such as the western toad (*Bufo boreas*) and Pacific treefrog (*Hyla regilla*) are expected to occur. Other native amphibian species that may occur include the black-bellied slender salamander (*Batrachoseps nigriventris*) and California treefrog (*Hyla cadaverina*).

Diversity and abundance of reptiles typically varies with vegetation type and substrate characteristics. The western fence lizard (*Sceloporus occidentalis*) and side-blotched lizard (*Uta stansburiana*) were observed during the survey. Other native reptile species that are expected to occur include western skink (*Eumeces skiltonianus*), southern alligator lizard (*Elgaria multicarinata*), gopher snake (*Pituophis catenifer*), coachwhip (*Masticophis flagellum*), common kingsnake (*Lampropeltis getula*), and western rattlesnake (*Crotalus viridis*).

Birds utilize nearly all vegetation types with greater variety and higher densities occurring in particularly valuable vegetation types. Riparian habitats are extremely important to birds, providing food, water, and cover throughout the year. These habitats also provide important breeding habitat for a wide variety of species.

Bird species observed during the survey include red-tailed hawk (*Buteo jamaicensis*), Anna's hummingbird (*Calypte anna*), western scrub-jay (*Aphelocoma californica*), wrentit (*Chamaea fasciata*), northern rough-winged swallow (*Stelgidopteryx serripennis*), spotted towhee (*Pipilo maculatus*), California towhee (*Melozone* [*Pipilo*] *crissalis*), house finch (*Carpodacus mexicanus*), and American goldfinch (*Spinus* [*Carduelis*] *tristis*). Bird species observed during previous surveys that would be expected to occur include mourning dove (*Zenaida macroura*), northern flicker (*Colaptes auratus*), black phoebe (*Sayornis nigricans*), common raven (*Corvus corax*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), common yellowthroat (*Geothlypis trichas*), song sparrow (*Melospiza melodia*), and lesser goldfinch (*Spinus* [*Carduelis*] *psaltria*).

Mammal species expected to occur include the following small mammal species: desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), and Botta's pocket gopher (*Thomomys bottae*). A variety of bat species are expected to occur as well, including long-legged myotis (*Myotis volans*), California myotis (*Myotis californicus*), western pipistrelle (*Pipistrellus hesperus*), big brown bat (*Eptesicus fuscus*), hoary bat (*Lasiurus cinereus*), and Brazilian free-tailed bat (*Tadarida brasiliensis*). Medium and large-sized mammals expected to occur include the raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), coyote (*Canis latrans*), bobcat (*Lynx rufous*), and mountain lion (*Puma* [*Felis*] *concolor*).

Special Status Species and Habitats

Special status species and habitats have been given recognition by federal and/or State agencies, as well as private conservation organizations, because of a perceived or documented decline in the population size or geographic range of the species or habitat.

Plant Species

Focused surveys for special status plant species were conducted throughout the previous larger study area in Spring/Summer 2008. Three special status plant species were observed during the surveys: Plummer's mariposa lily (*Calochortus plummerae*), Southern California black walnut (*Juglans californica*), and ocellated lily (*Lilium humboldtii* ssp. *ocellatum*).

Plummer's mariposa lily is a CNPS List 1B.2 species, which is considered rare, threatened, and endangered in California. This perennial bulbiferous herb typically blooms between May and July (Munz 1974). It occurs in dry rocky places and brush between sea level and about 5,000 feet above msl in elevation, in chaparral, coastal sage scrub, and yellow pine forest habitats (Munz 1974; Hickman 1993). This species is known from Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties (CNPS 2011). A total of 36 individuals were observed along a former fire break on the ridge to the north of the dam (Exhibit 3A). This area would not be impacted by the proposed project during project construction.

Southern California black walnut is a CNPS List 4.2 species. It is a perennial deciduous tree endemic to southwestern California that is observable year-round (CNPS 2011). It is locally common between sea level and about 4,500 feet above msl and is often found in oak woodland habitats (Munz 1974). It occurs on slopes and in canyons (Hickman 1993). This species is known from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura counties (CNPS 2011). Many Southern California black walnuts were observed within the previous larger survey area, scattered along drainages occurring in coast live oak woodland vegetation. None of the walnut trees would be impacted by the proposed project because no vegetation would be removed during project construction.

Ocellated lily is a CNPS List 4.2 species. It is a bulbiferous herb endemic to California that typically blooms between March and July (CNPS 2011). It occurs between sea level and about 3,000 feet above msl, in gravelly soil in gulleys and canyons, usually in chaparral and oak woodland habitats (Munz 1974). This species is known from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura Counties, and on Anacapa Island, Santa Cruz Island, and Santa Rosa Island (CNPS 2011). Many ocellated lilies were observed within the previous larger survey area, scattered along drainages in coast live oak woodland vegetation. As discussed above, approximately 0.12 acre of coast live oak woodland within the 100% contact line inundation area and approximately 0.03 acre of oak woodland would be potentially impacted by inundation subsequent to construction of the dam modifications. The total of 0.15 acre of oak woodland is a minimal amount of this vegetation type within which scattered oscellated lilies were observed in the larger study area. Therefore, while some oscellated lilies may be impacted by inundation where present within the small area of oak woodland within the expanded contact lines, the majority of lilies would be avoided as only a minimal portion of the oak woodland in the survey area is within the expanded contact lines. Seeds of the lily species may wash down into the debris basin or channel from upstream locations and a few individuals may occur within the impact area during construction. Impacts on CNPS List 4.2 species are typically considered less than significant under CEQA since this species is not considered to meet the criteria of Section 15380.[1]

Wildlife Species

Focused surveys for the federally Threatened coastal California gnatcatcher were conducted throughout the previous larger study area in Spring/Summer 2008, and no coastal California gnatcatchers were observed. Although this species has not been documented as a breeder in the immediate vicinity, the site is located within this species' range, and there have been observation of individuals within the region. Although coastal sage scrub habitat is located adjacent to project site, raising the dam would not impact coastal sage scrub habitat. If the coastal California gnatcatcher were to occur at the project site in the future, construction noise and human activity could indirectly impact coastal California gnatcatchers (if present). Therefore, it is recommended that a pre-construction gnatcatcher survey be conducted prior to construction to confirm the absence of this species. If the coastal California gnatcatcher is present during the pre-construction surveys, the U.S. Fish and Wildlife Service (USFWS) should be notified to determine the appropriate avoidance and minimization measures (e.g., construction timing, noise abatement measures) that would be necessary.

Other Species of Special Concern that have potential to occur on the site include the western spadefoot (*Spea hammondii*), coast (San Diego) horned lizard (*Phrynosoma coronatum* [*blainvillii* population]), silvery legless lizard (*Anniella pulchra pulchra*), loggerhead shrike (*Lanuius ludovicianus*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), and the yellow warber (*Dedroica petechia*). Project impacts are limited to developed and disturbed areas, and are therefore expected to have a limited impact on these species. Therefore, impacts would be considered less than significant.

Habitats

Coastal sage scrub occurs throughout the undeveloped foothills of Southern California; it has high potential to support special status wildlife species, and impacts to it typically require mitigation in Los Angeles County. California sagebrush scrub, a type of coastal sage scrub,

[1] Section 15380 of CEQA states that if a species can be shown to meet the definition of Rare, Threatened, or Endangered, it can be treated as such even if it is not formally listed by the resource agencies.

occurs within the survey areas. Coast live oak woodland is a special status vegetation type that occurs above the basin and along the drainage below the project site. Oak forests and woodlands provide food, cover, and nesting or denning habitat for many wildlife species. Impacts to oak woodlands, or individual oak trees would require mitigation in accordance with the County of Los Angeles Oak Tree Ordinance. The proposed project would not remove any coastal sage scrub or coast live oak trees during project construction; therefore, there would be no direct impact to these habitats. As discussed above under "Vegetation Types", minimal areas of these habitats have the potential to be indirectly impacted through inundation of the expanded 100% and 25% contact lines. Impacts to vegetation within the expanded 100% contact line, including the minimal amount of 0.16 acres of sensitive vegetation types (i.e., 0.04 acre California sagebrush scrub and 0.12 coast live oak woodland), are considered less than significant under the CEQA with appropriate permit amendments. Because of the minimal amount of sensitive vegetation within the expanded 25% contact line (0.04 acre), the potential inundation of this vegetation would be considered a less than significant impact under CEQA. Regardless, the Section 1605 Agreement, and other permits related to long-term maintenance activities, would require amendments subsequent to proposed project implementation to reflect the expansion of the 25% contact line.

Jurisdictional Areas

Drainages within the current survey area are considered jurisdictional by the U.S. Army Corps of Engineers (USACE) (Exhibit 4) and the CDFW (Exhibit 5). A jurisdictional delineation of the previous larger study area was conducted in 2008. Construction of the proposed project would impact a total of 0.233 acre of "Waters of the U.S.", including 0.009 acre of wetlands under the jurisdiction of the USACE, and 0.258 acre of resources under the jurisdiction of CDFW, including both permanent and temporary construction impact areas (Table 1; Exhibits 4 and 5).

The Los Angeles County Department of Public Works currently holds USACE, CDFW, and Regional Water Quality Control Board (RWQCB) permits/agreements authorizing maintenance on the dam structure and associated debris basin for impacts on areas within the 25% contact line; under these permits/agreements, areas within the 25% contact line can be repeatedly impacted by maintenance activities (USACE Regional General Permit File No. SPL-2003-00411-KW; CDFW Streambed Alteration Agreement No. 1600-2008-0290-R5; and RWQCB File No. *02-144-2008 Renewal*). Of the area that would be impacted by the proposed project, a total of 0.205 acre of "Waters of the U.S." and 0.201 acre of resources under the jurisdiction of CDFW are within the 25% contact line authorized for routine maintenance. A total of 0.028 acre of "Waters of the U.S.", including 0.009 acre of wetlands, under the jurisdiction of the USACE and 0.055 acre of resources under the jurisdiction of CDFW that would be impacted by the project fall outside of the 25% contact line and therefore would require amendments to existing permits/agreements or new permits/agreements authorized by the USACE, RWQCB, and CDFW. This requirement is a recommended mitigation measure.

TABLE 2
JURISDICTIONAL RESOURCE IMPACTS FROM PROJECT CONSTRUCTION (ACRES)

	Permanent Impacts			Temporary Impacts			
	Within 25% Contact Line	Outside 25% Contact Line	Total	Within 25% Contact Line	Outside 25% Contact Line	Total	TOTAL IMPACTS
USACE (Total)	*0.000*	*0.001*	*0.001*	*0.205*	*0.027*	*0.232*	*0.233*
Non-wetland "Waters of the U.S."	0.000	0.000	0.000	0.205	0.019	0.224	0.224
Wetlands	0.000	0.001	0.001	0.000	0.008	0.008	0.009
CDFW (Total)	*0.000*	*0.002*	*0.002*	*0.201*	*0.055*	*0.256*	*0.258*

Significant Ecological Areas

The Project is located within an area designated by the County of Los Angeles as the Verdugo Hills Significant Ecological Area (SEA), established in 1976. However, the SEA is entirely within the cities of Glendale, Burbank, and Los Angeles. Therefore, the County's SEA program, and associated SEATAC review process, is not applicable to the Verdugo Hills SEA.

Other Considerations

Wildlife Movement

Wildlife are expected to move along both the ridgelines and drainages in and around the survey area. The proposed project would modify an existing dam structure, but would not create a new structure or modify the contacts of the basin in a way that would constitute a barrier to wildlife movement. Therefore, the proposed project would not be expected to disrupt or discourage long-term movement and use within the study area. Wildlife in the survey area may avoid the immediate area during the day when construction is occurring, but would still be expected to use the survey area at night. The temporary impact on wildlife movement and use would be considered short-term in nature, and would therefore be considered less than significant.

Trees

No trees would be removed or require trimming during project construction; therefore, there would be no impact on coast live oak or Southern California black walnut trees and no permits would be needed.

Nesting Raptors

The red-tailed hawk is suspected to be breeding in the oak trees adjacent to the basin based on behavior observed during the June 2011 survey. Additionally, several other hawk and owl species have potential to nest in the woodlands adjacent to the project site. The *California Fish and Game Code* prohibits activities that have the potential to disturb active raptor nests; this protection generally ceases once nesting activity is complete. If possible, it is recommended that the proposed project (and any periodic maintenance) be constructed outside of the raptor nesting season (February 1 to July 30). If construction must occur within this timeframe, a survey for active raptor nests would be required immediately prior to any construction activities, including geotechnical testing. If a raptor nest is observed during the survey, it would be

protected by an appropriate buffer zone designated by CDFW, where no construction activity would be allowed until the nest had failed or the nestlings had fledged. This could be a constraint on proposed construction or periodic maintenance activities.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) protects the nests of all native bird species, including common species such as mourning dove, Anna's hummingbird, and house finch. In addition to protecting nests located in native trees and shrubs, it also protects nests located on bare ground and on structures. If possible, construction should be initiated outside the peak bird nesting season (March 1 to August 30) to avoid impacts on nesting birds. If construction (or period maintenance) must be initiated during this time period, the CDFW often requires nesting bird surveys prior to vegetation clearing to find all bird nests. Each nest observed during the survey would be protected by an appropriate buffer zone designated by CDFW, where no construction activity would be allowed until the nest had failed or the nestlings had fledged where no construction activity is allowed until the nest has failed or until the nestlings have fledged. This can be a constraint on proposed construction or periodic maintenance activities.

RECOMMENDED MEASURES

The following measures are recommended to avoid or minimize impacts on biological resources:

- A pre-construction survey for coastal California gnatcatcher should be conducted prior to construction to confirm the absence of this species from the coastal sage scrub adjacent to the project site. The USFWS should be contacted to determine the appropriate pre-construction survey methodology (e.g., full protocol survey or a reduced-visit modified survey protocol). If coastal California gnatcatcher is observed during the pre-construction survey, the USFWS will be contacted to discuss and approve avoidance and minimization measures recommended by a qualified gnatcatcher Biologist. These may include, but would not be limited to, biological monitoring by a Biologist permitted for this species, construction/maintenance outside the breeding season (February 14 to August 15), or noise restrictions near the occupied area.
- The Los Angeles County Department of Public Works should verify that any jurisdictional areas temporarily impacted by the proposed project that are within the approved maintenance area (i.e., 25% contact line) would be in compliance with the existing permits/agreements for debris basin maintenance (USACE Regional General Permit File No. SPL-2003-00411-KW; CDFW Streambed Alteration Agreement No. 1600-2008-0290-R5; and RWQCB File No. *02-144-2008 Renewal*); the permits may need to be amended to authorize improvements to the dam. All conditions of these permits must be followed during construction of the proposed project. These conditions include, but are not limited to, biological monitoring during the initiation of construction, use of Best Management Practices (BMPs) to protect water quality, flagging of the construction site, and flagging an exclusion area to prevent work within the dripline of oaks.
- An amendment to the existing permits/agreements or a new permit/agreement would be required from the USACE, the RWQCB, and the CDFW for impacts on jurisdictional areas outside the 25% contact line. This includes confirmation that there would be no additional flooding or inundation (as compared to existing conditions) expected outside of the 25% capacity contact as a result of the proposed project. Mitigation for impacts on jurisdictional areas may include preservation or restoration of riparian habitat at a ratio identified in the USACE/CDFW permits/agreements, typically ranging from 1:1 to 5:1

(depending on the quality of the habitat impacted). No discharge or fill material would be allowed to impact the creeks in the survey area. This would include runoff carrying sediment from construction activities. BMPs would be required to avoid indirect impacts on these streams.

- If construction would be initiated between February 1 and July 30, a survey for active raptor nests is recommended seven days prior to commencement of any construction activities (or as otherwise directed in the CDFW Streambed Alteration Agreement). Restrictions may be placed on construction/maintenance activities in the vicinity of any active nest until the nest is no longer active. If a raptor nest is observed during the survey, it would be protected by an appropriate buffer zone designated by CDFW, where no construction activity would be allowed until the nest had failed or the nestlings had fledged. Once the nest is no longer active, construction can proceed within the buffer zone.
- If construction would be initiated between March 1 and August 31, a survey for active bird nests is recommended three days prior to commencement of any construction activities (or as otherwise directed in the CDFW Streambed Alteration Agreement). The survey will include all potential nesting areas, including dam structures. Restrictions may be placed on construction/maintenance activities in the vicinity of any active nest observed until the nest is no longer active. If an active nest is observed during the survey, it would be protected by an appropriate buffer zone designated by CDFW, where no construction activity would be allowed until the nest had failed or the nestlings had fledged. Once the nest is no longer active, construction can proceed within the buffer zone.

Please contact Marc Blain at (626) 351-2000 if you have questions or comments.

Sincerely,

BONTERRA CONSULTING

Thomas E. Smith, Jr., AICP
Principal

Marc T. Blain
Associate, Biological Resources Manager

Enclosures: Exhibit 1 – Regional Location
Exhibit 2 – Local Vicinity
Exhibit 3 – Existing Vegetation
Exhibit 4 – Jurisdictional Resources: USACE
Exhibit 5 – Jurisdictional Resources: CDFW

REFERENCES

American Ornithologists' Union (AOU). 2006. *Check-list of North American Birds* (7th ed., as revised through 47th Supplement). Washington, D.C.: AOU. http://www.aou.org/checklist/index.php3.

Baker, R.J., L.C. Bradley, R.D. Bradley, J.W. Dragoo, M.D. Engstrom, R.S. Hoffmann, C.A. Jones, F. Reid, D.W. Rice, and C. Jones. 2003 (December). Revised Checklist of North American Mammals North of Mexico, 2003. *Occasional Papers (No. 229).* Waco, TX: Museum of Texas Tech University.

BonTerra Consulting. 2008a (January). *Results of Biological Reconnaissance Survey for Sunset Canyon Debris Control Study* (a Letter Report to C. Franco, County of Los Angeles Department of Public Works). Pasadena, CA: BonTerra Consulting.

———. 2008b (September). *Results of Special Status Plant Surveys for the Sunset Canyon Debris Control Study, Los Angeles County, California* (a Letter Report to V. De La Cruz, County of Los Angeles Department of Public Works). Pasadena, CA: BonTerra Consulting.

———. 2008c (June). *Results of Coastal California Gnatcatcher Survey for the Upper Sunset Canyon Debris Control Study Project Site, City of Burbank, Los Angeles County, California* (a Letter Report to S. Marquez, U.S. Fish and Wildlife Service). Pasadena, CA: BonTerra Consulting.

———. 2008d (February). *Sunset Canyon Debris Basin Control Study, Los Angeles County, California, Jurisdictional Delineation* (prepared for the County of Los Angeles Department of Public Works). Pasadena, CA: BonTerra Consulting.

California Department of Fish and Wildlife (CDFW). 2011. California Natural Diversity Database. Records of Occurrence for San Fernando, Sunland, Condor Peak, Van Nuys, Burbank, and Pasadena quadrangle maps. Sacramento, CA: CDFW, Natural Heritage Division.

———. 2007. California Natural Diversity Database. Records of Occurrence for San Fernando, Sunland, Condor Peak, Van Nuys, Burbank, and Pasadena quadrangle maps. Sacramento, CA: CDFW, Natural Heritage Division.

———. 2003 (September). *List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base.* Sacramento, CA: CDFW, Natural Heritage Division.

California Native Plant Society (CNPS). 2011. Electronic Inventory of Rare and Endangered Vascular Plants of California. Records of Occurrence for San Fernando, Sunland, Condor Peak, Van Nuys, Burbank, and Pasadena quadrangle maps. Sacramento, CA: CNPS. http://www.cnps.org/inventory.

———. 2007. Electronic Inventory of Rare and Endangered Vascular Plants of California. Records of Occurrence for San Fernando, Sunland, Condor Peak, Van Nuys, Burbank, and Pasadena quadrangle maps. Sacramento, CA: CNPS. http://www.cnps.org/inventory.

England and Nelson. 1976. *Los Angeles County Significant Ecological Area Study*. (Prepared for the Los Angeles County Department of Regional Planning and Environmental Systems Research Institute). Riverside, CA: England and Nelson Environmental Consultants.

Hickman, J.C., Ed. 1993. *The Jepson Manual of Higher Plants of California*. Berkeley, CA: University of California Press.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Sacramento, CA: CDFW, Non-game Heritage Program.

Los Angeles, County of. 1988. *County of Los Angeles Oak Tree Ordinance (#88-0157).* Los Angeles, CA: the County.

Munz, P.A. 1974. *A Flora of Southern California*. Berkeley, CA: University of California Press.

Sawyer, J.O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. Sacramento, CA: CNPS.

Stebbins, R.C. 2003. *A Field Guide to Western Reptiles and Amphibians* (3rd ed.). Boston, MA: Houghton-Mifflin Company.

United States Department of Agriculture (USDA). 1969 (revised). *Report and General Soil Map, Los Angeles County, California*. Lancaster, CA: USDA, Natural Resources Conservation Service.

D:\Projects\CoLADPW\J144\mxd\Ex_RL.mxd

Regional Location

Exhibit 1

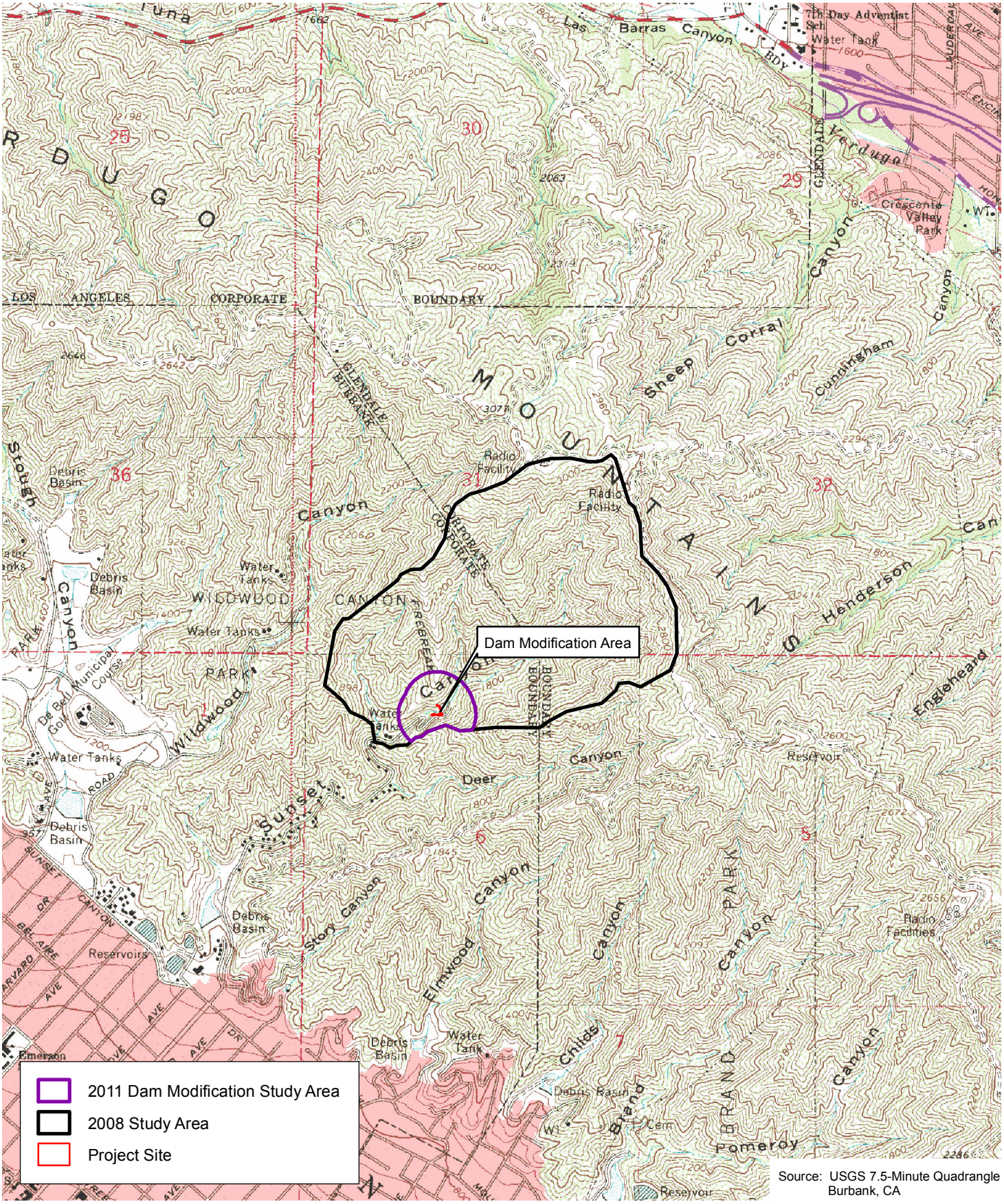
Sunset Upper Debris Basin Dam Modification Project

N W E S

10 5 0 10 Miles

BonTerra CONSULTING

(Rev: 6-30-2011 WAD) R:\PAS\Projects\CoLADPW\J144\Graphics\Bio\Ex1_RL.pdf



Local Vicinity

Exhibit 2

Sunset Upper Debris Basin Dam Modification Project

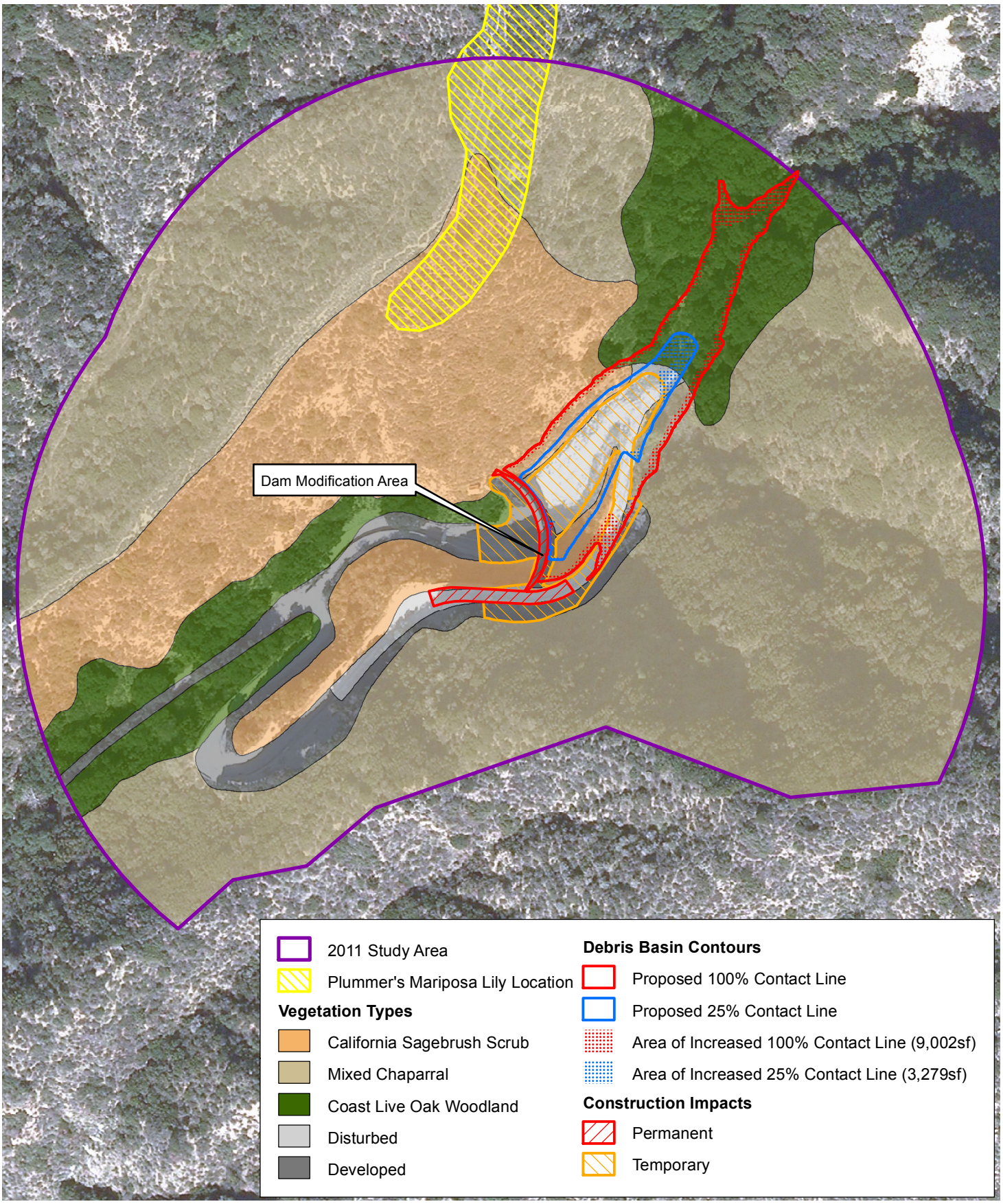
N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

(Rev: 1-17-2013 CJS) R:\PAS\Projects\CoLADPW\J144\Graphics\Bio\Ex2_LV.pdf

D:\Projects\CoLADPW\J144\mxd\Ex_LV_quad_20111219.mxd



D:\Projects\CoLADPW\J144\mxd\Ex_veg_20121116.mxd

Existing Vegetation at Sunset Upper Debris Basin Dam

Exhibit 3

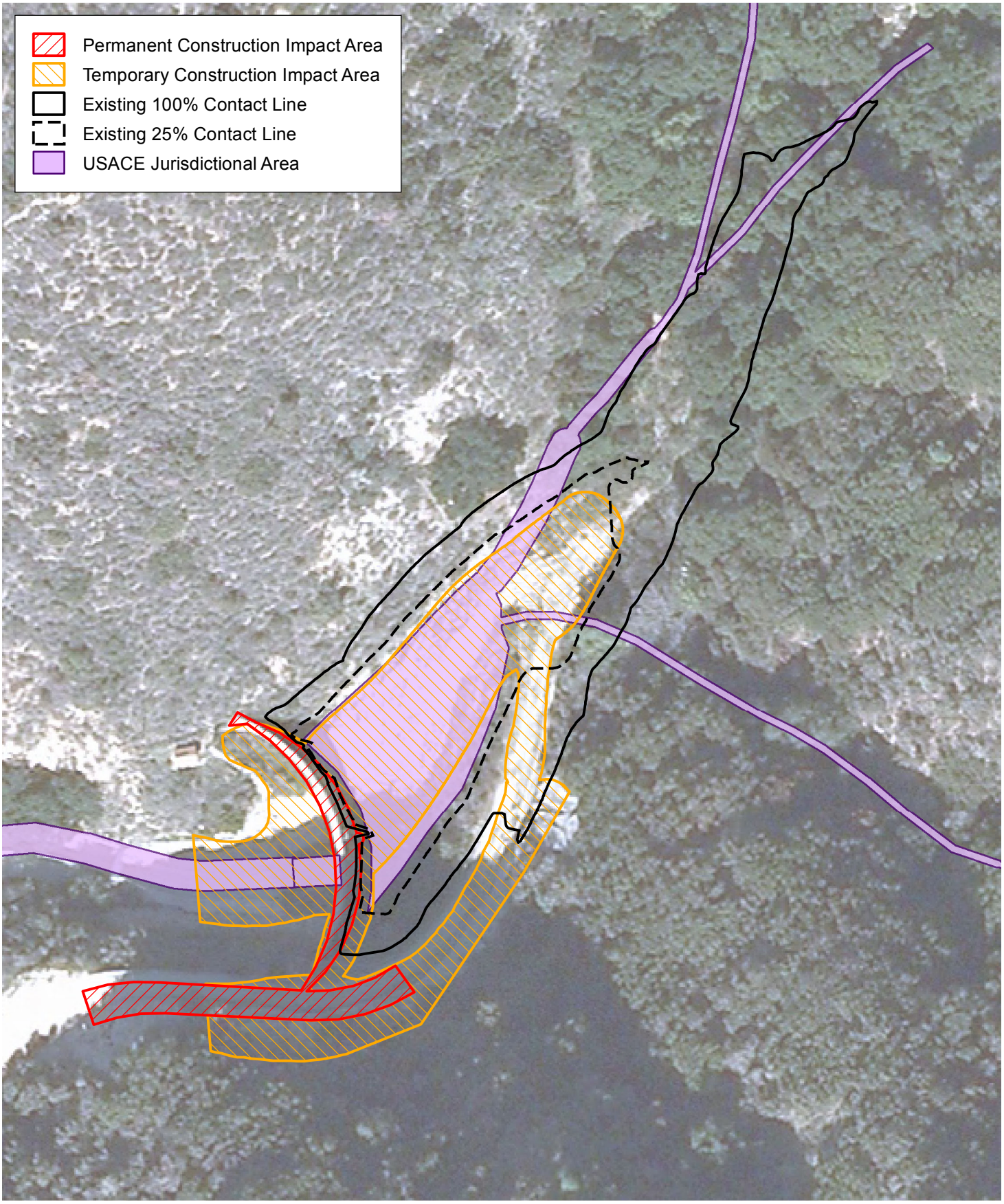
Sunset Upper Debris Basin Dam Modification Project

N W E S

160 80 0 160 Feet

BonTerra CONSULTING

(Rev: 1-18-2013 CJS) PAS\Projects\CoLADPW\J144\Graphics\Bio\Ex_Veg.pdf



D:\Projects\CoLADPW\J144\mxd\Ex_JD_USACE.mxd

Jurisdictional Resources: U.S. Army Corps of Engineers

Exhibit 4

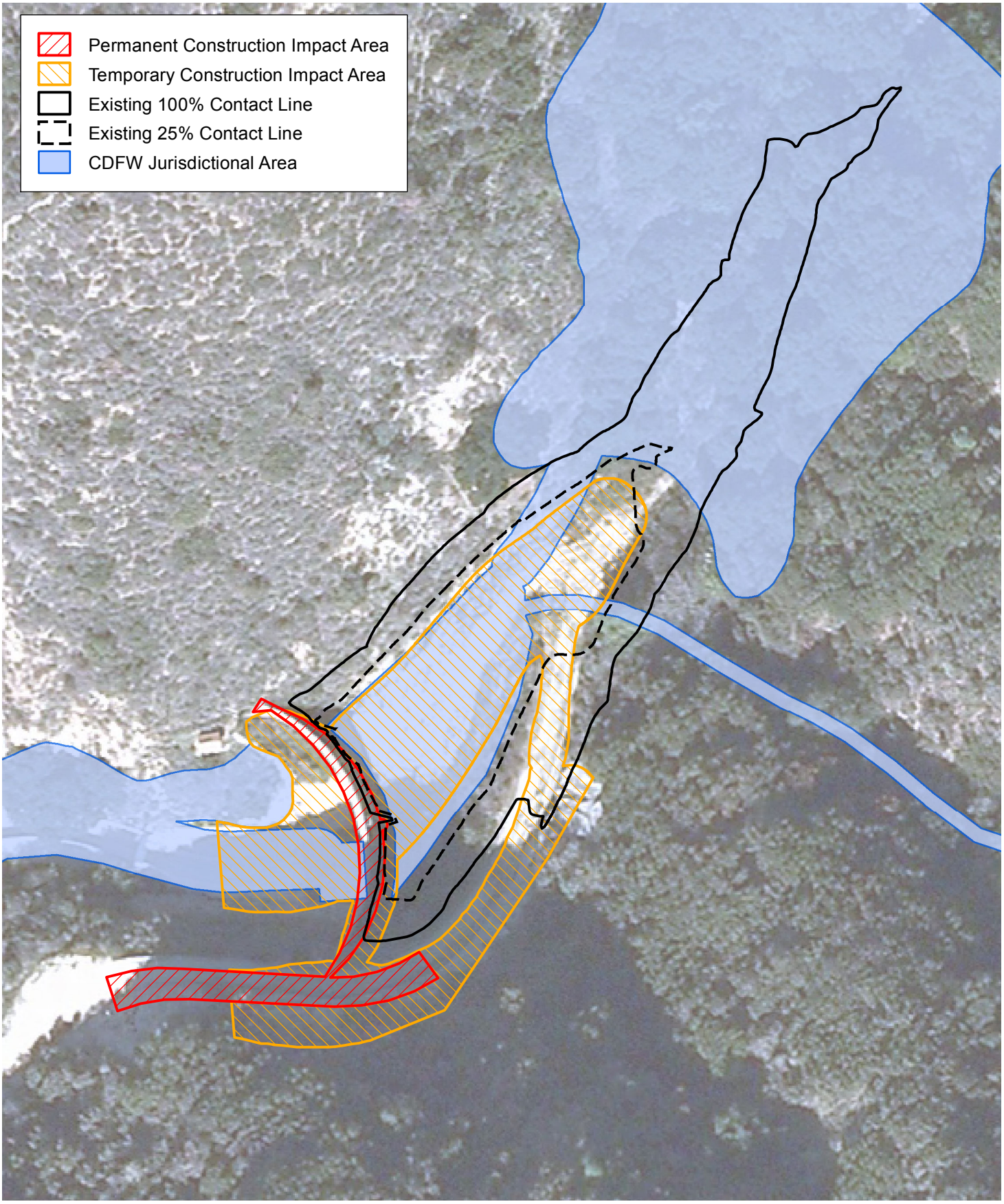
Sunset Upper Debris Basin Dam Modification Project

N W E S

70 35 0 70 Feet

BonTerra CONSULTING

(Rev: 1-18-2013 CJS) R:\PAS\Projects\CoLADPW\J144\Graphics\Bio\Ex4A_JD_USACE.pdf



Jurisdictional Resources: California Department of Fish and Wildlife

Exhibit 5

Sunset Upper Debris Basin Dam Modification Project

N W E S

70 35 0 70 Feet

BonTerra CONSULTING

(Rev: 1-18-2013 CJS) R:\PAS\Projects\CoLADPW\J144\Graphics\Bio\Ex4a_JD_CDFG.pdf

D:\Projects\CoLADPW\J144\mxd\Ex_JD_CDFG.mxd

APPENDIX C

CULTURAL RESOURCES ASSESSMENT MEMORANDUM

BonTerra CONSULTING
2 Executive Circle, Suite 175 Irvine, CA 92614
T: (714) 444-9199 F: (714) 444-9599 | www.BonTerraConsulting.com

January 17, 2013

Ms. Grace Yu
Department of Public Works
County of Los Angeles
900 South Fremont, 2nd Floor Annex
Alhambra, California 91803-1331

VIA EMAIL
gyu@dpw.lacounty.gov

Subject: Cultural Resources Report for the Sunset Upper Debris Basin Dam Modification Project, City of Burbank, Los Angeles County, California

Dear Ms. Yu:

This Letter Report describes the cultural resources study undertaken for the proposed upgrade to the Sunset Upper Debris Basin Dam Modification Project in Los Angeles County, California. The purpose of the proposed project is to increase the capacity at the debris basin.

The location is shown on the U.S. Geological Survey's (USGS') Burbank, California 7.5-Minute Quadrangle, in Townships 1 and 2 North; Ranges 13 and 14 West, within portions of Sections 5, 6, 31, and 32 (S.B.B.M).

This cultural resources study consists of (1) a cultural resources records search undertaken at the South Central Coastal Information Center (SCCIC) at the California State University, Fullerton; (2) Native American scoping initiated through consultation with the Native American Heritage Commission (NAHC) and mailing informational letters to tribes identified by the NAHC; (3) development of a prehistoric context for the project area; (4) a field visit to the Sunset Upper Debris Basin Dam site; (5) a historic resources assessment of the Sunset Upper Debris Basin Dam; and (6) preparation of this Letter Report, which includes a summary of findings, an assessment of the project's potential to adversely impact cultural resources, and recommendations for mitigating any adverse impacts to a less than significant level. This study was performed under Forest Service Permit for Archaeological Investigations (Authorization ID LAR9048), authorized by Mike McIntyre on December 28, 2012.

1. Cultural Resources Records Search

Archaeological Inventory

An archaeological/historical resources records search conducted by BonTerra Consulting Archaeologist Patrick Maxon, RPA on June 6, 2011, at the SCCIC indicates that no cultural resources sites have been previously recorded and/or evaluated on the project site, and no cultural resources studies have been previously completed on the project site. One site, the Starlight Theater (19-186991) is located within one mile of the project site; two sites are located just 1.2 miles southwest of the Sunset Upper Debris Basin Dam's southern boundary: (1) City of Burbank City Hall (19-180746) and (2) the U.S. Post Office – Burbank Downtown Station (19-180751).

Historic Properties Data File Review

In addition to the archaeological inventory records, reports and historic maps, an examination was made of the Historic Property Data File (HPDF) maintained by the Office of Historic Preservation (OHP). The HPDF is a listing of buildings and structures within a specified city that have been evaluated for listing on the National Register of Historic Places (NRHP) and/or the California Register of Historical Resources (CRHR). Each property is assigned a status code after a determination has been made.

A search of the file at the SCCIC found no structures listed within one mile of the project area; however, the City of Burbank City Hall (NR-85000128) and the U.S. Post Office – Burbank Downtown Station (NR-96000426), located 1.2 miles from the Sunset Upper Debris Basin Dam, are both listed on the NRHP.

The Glendale (1928; reprinted 1948) and La Crescenta (1939) historic USGS quadrangles show numerous structures along Sunset Canyon Road within the Sunset Lower Watershed (#3). Many of these same structures are still depicted on the current quadrangle (Burbank 1966; photorevised 1972; minor revision 1994).

2. <u>Native American Scoping</u>

A Sacred Lands File Search was requested of the NAHC, which responded by letter on June 21, 2011. The search did not identify the presence of Native American cultural resources within the project area. The NAHC suggests early consultation with local Native American tribes. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area.

The Native American Contacts List included in the search listed the following individuals:

- Charlie Cook;
- Ron Andrade Director, Native American Indian Commission;
- John Tommy Rosas, Tribal Administrator Gabrielino Tongva Territorial Tribal Nation;
- John Valenzuela, Chairperson, San Fernando Band of Mission Indians;
- Anthony Morales, Chairperson, Gabrielino/Tongva San Gabriel Band of Mission Indians;
- Sam Dunlap, Tribal Secretary, Gabrielino Tongva Nation;
- Robert Dorame, Tribal Chair/Cultural Resources Gabrielino Tongva Indians of California Tribal Council;
- Bernie Acuna, Gabrielino-Tongva Tribe;
- Andy Salas, Chairperson, Shoshoneon Gabrieleno Band of Mission Indians; and
- Linda Candelaria, Chairwoman, Gabrielino-Tongva Tribe.

All individuals and tribes on the list were mailed a letter on June 28, 2011, affording them an opportunity to comment on the project and share any knowledge they have of cultural resources in the project vicinity.

All data collected during Native American scoping are maintained on file at BonTerra Consulting; however, no responses to the inquiry letters have been received to date.

3. Cultural Context

The first useful chronology for Southern California was developed by William Wallace (1955), who described four distinct periods or horizons applicable to the Southern California coastal region as well as inland expressions of Native American culture. Although dated, the chronology's relative accuracy has been vindicated by more recent radiocarbon dates.

Horizon I: Early Man. This initial horizon, relying largely on large game animals that gradually became extinct after the terminal Pleistocene Epoch, dates from an unknown time near the end of the Pleistocene to about 5,500 Before Common Era (BCE).

Horizon II: Milling Stone Assemblages. This successful adaptation, which marked the widespread use of milling tools, persisted essentially unchanged until around 3,000 BCE.

Horizon III: Intermediate Cultures. This period, marked by the introduction of the mortar and pestle allowing for the widespread exploitation of the acorn as a food resource, extended to approximately 1,000 Common Era (CE).

Horizon IV: Late Prehistoric Cultures. This adaptation was marked by population increases; the development of larger, more permanent villages; the widespread use of the bow and arrow; and a generally more complex society.

During the late prehistoric period, the project area was occupied by the Native American societies known to anthropologists as the Fernandeño, a subgroup of the larger Gabrielino population that occupied the Los Angeles Basin. The name "Gabrielino" refers to those people who, in historic times, were administered by the Spanish from Mission San Gabriel. The name "Fernandeño" refers to those people who, in historic times, were administered by the Spanish from Mission San Fernando Rey de España. The Gabrielino arrived in the Los Angeles Basin probably before 500 BCE as part of the so-called Shoshonean (Takic speaking) Wedge from the Great Basin region and gradually displaced the indigenous peoples, probably Hokan speakers. Large, permanent villages were established in the fertile lowlands along rivers and streams and in sheltered areas along the coast. Eventually, Gabrielino territory encompassed the greater Los Angeles Basin, coastal regions from Topanga Canyon in the north to perhaps as far south as Aliso Creek, and the islands of San Clemente, San Nicholas, and Santa Catalina (Bean and Smith 1978:538–540). Recent studies suggest the population may have numbered as many as 10,000 individuals at their peak prior to European contact.

The subsistence economy of the Gabrielino was hunting and gathering. The surrounding environment was rich and varied and the natives were able to exploit mountains, foothills, valleys, deserts and coasts. As with most native Californians, acorns were the staple food (by the Intermediate Horizon), which were supplemented by the roots, leaves, seeds, and fruit of a wide variety of flora (e.g., cactus, yucca, sage, agave). Fresh and saltwater fish, shellfish, birds, insects, as well as large and small mammals, were exploited.

A wide variety of tools and implements were employed by the Gabrielino to gather, collect, and process food resources. The most important hunting tool was the bow and arrow. Traps, nets, blinds, throwing sticks, and slings were also employed. Fish were an important resource and nets, traps, spears, harpoons, hooks, and poisons were used to catch them. Ocean-going plank canoes and tule balsa canoes were used for fishing and for travel by those groups residing near the Pacific Ocean (Moratto 1990:63).

The processing of food resources was accomplished in a variety of ways: nuts were cracked with hammer stone and anvil; acorns were ground with mortar and pestle, seeds and berries with mano and metate. Yucca, an important resource in many areas, was eaten by the natives, as well as exploited for its fibers.

Strainers, leaching baskets and bowls, knives, bone saws, and wooden drying racks were also employed. Food was consumed from a variety of vessels. Catalina Island steatite was used to make ollas and cooking vessels (Kroeber 1925:629).

Gabrielino houses were circular, domed structures of willow poles thatched with tule. They were actually quite large and could in some cases hold fifty individuals. Other structures served as sweathouses, menstrual huts, and ceremonial enclosures (Bean and Smith 1978).

Kroeber (1925:621) considered the Gabrielino:

> …to have been the most advanced group south of Tehachapi, except perhaps the Chumash. They certainly were the wealthiest and most thoughtful of all the Shoshoneans of the State, and dominated these civilizationally wherever contacts occurred.

Post-contact history for the State of California generally is divided into three periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). Although there were brief visits by Spanish, Russian, and British explorers between 1529 and 1769, the beginning of Spanish settlement in California occurred in 1769.

4. Field Visit

Because the construction of a larger dam would have the potential to inundate additional areas at the edges of the existing debris basin, BonTerra Consulting conducted a field visit to the project site to examine those additional areas for the presence of cultural resources. On October 27, 2011, BonTerra Consulting archaeologist Brady Long completed a survey of the debris basin area. Mr. Long examined all accessible areas around the dam and debris basin and viewed the potential additional inundation area where possible. No cultural resources were discovered and, because of the steep terrain at the margins of the dam, no resources are expected in those areas.

5. Historic Resources Assessment

Given that the Sunset Upper Debris Basin Dam exceeds 50 years of age and will be modified as part of the proposed project, Pamela Daly of Daly and Associates was retained to conduct a historic resources assessment and evaluation of the Sunset Upper Debris Basin Dam and its associated structures for its eligibility for listing in the NRHP, CRHR, or as a Designated Historic Resource (DHR) in the City of Burbank.

Ms. Daly conducted research, completed a field survey, and produced a Department of Parks and Recreation (DPR) 523 Series Site Record and evaluation report for the debris basin. In summary, the Sunset Upper Debris Basin Dam and associated features were found ineligible for listing in the NAHC, CRHR, or as a DHR. It does not meet any of the significance criteria (A/1/A, B/2/B, C/3/C, or D/4/D) described in the NRHP (A, B, C, or D), CRHR (1, 2, 3, or 4) or DHR (A, B, C, or D). Therefore, no further consideration need be given to the Sunset Upper Debris Basin Dam and associated structures as an historic cultural resource. The Historic Resources Assessment Report (2011) is included as Attachment A to this Letter Report.

6. Summary

- The cultural resources record search indicates that there is one historic-era site within a one-mile radius of the project area. No prehistoric sites are recorded within the one-mile area.
- The additional area behind the Sunset Upper Debris Basin Dam that could be inundated as a result of the project have been surveyed by an archaeologist. No resources were discovered and none are expected. Therefore, no cultural resource monitoring or other further consideration of archaeological resources is necessary during construction and operation of the project.
- The Sunset Upper Debris Basin Dam exceeds 50 years of age, and therefore meets the minimum age guideline for recordation or evaluation of a historic resource for listing in the NRHP and CRHR. The historic resources assessment completed for the Sunset Upper Debris Basin Dam concludes that it does not meet any of the significance criteria described in the NRHP, CRHR, or DHR. Therefore, no further consideration need be given to the Sunset Canyon Upper Debris Basin and associated structures as an historic cultural resource.

Please contact Patrick Maxon at (714) 444-9199 or pmaxon@bonterraconsulting.com with any questions.

Best regards,

BONTERRA CONSULTING

Patrick O. Maxon, M.A., RPA
Director, Cultural Resources

Attachment A – Historic Resources Assessment Report (2011)

H:\Projects\CoLADPW-S\J144\Cultural\Sunset DB Letter Report 011713.doc

REFERENCES

Bean, L.J. and C.R. Smith
1978 Gabrielino. In *Handbook of North American Indians, California*, Vol 8, Robert F. Heizer (editor), pp. 538-549. Smithsonian Institution, Washington D. C.

Daly, Pamela
2011 Historic Resources Assessment Report of Sunset Canyon Upper Debris Basin, Burbank, Los Angeles County, California.

Kroeber, Alfred J.
1925 *Handbook of the Indians of California*. Dover Publications, Inc. New York.

Moratto, Michael J.
1990 *Cultural and Paleontologic Resources in the Santa Susana and Santa Monica Mountains, Los Angeles County, California*. On file, South Central Coastal Information Center, California State University, Fullerton.

Wallace, William J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. Southwestern Journal of Anthropology Il :214-23th.

SCCIC Bibliography: Sunset Canyon Debris Basin

LA-00795

Author(s): Tartaglia, Louis J.
Year: 1980
Title: Cultural Resource Survey of a Proposed Class Ii Landfill
Affliliation:
Resources:
Quads: BURBANK
Pages:
Notes:

LA-00949

Author(s): Dillon, Brian D.
Year: 1981
Title: An Archaeological Resource Survey and Impact Assessment of Three Telecommunications Tower Sites for the Southern California Rapid Transit District in Los Angeles County, California
Affliliation: University of California, Los Angeles Archaeological Survey
Resources:
Quads: BURBANK, SAN PEDRO
Pages:
Notes:

LA-03516

Author(s): Wlodarski, Robert J.
Year: 1997
Title: Phase 1 Archaeological Study: Oakmont Eir (tentative Tract Map #51548) City of Glendale, County of Los Angeles, California
Affliliation: Historical, Environmental, Archaeological, Research, Team
Resources:
Quads: BURBANK, PASADENA
Pages:
Notes:

LA-05022

Author(s): Iverson, Gary
Year: 1999
Title: Negative Archaeological Survey Report: 178600
Affliliation: Caltrans District 7
Resources:
Quads: BURBANK
Pages:
Notes:

SCCIC Bibliography: Sunset Canyon Debris Basin

LA-08255

Author(s): Arrington, Cindy and Nancy Sikes
Year: 2006
Title: Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project State of California: Volumes I and Ii
Affiliation: SWCA Environmental Consultants, Inc.
Resources:
Quads: ANAHEIM, BLACK MTN, BURBANK, CAMARILLO, CANOGA PARK, DANA POINT, EL TORO, FRAZIER MOUNTAIN, HOLLYWOOD, INGLEWOOD, LEBEC, LIEBRE MTN, LONG BEACH, LOS ALAMITOS, LOS ANGELES, MOORPARK, NEWHALL, NEWPORT BEACH, OAT MOUNTAIN, ORANGE, OXNARD, PITAS POINT, SAN CLEMENTE, SAN FERNANDO, SAN JUAN CAPISTRANO, SANTA SUSANA, SATICOY, SIMI, SOUTH GATE, TUSTIN, VAN NUYS, VENICE, VENTURA, WARM SPRINGS MOUNTAIN, WHITAKER PEAK, WHITE LEDGE PEAK, WHITTIER
Pages:
Notes: Same as OR3373, VN2504

LA-08693

Author(s): Bonner, Wayne H.
Year: 2007
Title: Cultural Resources Records Search and Site Visit Results for T-mobile Candidate Sv00821c (burbank Water Tank), 300 North Sunset Canyon Road, Burbank, Los Angeles County, California
Affiliation: Michael Brandman Associates
Resources:
Quads: BURBANK
Pages:
Notes:

LA-10521

Author(s): Bonner, Wayne
Year: 2001
Title: Cultural Resources Assessment - Canyon Hills Project, City and County of Los Angeles, California
Affiliation: W. H. Bonner Associates
Resources:
Quads: BURBANK, SUNLAND
Pages: 17
Notes:

BonTerra CONSULTING

TRANSMITTAL

DATE: June 20, 2011

TO:	Mr. Dave Singleton	**FAX NUMBER:**	(916) 657-5390
	Program Analyst	**TEL NUMBER:**	(916) 653-6251
	Native American Heritage Comm.	**PROJECT:**	**Sunset Upper Debris Basin Dam Modification Project**
	915 Capitol Mall, Rm. 364		
	Sacramento, CA 95814		
		FROM:	Patrick Maxon, RPA

☒ Fax / Pages__ ☒ E-Mail ☐ Fed Ex / Overnite Express ☐ Delivery / Courier

REGARDING: Sacred Lands File Search and Contact List Request

Dear Mr. Singleton:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed **Sunset Upper Debris Basin Dam Modification Project** located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines).

At your earliest convenience, please conduct searches of the Sacred Lands File for the **Sunset Upper Debris Basin Dam Modification Project** and a one-mile radius. The project location is shown on the USGS ***Burbank, CA*** 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the debris basin.

Please fax the results to me at (714) 444-9599, or e-mail to pmaxon@bonterraconsulting.com, referencing your letter to the "**Sunset Upper Debris Basin Dam Modification Project** ".

If you have any questions or require any additional information, please do not hesitate to contact me at (714) 444-9199 or via email.

Sincerely,

BONTERRA CONSULTING

Patrick Maxon, RPA
Director, Cultural Resources

151 Kalmus Drive, Suite E-200 Costa Mesa, CA 92626-7969 (714) 444-9199 (714) 444-9599 Fax

STATE OF CALIFORNIA

Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

June 21, 2011

Mr. Patrick Maxon, RPA – Director, Cultural Resources
BonTerra Consulting
151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

Sent by FAX to: 714-444-9599
No. of Pages: 4

Re: Sacred Lands File Search and Native American Contacts list for the **"Proposed Sunset Upper Debris Basin Dam Modification Project"** located in the Burbank Area; Los Angeles County, California

Dear Mr.Maxon:

The Native American Heritage Commission (NAHC) conducted a Sacred Lands File search of the 'areas of potential effect,' (APEs) based on the USGS coordinates provided and found **Native American cultural resources** **were not identified** in the USGS coordinates you specified. Also, please note; the NAHC Sacred Lands Inventory is not exhaustive; Native American cultural resources may be inadvertently discovered during ground-breaking activity.

The California Environmental Quality Act (CEQA – CA Public Resources Code §§ 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. CA Government Code §65040.12(e) defines "environmental justice" provisions and is applicable to the environmental review processes.

Early consultation, even during Initial Study or First Phase surveys with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Local Native Americans may have knowledge of the religious and cultural significance of the historic properties of the proposed project for the area (e.g. APE). Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). We urge consultation with those tribes and interested Native Americans on the list of Native American Contacts we attach to this letter in order to see if your proposed project might impact Native American cultural resources. Lead agencies should consider avoidance as defined in §15370 of the CEQA Guidelines when significant cultural resources as defined by the CEQA Guidelines §15064.5 (b)(c)(f) may be affected by a proposed project. If so, Section 15382 of the CEQA Guidelines defines a

California Native American Contact List
Los Angeles County
June 21, 2011

Charles Cooke
32835 Santiago Road
Acton , CA 93510
suscol@intox.net

Chumash
Fernandeno
Tataviam
Kitanemuk

(661) 733-1812 - cell
suscol@intox.net

LA City/County Native American Indian Comm
Ron Andrade, Director
3175 West 6th St, Rm. 403
Los Angeles , CA 90020
randrade@css.lacounty.gov
(213) 351-5324
(213) 386-3995 FAX

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
Private Address
,
tattnlaw@gmail.com
310-570-6567

Gabrielino Tongva

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall , CA 91322
tsen2u@hotmail.com
(661) 753-9833 Office
(760) 885-0955 Cell
(760) 949-1604 Fax

Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

Gabrieleno/Tongva San Gabriel Band of Mission
Anthony Morales, Chairperson
PO Box 693
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 286-1632
(626) 286-1758 - Home
(626) 286-1262 -FAX

Gabrielino Tongva

Gabrielino Tongva Nation
Sam Dunlap, Chairperson
P.O. Box 86908
Los Angeles , CA 90086
samdunlap@earthlink.net

(909) 262-9351 - cell

Gabrielino Tongva

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490
Bellflower , CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-761-6417- fax

Gabrielino Tongva

Gabrielino-Tongva Tribe
Bernie Acuna
1875 Century Pk East #1500
Los Angeles , CA 90067
(760) 721-0371-work
(310) 428-7720 - cell
(310) 587-0170 - FAX
bacuna1@gabrieinotribe.org

Gabrielino

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Sunset Upper Debris Basin Dam Modification Project; located in the Burbank area; Los Angeles County, California for which a Sacred Lands File search and Native American Contacts list were requested.

California Native American Contact List
Los Angeles County
June 21, 2011

Shoshoneon Gabrieleno Band of Mission Indians
Andy Salas, Chairperson
PO Box 393 Gabrieleno
Covina , CA 91723
(626) 926-4131
gabrielenoindians@yahoo.com
(213) 688-0181 - FAX

Gabrielino-Tongva Tribe
Linda Candelaria, Chairwoman
1875 Century Park East, Suite 1500
Los Angeles , CA 90067 Gabrielino
lcandelaria1@gabrielinoTribe.org
626-676-1184- cell
(310) 587-0170 - FAX
760-904-6533-home

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Sunset Upper Debris Basin Dam Modification Project; located in the Burbank area; Los Angeles County, California for which a Sacred Lands File search and Native American Contacts list were requested.

significant impact on the environment as "substantial," and Section 2183.2 which requires documentation, data recovery of cultural resources.

Partnering with local tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321-43351) and Section 106 4(f), Section 110 (f)(k) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq*. and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation.

Also, California Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery', another important reason to have Native American Monitors on board with the project.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. An excellent way to reinforce the relationship between a project and local tribes is to employ Native American Monitors in all phases of proposed projects including the planning phases.

Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibility threatened by proposed project activity.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Contact List

BonTerra CONSULTING

PASADENA COSTA MESA

T: (714) 444-9199 F: (714) 444-9599
www.BonTerraConsulting.com

151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

June 28, 2011

Mr. Bernie Acuna
Gabrielino-Tongva Tribe
1875 Century Park East 1500
Los Angeles, California 90067

Subject: Sunset Upper Debris Basin Dam Modification Project

Dear Mr. Acuna:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed Sunset Upper Debris Basin Dam Modification Project located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines). However, as part of the background cultural resources research being conducted, this letter is to inform you of the proposed project and to request any relevant information you may have regarding cultural resources on or near the project site.

Location

The project location is shown on the USGS *Burbank, CA* 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

Project

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the basin.

NAHC Notification

A Sacred Lands File Search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources on the project site. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Your name and contact information was included on the list and serves as the basis for this letter.

Records Search/Survey

An archaeological/historic records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton to evaluate the existing conditions of the project site. No resources have been recorded on or within one mile of the project site.

Your participation in this local planning process is important. If you have any additional knowledge of Native American Sacred Lands or other cultural resources on or near the study area, or any comment on the project, please contact me at your earliest convenience at (714) 444-9199 or via email at pmaxon@bonterraconsulting.com, with a subject line referencing the "Sunset Upper Debris Basin Dam Modification Project".

Sincerely,

BONTERRA CONSULTING

Patrick O. Maxon, RPA
Director, Cultural Resources

R:\Projects\CoLADPW-S\J144\Cultural\NA Scoping Ltr-062811.doc

BonTerra CONSULTING

PASADENA COSTA MESA

T: (714) 444-9199 F: (714) 444-9599
www.BonTerraConsulting.com

151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

June 28, 2011

Mr. Ron Andrade
LA City/County Native American Indian Comm.
3175 W. 6th Street, Rm. 403
Los Angeles, California 90020

Subject: Sunset Upper Debris Basin Dam Modification Project

Dear Mr. Andrade:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed Sunset Upper Debris Basin Dam Modification Project located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines). However, as part of the background cultural resources research being conducted, this letter is to inform you of the proposed project and to request any relevant information you may have regarding cultural resources on or near the project site.

Location

The project location is shown on the USGS *Burbank, CA* 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

Project

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the basin.

NAHC Notification

A Sacred Lands File Search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources on the project site. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Your name and contact information was included on the list and serves as the basis for this letter.

Records Search/Survey

An archaeological/historic records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton to evaluate the existing conditions of the project site. No resources have been recorded on or within one mile of the project site.

Your participation in this local planning process is important. If you have any additional knowledge of Native American Sacred Lands or other cultural resources on or near the study area, or any comment on the project, please contact me at your earliest convenience at (714) 444-9199 or via email at pmaxon@bonterraconsulting.com, with a subject line referencing the "Sunset Upper Debris Basin Dam Modification Project".

Sincerely,

BONTERRA CONSULTING

Patrick O. Maxon, RPA
Director, Cultural Resources

R:\Projects\CoLADPW-S\J144\Cultural\NA Scoping Ltr-062811.doc

BonTerra CONSULTING

PASADENA COSTA MESA

T: (714) 444-9199 F: (714) 444-9599
www.BonTerraConsulting.com

151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

June 28, 2011

Ms. Linda Candelaria
Gabrielino-Tongva Tribe
1875 Century Park East 1500
Los Angeles, California 90067

Subject: Sunset Upper Debris Basin Dam Modification Project

Dear Ms. Candelaria:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed Sunset Upper Debris Basin Dam Modification Project located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines). However, as part of the background cultural resources research being conducted, this letter is to inform you of the proposed project and to request any relevant information you may have regarding cultural resources on or near the project site.

Location

The project location is shown on the USGS *Burbank, CA* 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

Project

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the basin.

NAHC Notification

A Sacred Lands File Search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources on the project site. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Your name and contact information was included on the list and serves as the basis for this letter.

Records Search/Survey

An archaeological/historic records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton to evaluate the existing conditions of the project site. No resources have been recorded on or within one mile of the project site.

Your participation in this local planning process is important. If you have any additional knowledge of Native American Sacred Lands or other cultural resources on or near the study area, or any comment on the project, please contact me at your earliest convenience at (714) 444-9199 or via email at pmaxon@bonterraconsulting.com, with a subject line referencing the "Sunset Upper Debris Basin Dam Modification Project".

Sincerely,

BONTERRA CONSULTING

Patrick O. Maxon, RPA
Director, Cultural Resources

R:\Projects\CoLADPW-S\J144\Cultural\NA Scoping Ltr-062811.doc

BonTerra CONSULTING

PASADENA COSTA MESA

T: (714) 444-9199 F: (714) 444-9599
www.BonTerraConsulting.com

151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

June 28, 2011

Mr. Charles Cooke
Tehachapi Indian Tribe
32835 Santiago Road
Acton, California 93510

Subject: Sunset Upper Debris Basin Dam Modification Project

Dear Mr. Cooke:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed Sunset Upper Debris Basin Dam Modification Project located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines). However, as part of the background cultural resources research being conducted, this letter is to inform you of the proposed project and to request any relevant information you may have regarding cultural resources on or near the project site.

Location

The project location is shown on the USGS *Burbank, CA* 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

Project

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the basin.

NAHC Notification

A Sacred Lands File Search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources on the project site. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Your name and contact information was included on the list and serves as the basis for this letter.

Records Search/Survey

An archaeological/historic records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton to evaluate the existing conditions of the project site. No resources have been recorded on or within one mile of the project site.

Your participation in this local planning process is important. If you have any additional knowledge of Native American Sacred Lands or other cultural resources on or near the study area, or any comment on the project, please contact me at your earliest convenience at (714) 444-9199 or via email at pmaxon@bonterraconsulting.com, with a subject line referencing the "Sunset Upper Debris Basin Dam Modification Project".

Sincerely,

BONTERRA CONSULTING

Patrick O. Maxon, RPA
Director, Cultural Resources

R:\Projects\CoLADPW-S\J144\Cultural\NA Scoping Ltr-062811.doc

BonTerra CONSULTING

PASADENA COSTA MESA

T: (714) 444-9199 F: (714) 444-9599
www.BonTerraConsulting.com

151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

June 28, 2011

Mr. Robert Dorame
Gabrielino Tongva Indians of California Tribal Council
PO Box 490
Bellflower, California 90707

Subject: Sunset Upper Debris Basin Dam Modification Project

Dear Mr. Dorame:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed Sunset Upper Debris Basin Dam Modification Project located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines). However, as part of the background cultural resources research being conducted, this letter is to inform you of the proposed project and to request any relevant information you may have regarding cultural resources on or near the project site.

Location

The project location is shown on the USGS *Burbank, CA* 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

Project

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the basin.

NAHC Notification

A Sacred Lands File Search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources on the project site. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Your name and contact information was included on the list and serves as the basis for this letter.

Records Search/Survey

An archaeological/historic records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton to evaluate the existing conditions of the project site. No resources have been recorded on or within one mile of the project site.

Your participation in this local planning process is important. If you have any additional knowledge of Native American Sacred Lands or other cultural resources on or near the study area, or any comment on the project, please contact me at your earliest convenience at (714) 444-9199 or via email at pmaxon@bonterraconsulting.com, with a subject line referencing the "Sunset Upper Debris Basin Dam Modification Project".

Sincerely,

BONTERRA CONSULTING

Patrick O. Maxon, RPA
Director, Cultural Resources

R:\Projects\CoLADPW-S\J144\Cultural\NA Scoping Ltr-062811.doc

BonTerra CONSULTING

PASADENA COSTA MESA

T: (714) 444-9199 F: (714) 444-9599
www.BonTerraConsulting.com

151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

June 28, 2011

Mr. Samuel H. Dunlap
Gabrielino/Tongva Council / Gabrielino Tongva Nation
PO Box 86908
Los Angeles, California 90086

Subject: Sunset Upper Debris Basin Dam Modification Project

Dear Mr. Dunlap:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed Sunset Upper Debris Basin Dam Modification Project located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines). However, as part of the background cultural resources research being conducted, this letter is to inform you of the proposed project and to request any relevant information you may have regarding cultural resources on or near the project site.

Location

The project location is shown on the USGS *Burbank, CA* 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

Project

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the basin.

NAHC Notification

A Sacred Lands File Search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources on the project site. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Your name and contact information was included on the list and serves as the basis for this letter.

Records Search/Survey

An archaeological/historic records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton to evaluate the existing conditions of the project site. No resources have been recorded on or within one mile of the project site.

Your participation in this local planning process is important. If you have any additional knowledge of Native American Sacred Lands or other cultural resources on or near the study area, or any comment on the project, please contact me at your earliest convenience at (714) 444-9199 or via email at pmaxon@bonterraconsulting.com, with a subject line referencing the "Sunset Upper Debris Basin Dam Modification Project".

Sincerely,

BONTERRA CONSULTING

Patrick O. Maxon, RPA
Director, Cultural Resources

R:\Projects\CoLADPW-S\J144\Cultural\NA Scoping Ltr-062811.doc

BonTerra CONSULTING

PASADENA COSTA MESA

T: (714) 444-9199 F: (714) 444-9599
www.BonTerraConsulting.com

151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

June 28, 2011

Mr. Anthony Morales
Gabrieleno/Tongva Tribal Council
P.O. Box 693
San Gabriel, California 91778

Subject: Sunset Upper Debris Basin Dam Modification Project

Dear Mr. Morales:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed Sunset Upper Debris Basin Dam Modification Project located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines). However, as part of the background cultural resources research being conducted, this letter is to inform you of the proposed project and to request any relevant information you may have regarding cultural resources on or near the project site.

Location

The project location is shown on the USGS *Burbank, CA* 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

Project

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the basin.

NAHC Notification

A Sacred Lands File Search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources on the project site. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Your name and contact information was included on the list and serves as the basis for this letter.

Records Search/Survey

An archaeological/historic records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton to evaluate the existing conditions of the project site. No resources have been recorded on or within one mile of the project site.

Your participation in this local planning process is important. If you have any additional knowledge of Native American Sacred Lands or other cultural resources on or near the study area, or any comment on the project, please contact me at your earliest convenience at (714) 444-9199 or via email at pmaxon@bonterraconsulting.com, with a subject line referencing the "Sunset Upper Debris Basin Dam Modification Project".

Sincerely,

BONTERRA CONSULTING

Patrick O. Maxon, RPA
Director, Cultural Resources

R:\Projects\CoLADPW-S\J144\Cultural\NA Scoping Ltr-062811.doc

BonTerra CONSULTING

PASADENA COSTA MESA

T: (714) 444-9199 F: (714) 444-9599
www.BonTerraConsulting.com

151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

June 28, 2011

Mr. John Tommy Rosas
Tongva Ancestral Territorial Tribal Nation

VIA EMAIL
tattnlaw@gmail.com

Subject: Sunset Upper Debris Basin Dam Modification Project

Dear Mr. Rosas:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed Sunset Upper Debris Basin Dam Modification Project located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines). However, as part of the background cultural resources research being conducted, this letter is to inform you of the proposed project and to request any relevant information you may have regarding cultural resources on or near the project site.

Location

The project location is shown on the USGS *Burbank, CA* 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

Project

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the basin.

NAHC Notification

A Sacred Lands File Search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources on the project site. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Your name and contact information was included on the list and serves as the basis for this letter.

Records Search/Survey

An archaeological/historic records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton to evaluate the existing conditions of the project site. No resources have been recorded on or within one mile of the project site.

Your participation in this local planning process is important. If you have any additional knowledge of Native American Sacred Lands or other cultural resources on or near the study area, or any comment on the project, please contact me at your earliest convenience at (714) 444-9199 or via email at pmaxon@bonterraconsulting.com, with a subject line referencing the "Sunset Upper Debris Basin Dam Modification Project".

Sincerely,

BONTERRA CONSULTING

Patrick O. Maxon, RPA
Director, Cultural Resources

R:\Projects\CoLADPW-S\J144\Cultural\NA Scoping Ltr-062811.doc

BonTerra CONSULTING

PASADENA COSTA MESA

T: (714) 444-9199 F: (714) 444-9599
www.BonTerraConsulting.com

151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

June 28, 2011

Mr. Andy Salas
Shoshoneon Gabrieleno Band of Mission Indians
P.O. Box 393
Covina, California 91723

Subject: Sunset Upper Debris Basin Dam Modification Project

Dear Mr. Salas:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed Sunset Upper Debris Basin Dam Modification Project located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines). However, as part of the background cultural resources research being conducted, this letter is to inform you of the proposed project and to request any relevant information you may have regarding cultural resources on or near the project site.

Location

The project location is shown on the USGS *Burbank, CA* 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

Project

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the basin.

NAHC Notification

A Sacred Lands File Search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources on the project site. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Your name and contact information was included on the list and serves as the basis for this letter.

Records Search/Survey

An archaeological/historic records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton to evaluate the existing conditions of the project site. No resources have been recorded on or within one mile of the project site.

Your participation in this local planning process is important. If you have any additional knowledge of Native American Sacred Lands or other cultural resources on or near the study area, or any comment on the project, please contact me at your earliest convenience at (714) 444-9199 or via email at pmaxon@bonterraconsulting.com, with a subject line referencing the "Sunset Upper Debris Basin Dam Modification Project".

Sincerely,

BONTERRA CONSULTING

Patrick O. Maxon, RPA
Director, Cultural Resources

R:\Projects\CoLADPW-S\J144\Cultural\NA Scoping Ltr-062811.doc

BonTerra CONSULTING

PASADENA COSTA MESA

T: (714) 444-9199 F: (714) 444-9599 | 151 Kalmus Drive, Suite E-200
www.BonTerraConsulting.com | Costa Mesa, CA 92626

June 28, 2011

Mr. John Valenzuela
San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, California 91322

Subject: Sunset Upper Debris Basin Dam Modification Project

Dear Mr. Valenzuela:

BonTerra Consulting has been retained to complete a cultural resources study for the proposed Sunset Upper Debris Basin Dam Modification Project located near the City of Burbank, Los Angeles County, California. This project does not require a General or Specific Plan amendment or adoption; therefore, the project is not subject the statutory requirements of Senate Bill 18 (Tribal Consultation Guidelines). However, as part of the background cultural resources research being conducted, this letter is to inform you of the proposed project and to request any relevant information you may have regarding cultural resources on or near the project site.

Location

The project location is shown on the USGS *Burbank, CA* 7.5 Minute Quadrangles in Township 1 and 2 North; Range 13 and 14 West, portions of Sections 5, 6, 31, and 32 (*S.B.B.M*). Refer to attached exhibit.

Project

The project entails the construction of an extension to the existing dam at the Sunset Upper Debris Basin to increase the capacity of the basin.

NAHC Notification

A Sacred Lands File Search conducted by the Native American Heritage Commission (NAHC) did not identify the presence of Native American cultural resources on the project site. The NAHC also provided BonTerra Consulting with a list of Native American individuals/organizations that may have knowledge of cultural resources in the project area. Your name and contact information was included on the list and serves as the basis for this letter.

Records Search/Survey

An archaeological/historic records search was conducted at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton to evaluate the existing conditions of the project site. No resources have been recorded on or within one mile of the project site.

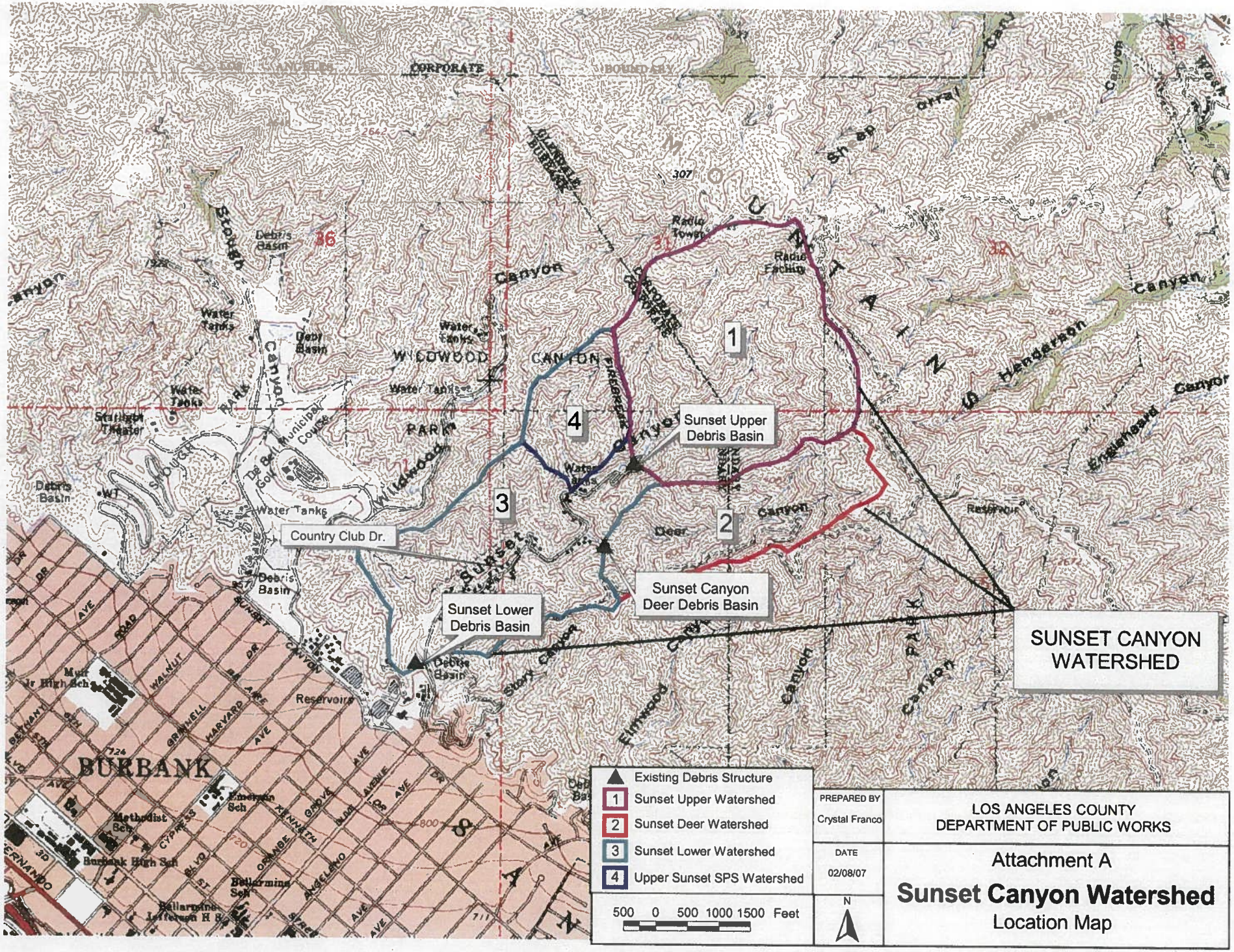
Your participation in this local planning process is important. If you have any additional knowledge of Native American Sacred Lands or other cultural resources on or near the study area, or any comment on the project, please contact me at your earliest convenience at (714) 444-9199 or via email at pmaxon@bonterraconsulting.com, with a subject line referencing the "Sunset Upper Debris Basin Dam Modification Project".

Sincerely,

BONTERRA CONSULTING

Patrick O. Maxon, RPA
Director, Cultural Resources

R:\Projects\CoLADPW-S\J144\Cultural\NA Scoping Ltr-062811.doc


Sunset Upper Debris Basin
Sunset Canyon Deer Debris Basin
Sunset Lower Debris Basin
Country Club Dr.
SUNSET CANYON WATERSHED
Existing Debris Structure
1 Sunset Upper Watershed
2 Sunset Deer Watershed
3 Sunset Lower Watershed
4 Upper Sunset SPS Watershed
500 0 500 1000 1500 Feet
N
PREPARED BY
Crystal Franco
DATE
02/08/07
LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
Attachment A
Sunset Canyon Watershed
Location Map

ATTACHMENT A

HISTORIC RESOURCES ASSESSMENT REPORT (2011)

HISTORIC RESOURCES ASSESSMENT REPORT

Of

Sunset Canyon Upper Debris Basin
Burbank, Los Angeles County, CA

Owned by: Los Angeles County Flood Control District
Maintained by: County of Los Angeles Department of Public Works

(Northeast ¼ of Northwest ¼ of Section 6, Township 1 North, Range 13 West San Bernardino Base and Meridian)

Prepared for:
BonTerra Consulting
151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626

Prepared by
Pamela Daly, M.S.H.P.
Daly & Associates
4486 University Avenue
Riverside, CA 92501

November 2011

EXECUTIVE SUMMARY

This assessment report documents and evaluates the federal, state, and local significance and eligibility of Sunset Canyon Upper Debris Basin, dam, and associated features (collectively referred to as UDB.) The UDB is owned and maintained by the County of Los Angeles Department of Public Works, Alhambra, California.

The historic resource assessment and evaluation of the UDB was conducted by Pamela Daly, M.S.H.P., Senior Architectural Historian. In order to identify and evaluate the subject property as a potential historic resource, a multi-step methodology was utilized. An inspection of the site and existing structures, combined with a review of local and regional historic archives regarding the subject property, was performed to document existing conditions and assist in assessing and evaluating the property for significance.

In evaluating the subject property's historical significance federal, state, and local criteria were applied. The UDB is not currently listed in the National Register, the California Register, or as an Eligible or Designated Historic Resource in the City of Burbank.

Under National Register, California Register, or City of Burbank criteria relating to the UDB's association with significant historical events that exemplifying broad patterns of our history, the UDB does not qualify as a significant resource. Research has revealed that the UDB was constructed by the Los Angeles County Flood Control District to channel seasonal rainfall draining from the Verdugo Mountains into Sunset Canyon. Debris basins and dams were integral tools used by the County Flood Control department to control runoff from the various mountains surrounding Los Angeles County, and were not unique engineering structures. There is no evidence that the UDB is eligible for listing under Criteria A/1/A.

Under National Register, California Register, or City of Burbank criteria relating to the UDB's association with persons of historic importance, the UDB does not qualify as a significant resource. The UDB was designed and constructed under the direction of the Los Angeles County Flood Control District staff engineers. There is no evidence that the structure is eligible for listing under Criteria B/2/B.

Under National Register, California Register, or City of Burbank criteria relating to the distinctive characteristics of a type, period, region, or method of construction, the UDB is not significant as it does not embody any distinctive style, the use of new technology, or an important engineering design. The UDB was constructed by simply creating a basin within the upper reaches of Sunset Canyon, and constructing a poured-concrete, cantilever arch dam between the canyon walls to temporarily hold runoff from seasonal rainfall. The UDB is not eligible for listing under Criteria C/3/C.

Based upon a survey of the above-ground historic period resources at the UDB performed in October 2011, the UDB has not yielded, nor does it appear to have the potential to yield, information important to the history of the local area, California or the nation pursuant to Criteria D/4/D.

In summation, the UDB is not eligible for listing in the National Register, the California Register, or as an Eligible or Designated Historic Resource in the City of Burbank, as a significant historic resource, as it does not meet any of the criteria necessary for listing in the registries.

TABLE OF CONTENTS

I. INTRODUCTION 1
A. Project description 1
B. background information 4
C. Methodology 5
II. REGULATORY FRAMEWORK 6
A. Federal Level 6
1. National Register of Historic Places 6
B. State Level 9
1. California Register of Historical Resources 9
2. California Office of Historical Preservation Survey Methodology 10
C. Local Level 11
1. City of Burbank 11
III. EVALUATION 13
A. Historic Context 13
1. Burbank 13
2. Sunset Canyon/Country Club Drive 14
B. Historic Resources Identified 16
C. Significance 20
IV. BIBLIOGRAPHY 22
A. Publications 22
B. Public Records, Prior Reports, Other 23

Figures

1. Regional Project Location
2. Location of Sunset Canyon Upper Debris Basin.

Photographs

1. Aerial view of the location of Upper Sunset Canyon Debris Basin
2. Aerial view of the Upper Sunset Canyon Debris Basin dam and access road
3. East elevation of the dam from the adjacent service road
4. East (uphill) face of the dam
5. West (downhill) face of the dam
6. View of spillway and gunite clad hills

Appendices

A. Drawings and plans of the Sunset Canyon Debris Basin and dam.
B. California Department of Parks and Recreation Inventory Site Forms (DPR forms)

I. INTRODUCTION

A. PROJECT DESCRIPTION

Sunset Canyon is located in the City of Burbank, in the west slope of the Verdugo Mountains. (Figure 1) It is accessed by traveling east on Olive Avenue, then continuing onto Country Club Drive and into Sunset Canyon. (Figure 2) The Sunset Canyon Watershed is comprised of three sub-watersheds, Sunset Upper Watershed, Sunset Lower Watershed, and Sunset Canyon Deer Watershed. Country Club Drive not only provides access to 44 residences constructed on the steep walls of the canyon that line the roadway, but also acts as a conduit for runoff during rain events and debris flows.

The UDB is located at the base of the Sunset Upper Watershed, and has a maximum capacity of 15,900 cubic yards of debris that can be held by a concrete dam. The UDB was constructed in 1929-1932, and consists of a man-made earthen debris basin that collects water and runoff, a poured concrete cantilevered-arch dam, a poured concrete spillway, a utility building, concrete walkways, and gunite-clad hillsides. (Photograph 1)

It has been computed that the amount of water and debris generated by a 50-year storm, over already saturated ground recovering from a forest fire, would not be able to completely accommodate the runoff and debris coming out of the watershed, thereby endangering people and property located in the area between the UDB and Sunset Lower Debris Basin. During a major storm event, the excess (floating) debris would flow down Country Club Drive until deposited in Sunset Lower Debris Basin. The UDB dam is owned by the Los Angeles County Flood Control District and maintained by the Los Angeles County Department of Public Works.

Seasonal storm runoff and debris flows are conveyed down Country Club Drive to Sunset Lower Debris Basin. The storm runoff impacts residents and drivers due to the high velocity water and mud flows. There is a 6-inch drainage pipe that runs under the street, but it can only handle the light runoff flow from the natural springs located in the canyon, and nuisance runoff.

To address the potential excess debris flow from the Sunset Upper Watershed, five alternatives were considered: (1) construction of a 5-foot high parapet wall on top of the existing UDB dam wall to increase the basin's sediment storage capacity; (2) removal of the existing UDB dam and replacement with a 58-foot high concrete dam at that location; (3) construction of a 50-foot high structure downstream of UDB dam to control sediment flows exceeding the UDB capacity and sediment from the uncontrolled Upper Sunset Watershed; (4) construction of a rail and timber structure at the base of UDB dam and possibly development of the canyon into a functional sediment placement site, if necessary; and (5) review of existing aerial photographs of the Sunset Upper Canyon watershed, field investigation of the watershed,

and application of erosion and slope stability control techniques and ground cover to reduce the sediment produced by the Sunset Upper Canyon watershed.

The evaluation of the UDB dam has been prepared so that the LACDWP may decide which alternative is most appropriate and present information necessary for any future alterations to the built environment at the site. This report includes a discussion of the survey methodology used, a brief historic context, and formal evaluation of the UDB.

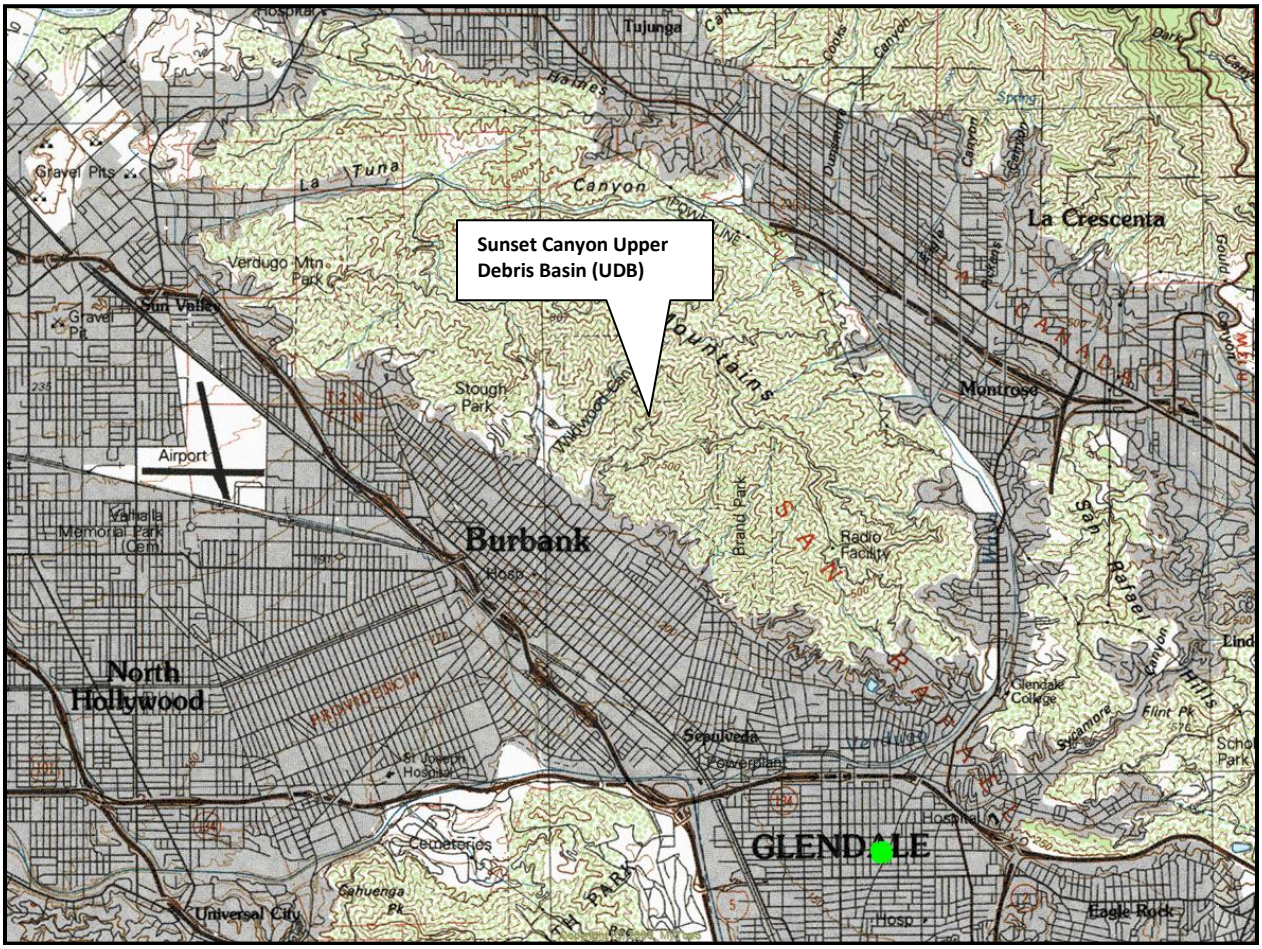


Figure 1: Regional Project Location
(U.S.G.S. Burbank Quad, 1:100,000)

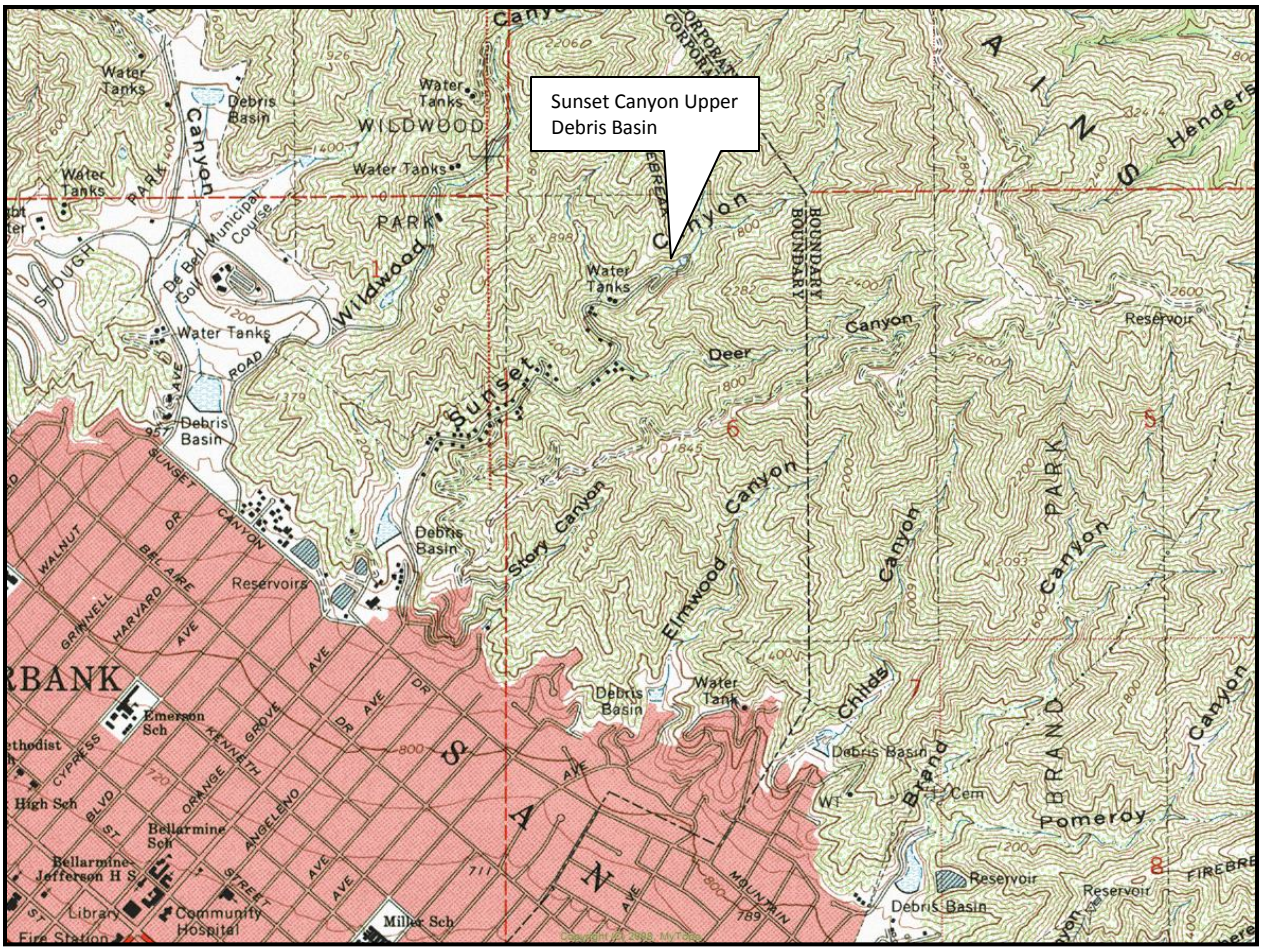
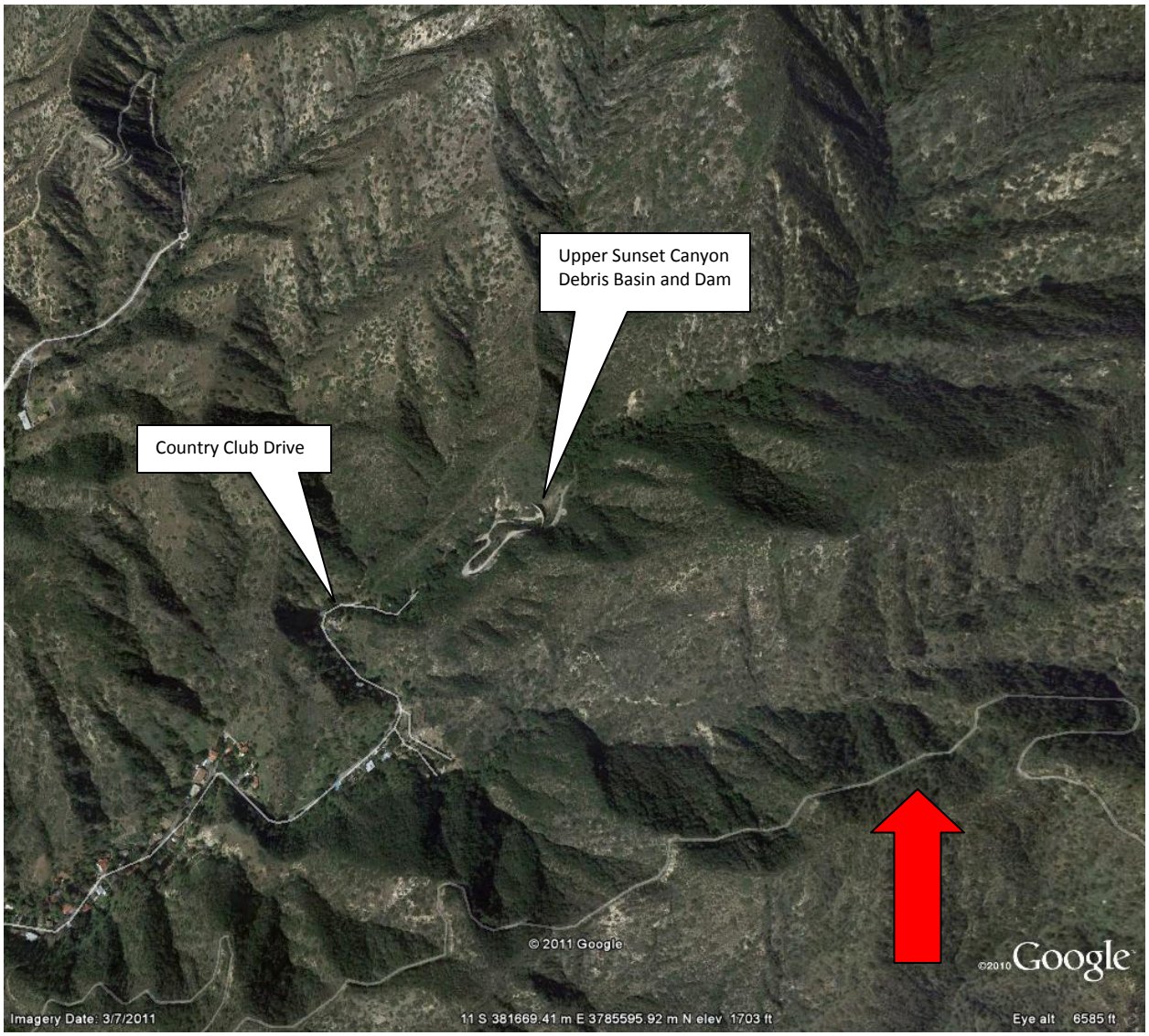


Figure 2: Location of Sunset Canyon Upper Debris Basin.
(U.S.G.S. Burbank Quad, 1:24,000)



Photograph 1: Aerial view of the location of Upper Sunset Canyon Debris Basin. (Source: Google Earth, 2011.)

B. BACKGROUND INFORMATION

The UDB, including associated built-environment resources, has not been formally surveyed either as an independent resource or as an associated feature of the Sunset Canyon Watershed system for eligibility for listing in the National Register of Historic Places, or California Register of Historical Resources.

C. METHODOLOGY

The historic resource assessment and evaluation for this report was conducted by Pamela Daly, M.S.H.P., Senior Architectural Historian. In order to identify and evaluate the subject property as a potential historic resource, a multi-step methodology was utilized. An inspection of the existing structure and associated features, combined with a review of accessible archival sources for this structure, was performed to document existing conditions and assist in assessing and evaluating the property for significance. Photographs were taken of the structure and associated structures and features, including photographs of architectural details or other points of interest, during the pedestrian-level survey.

The National Register of Historic Places (National Register), California Register of Historical Resources (California Register), and City of Burbank's Historic Resources criteria were employed to evaluate the significance of the property. In addition, the following tasks were performed for the study:

- The National Register and the California Historical Resources Inventory were searched.

- Site-specific research was conducted on the Sunset Canyon Upper Debris Basin utilizing maps, city directories, newspaper articles, historical photographs, and other published sources.

- Background research was performed at local historic archives and through internet resources.

- Ordinances, statutes, regulations, bulletins, and technical materials relating to federal, state, and local historic preservation, designation assessment processes, and related programs were reviewed and analyzed.

II. REGULATORY FRAMEWORK

Historic resources fall within the jurisdiction of several levels of government. Federal laws provide the framework for the identification, and in certain instances, protection of historic resources. Additionally, states and local jurisdictions play active roles in the identification, documentation, and protection of such resources within their communities. The National Historic Preservation Act of 1966 as amended (NHPA), and the California Register of Historical Resources (CRHR), are the primary federal and state laws and regulations governing the evaluation and significance of historic resources of national, state, regional, and local importance. A description of these relevant laws and regulations are presented below.

In analyzing the historic significance of the subject property, criteria for designation under federal, and State landmark programs were considered. Additionally, the Office of Historic Preservation (OHP) survey methodology was used to survey and rate the relative significance of the property.

A. FEDERAL LEVEL

1. National Register of Historic Places

First authorized by the Historic Sites Act of 1935, the National Register was established by the NHPA as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment."[1] The National Register recognizes properties that are significant at the national, state and local levels.

To be eligible for listing in the National Register, the quality of significance in American history, architecture, archaeology, engineering, or culture must be in a district, site, building, structure, or object that possesses integrity of location, design, setting, materials, workmanship, feeling and association, and:[2]

A. is associated with events that have made a significant contribution to the broad patterns of our history; or

B. is associated with the lives of persons significant in our past; or

---

[1] *Code of Federal Regulations (CFR), 36 § 60.2.*

[2] *Guidelines for Completing National Register Forms, National Register Bulletin 16, U.S. Department of the Interior, National Park Service, September 30, 1986 ("National Register Bulletin 16"). This bulletin contains technical information on comprehensive planning, survey of cultural resources, and registration in the National Register of Historic Places.*

C. embodies the distinctive characteristics of a type, period, or method of construction or that represents the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. yields, or may be likely to yield, information important to prehistory or history.

A property eligible for listing in the National Register must meet one or more of the four criteria (A-D) defined above. In addition, unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for National Register listing.

In addition to meeting the criteria of significance, a property must have integrity. "Integrity is the ability of a property to convey its significance."[3] According to *National Register Bulletin 15*, within the concept of integrity, the National Register criteria recognize seven aspects or qualities that, in various combinations, define integrity. To retain historic integrity a property will always possess several, and usually most, of these seven aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance.[4] The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. The following is excerpted from *National Register Bulletin 15,* which provides guidance on the interpretation and application of these factors.

- Location is the place where the historic property was constructed or the place where the historic event occurred.[5]
- Design is the combination of elements that create the form, plan, space, structure, and style of the property.[6]
- Setting is the physical environment of a historic property.[7]
- Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.[8]

---

[3] *National Register Bulletin 15, page 44.*

[4] *Ibid.*

[5] *"The relationship between the property and its location is often important to understanding why the property was created or why something happened. The actual location of historic property, complemented by its setting is particularly important in recapturing the sense of historic events and persons. Except in rare cases, the relationship between a property and its historic associations is destroyed if the property is moved." Ibid.*

[6] *"A property's design reflects historic functions and technologies as well as aesthetics. It includes such considerations as the structural system; massing; arrangement of spaces; pattern of fenestration; textures and colors of surface materials; type, amount, and style of ornamental detailing; and arrangement and type of plantings in a designed landscape." Ibid.*

[7] *National Register Bulletin 15, page 45.*

[8] *"The choice and combination of materials reveals the preferences of those who created the property and indicated the availability of particular types of materials and technologies. Indigenous materials are often the focus of regional building traditions and thereby help define an area's sense of time and place." Ibid.*

- Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.[9]
- Feeling is property's expression of the aesthetic or historic sense of a particular period of time.[10]
- Association is the direct link between an important historic event or person and a historic property.[11]

In assessing a property's integrity, the National Register criteria recognize that properties change over time; therefore, it is not necessary for a property to retain all its historic physical features or characteristics. The property must, however, retain the essential physical features that enable it to convey its historic identity.[12]

For properties that are considered significant under National Register criteria A and B, *National Register Bulletin 15* states that a property that is significant for its historic association is eligible if it retains the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or person(s).[13]

In assessing the integrity of properties that are considered significant under National Register criterion C, National Register Bulletin 15 provides that a property important for illustrating a particular architectural style or construction technique must retain most of the physical features that constitute that style or technique.[14]

The primary effects of listing in the National Register on private property owners of historic buildings is the availability of financial and tax incentives.[15] In addition, for projects that receive federal funding, the Section 106 clearance process must be completed. State and local laws and regulations may apply to properties listed in the National Register. For example,

---

[9] *"Workmanship can apply to the property as a whole or to its individual components. It can be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. In can be based on common traditions or innovative period techniques." Ibid.*

[10] *"It results from the presence of physical features that, taken together, convey the property's historic character." Ibid.*

[11] *"A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to the observer. Like feeling, associations require the presence of physical features that convey a property's historic character…Because feeling and association depend on individual perceptions, their retention alone is never sufficient to support eligibility of a property for the National Register." Ibid.*

[12] *National Register Bulletin 15, page 46.*

[13] *Ibid.*

[14] *"A property that has lost some historic materials or details can be eligible if it retains the majority of the features that illustrate its style in terms of the massing, spatial relationships, proportion, patter of windows and doors, texture of materials, and ornamentation. The property is not eligible, however, if it retains some basic features conveying massing but has lost the majority of features that once characterized its style." Ibid.*

[15] *See 36 CFR 60.2(b) (c).*

demolition or inappropriate alteration of National Register eligible or listed properties may be subject to the California Environmental Quality Act (CEQA).

B. STATE LEVEL

The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also carries out the duties as set forth in the Public Resources Code (PRC) and maintains the California Historic Resources Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the state's jurisdictions.

1. California Register of Historical Resources

Created by Assembly Bill 2881, which was signed into law on September 27, 1992, the CRHR is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change."[16] The criteria for eligibility for the California Register are based upon National Register criteria.[17] Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.[18]

The California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register of Historic Places and those formally Determined Eligible for the National Register of Historic Places;
- California Registered Historical Landmarks from No. 770 onward;
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.[19]

Other resources which may be nominated to the California Register include:

- Individual historical resources;
- Historical resources contributing to historic districts;

---

[16] *California Public Resources Code § 5024.1(a).*

[17] *California Public Resources Code § 5024.1(b).*

[18] *California Public Resources Code § 5024.1(d).*

[19] *California Public Resources Code § 5024.1(d).*

- Historical resources identified as significant in historical resources surveys with significance ratings of Category 1 through 5;
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as a historic preservation overlay zone.[20]

To be eligible for listing in the California Register, a historic resource must be significant at the local, state, or national level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Additionally, a historic resource eligible for listing in the California Register must meet one or more of the criteria of significance described above and retain enough of its historic character or appearance to be recognizable as a historic resource and to convey the reasons for its significance. Historical resources that have been rehabilitated or restored may be evaluated for listing.[21]

Integrity under the California Register is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. The resource must also be judged with reference to the particular criteria under which it is proposed for eligibility. It is possible that a historic resource may not retain sufficient integrity to meet criteria for listing in the National Register, but it may still be eligible for listing in the California Register.[22]

2. California Office of Historical Preservation Survey Methodology

The evaluation instructions and classification system prescribed by the California Office of Historic Preservation in its Instructions for Recording Historical Resources provide a three-digit evaluation rating code for use in classifying potential historic resources. The first digit indicates one of the following general evaluation categories for use in conducting cultural resources surveys:

---

[20] *California Public Resources Code § 5024.1(e).*

[21] *California Code of Regulations, California Register of Historical Resources (Title 14, Chapter11.5), Section 4852(c).*

[22] *Ibid.*

1. Listed on the National Register or the California Register;
2. Determined eligible for listing in the National Register or the California Register;
3. Appears eligible for the National Register or the California Register through survey evaluation;
4. Appears eligible for the National Register or the California Register through other evaluation;
5. Recognized as Historically Significant by Local Government;
6. Not eligible for any Listing or Designation; and
7. Not evaluated for the National Register or California Register or needs re-evaluation.

The second digit of the evaluation status code is a letter code indicating whether the resource is separately eligible (S), eligible as part of a district (D), or both (B). The third digit is a number that is used to further specify significance and refine the relationship of the property to the National Register and/or California Register. Under this evaluation system, categories 1 through 4 pertain to various levels of National Register eligibility. The California Register, however, may include surveyed resources with evaluation rating codes through level 5. In addition, properties found ineligible for listing in the National Register, California Register, or for designation under a local ordinance are given an evaluation status code of 6.

C. LOCAL LEVEL

1. City of Burbank

The City of Burbank has a Historic Resource Management Ordinance.[23] The intent of the ordinance is to recognize, preserve, and protect historic resource in the interest of the health, prosperity, social and cultural enrichment, and general welfare of the residents of the City. The purpose of the ordinance is to:

a. Safeguard the heritage of the City by preserving resources that reflect elements of the City's history;
b. Encourage pubic understanding and involvement in the historic, cultural, architectural, archaeological, and social heritage of the City;
c. Promote the private and public use and preservation of historic resources for the education, appreciation and general welfare of the people;
d. Promote the conservation, preservation and enhancement of historic resources;
e. Promote the conservation of energy and natural resources through the preservation and maintenance of historic resources;
f. Discourage the demolition, destruction, alteration, misuse or neglect of Designated Historic Resources which represent an important link to Burbank's past;

[23] *Article 9: Miscellaneous Uses and Standards; Division 6: Historic Preservation Regulations 10-1-925 and 10-1-926.*

g. Provide economic benefits to owners of qualifying historic resources to ensure their continued maintenance and preservation; and
h. To make all information about historic resources and historic preservation accessible and available to the public.

Prior to any resource being approved as a Designated Historic Resource, the City Council shall find that the resource satisfies one or more of the following criteria.

A. The resource is associated with events that have made a significant contribution to the broad patterns of Burbank's or California's history and cultural heritage.

B. The resource is associated with the lives of persons important in the past.

C. The resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

D. The resource has yielded, or may be likely to yield, information important in prehistory or history.

III. EVALUATION

A. HISTORIC CONTEXT

1. Burbank

Burbank is located on land that belonged to the Rancho San Rafael owned by Jose Maria Verdugo, and Rancho Providencia owned by Vincente de la Ossa. Dr. David Burbank, who had come west from Waterville, Maine, in the early 1850s, became a well-established practitioner in the Pueblo de Los Angeles, making enough money to purchase over 9,000 acres of the old ranchos in the late 1860s. Dr. Burbank used the land for raising sheep and became a very successful landowner. As Dr. Burbank's ranch was located along old transportation routes, his homestead slowly became the center for a new settlement. Victor Beaudry, a prosperous silver miner, had purchased land in the hills above Burbank's ranch as a transportation route across the Verdugo Mountains and for its mining potential.

When the Southern Pacific Railroad constructed their route south from San Francisco, Dr. Burbank showed what an astute businessman he was when he offered the Southern Pacific Railroad a right-of-way through his land for one dollar. The first Southern Pacific Railroad train passed through his settlement in 1874. With the railroad providing access to commercial markets, and as a mode of personal transportation, Dr. Burbank's settlement began to grow. A group of speculators purchased much of Dr. Burbank's land in 1886, and started selling individual land parcels. A rapid increase in population resulting from a fare war between the Southern Pacific Railroad and the Atchison Topeka & Santa Fe Railroad in the 1880s became the impetus for the establishment of the City of Burbank in 1887. Burbank would later be incorporated in 1911, the same year the Pacific Electric established a streetcar line to the community connecting it to all of greater Los Angeles.

With an established means of local transportation to downtown Los Angeles and surrounding communities, manufacturing businesses saw the potential for building large factories in Burbank using local manpower. The Burbank Furniture Manufacturing Company was the town's first factory in 1887. Unfortunately, that company did not last too long. It was in 1917 that the Moreland Motor Truck Company established a manufacturing plant, employing hundreds of workers. In 1920, a branch of the Jergens Company, run by Andrew Jergens Jr., constructed a west coast manufacturing operation of their body lotions. It was followed by the Lockheed Aircraft Company establishing a aircraft manufacturing plant in Burbank.

In 1912, land that had once belonged to the Providencia Rancho became an outdoor filming lot for Universal Pictures. Warner Brothers Pictures took over the operations of the First National Pictures and the land they held in Burbank in 1927. Columbia Pictures also bought a large amount of land to create an outdoor filming area in the 1920s.

2. Sunset Canyon/Country Club Drive

At the east end of Olive Avenue, is a wrought metal archway announcing a driver's entrance to Country Club Drive and Sunset Canyon. The archway was constructed at the beginning of Country Club Drive to herald the road leading to the Sunset Canyon Country Club. Sunset Canyon Country Club was constructed in 1922, up the unpaved road winding through Sunset Canyon into the foothills of the Verdugo Mountains west slope, above the City of Burbank. The Sunset Canyon Country Club was

> *being built for a group of wealthy Southern Californians in Sunset Canyon in the hills above Glendale. The Sunset Canyon Country Club will embrace such sports as golf, hiking, swimming, and a number of others for the members and is being built on one of the prettiest sites in the country. This ground has been named the 'little Switzerland of America'. Members will leave their city homes during the summer months and use the homes they have built in those hills, practically all of which are being built out of stone taken from the ground they are built on. [The club] is within thirty-five miles of the heart of Los Angeles, and the trip can be easily made in a day over …Glendale and San Fernando Boulevards.*[24]

Visitors and residents of Burbank started constructing small recreational cabins in the hills lining Sunset Canyon as it rose into the Verdugo Mountains. Over the years the Sunset Canyon Country Club became very popular, and social and sporting events were continually reported in the social pages of the Los Angeles Times.

In early December 1927, a horrific wildfire broke out in the Verdugo Mountain foothills. Fanned by high winds, the fire destroyed more than 90 homes in Sunset Canyon and burned over 7,000 acres of the watershed down to edge of Burbank proper.[25] No sooner had the fire been controlled, than the Chief Los Angeles County Flood Control Engineer and his staff made plans for the construction of check dams in Sunset Canyon to control the flow of water, silt, and debris that could come from off the hills in the event of heavy winter rains.[26]

The Chief Los Angeles County Flood Control Engineer had submitted an exhaustive report to the Los Angeles County Board of Supervisors in September of 1926, detailing the need for 21 projects to supplement flood control projects already in place and underway in the county. These 21 new projects included permanent debris dams and basins to be constructed throughout Los Angeles County to address the substantial danger and cost from seasonal rain fall and the resultant floods. The estimated cost for just the 21 projects was $21 million

---

[24] Los Angeles Times. *Sunset Country Club Not Ready to Open Links.* May 21, 1922.

[25] Los Angeles Times. *Trail of Fire Demon Now Only Blackened Waste.* December 6, 1927.

[26] Los Angeles Times. *Fire Conquered On Every Front.* December 7, 1927.

dollars.[27] While the Sunset Canyon Upper Debris Basin was not a specific item in the list of projects, the effort to control seasonal flooding was a sophisticated battle being waged by highly skilled engineers across Los Angeles County.

It appears that luck was not to play a part in controlling the aftermath of the effects of the Verdugo Hills Fire of 1927, for before Los Angeles County Flood Control could construct a check dam large enough to hold back large amounts of water and debris coming off of the fire ravaged hillsides, Southern California and Burbank were hit with a rainstorm that in twenty minutes dropped over two inches of rain in November of 1928.[28]

> *Residents in [Sunset Canyon] for a time were imperiled but none attempted flight as greater safety was offered in their home along the canyon sides. The roadway in the canyon bed was a raging torrent churned to a frenzied froth by huge boulders, trunks of trees and other debris. So powerful was the rush of water, that it swept into Olive Avenue, principal residential street in the hillside district and leading into the business area of Burbank, and the street became a raging river.*
>
> *The water rushed into near-by homes, flooding in some cases to the window casements. At one residence at the mouth of the canyon, the family was held imprisoned by the flood and was seriously threatened when a telephone pole was plunged through a window, opening a way for mud and water to pour into the house. Many automobiles in Sunset Canyon were washed from garages and several such structures fell. Boulders the size of a large automobile were hurled through the canyon and littered the road after the waters had swept through.*[29]

It was estimated that the flood that poured out of Sunset Canyon was 60% mud and 40% water. Forty thousand cubic yards of debris were deposited in the streets and yards of Burbank.[30] So, in an attempt to avoid a catastrophic event like that of the winter of 1928, a cantilever-arch dam and debris basin were constructed in the upper reaches of Sunset Canyon to control the effects of the seasonal rainfalls. Flood control debris basins and dams play an important part in providing a level of protection to the downstream residents and business against potentially devastating flood and debris flows throughout Los Angeles County.

---

[27] Los Angeles Times. *Flood Control Projects Cited.* September 25, 1926.

[28] Los Angeles Times. *Heavy Storm Nears End.* November 15, 1928.

[29] Los Angeles Times. *Roaring Flood Hits Burbank.* November 15, 1928.

[30] Los Angeles Times. *Fighting the Red Demon of the Hills.* May 29, 1932.

B. HISTORIC RESOURCES IDENTIFIED

A site visit and pedestrian-level inspection of the UDB was performed on October 26, 2011. The UDB consists of an earthen basin formed from a natural drainage of the Verdugo Mountains on the Victor Beaudry land tract. (Photograph 2) The earthen basin is located between steeply rising hillsides that form the walls of the basin. The base of the debris basin is at 1560 feet above sea level with the surrounding hills rising sharply to 1800 feet. A cantilever arch dam spans between the hillsides with its convex side facing the crest of the Verdugo Mountains, to the northeast. (Photograph 3 and 4)

On the north side of the dam, on the hillside just above it, is a small gable roof building used as a utility shed. Historic aerial photographs show that the utility shed dates from before 1952. There are concrete steps that lead down the hillside from the utility shed to the paved spillway below the dam on the canyon floor. On the convex side (downhill side) of the dam is a spillway also constructed of cast and poured concrete situated to control the water coming over the dam. (Photograph 5) The hills on the downhill side of the dam have been clad with gunite (sprayed concrete) to create a sealed channel for large amounts of water and debris. (Photograph 6) The spillway continues down the hill to where it intersects with the UDB access road, and the roadway then becomes the spillway all the way down the canyon until it reaches Sunset Canyon Lower Debris Basin.

The dam is 45 feet tall at the crest and 160 feet wide. The dam wall was constructed between 1929 and 1932, of cast-in-place poured concrete.[31] There are parapet walkways that add an additional 4 feet in height to the walls on each side of the dam lip. The parapet walkways extend from each end of the dam wall for approximately 40 feet, leaving a gap of approximately 80 feet between the parapets to funnel water and light debris over the ogee lip of the top of the dam. While the dam is curved to the east, it is also angled 24 degrees to the west. This allows water and floating debris to easily slip over the top of the dam, while holding back heavier silt, rocks and even boulders that may flow down from the watershed above the debris basin. This is especially true after a forest fire when there is no foliage to hold back the terrain in heavy rainfall.

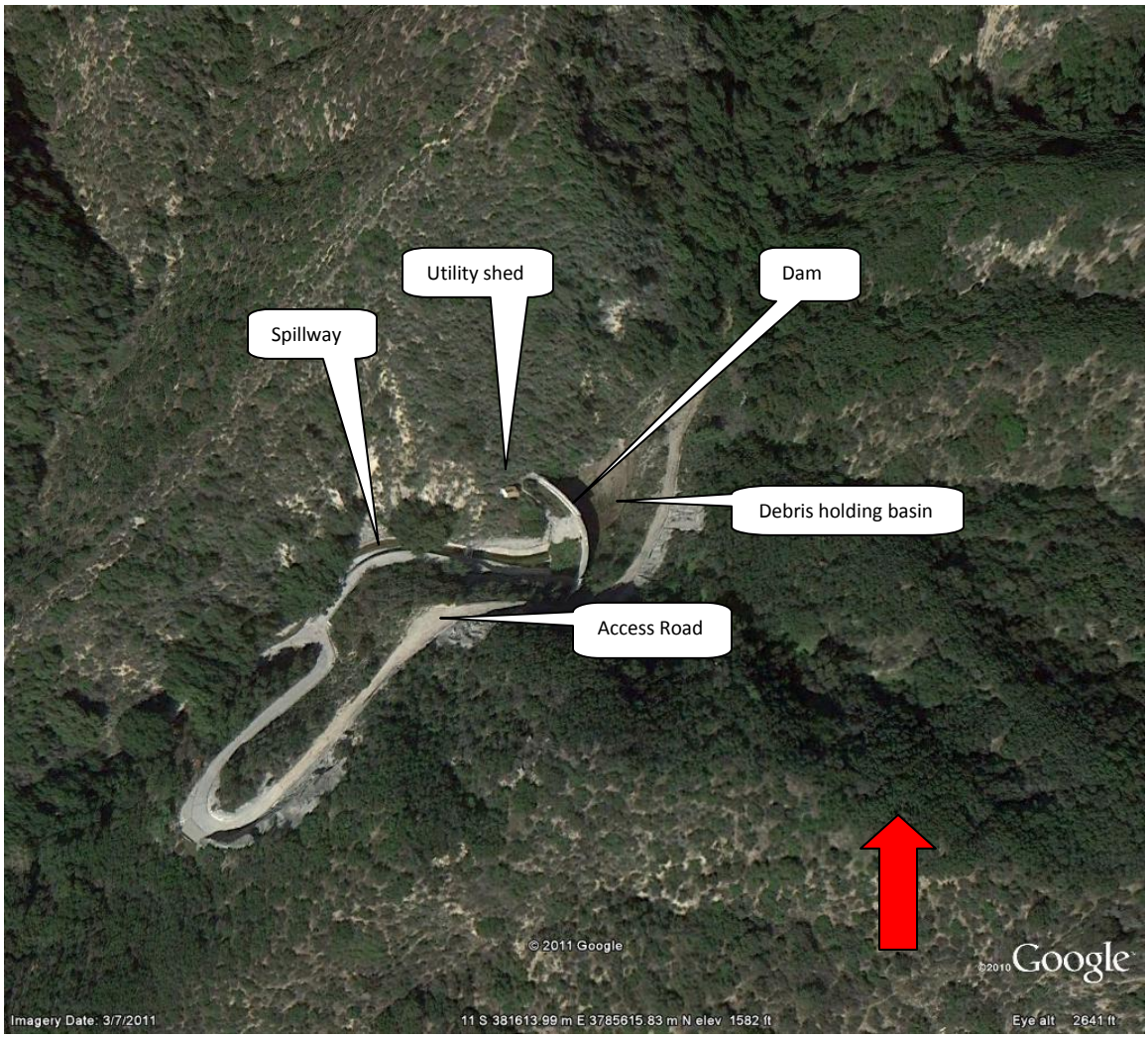
In the original plans, the dam wall had been pierced at 15 feet above the basin floor, and at 25 feet above the basin floor, by 24-inch diameter steel pipes. These openings were installed to allow water to escape as it reaches those heights, keeping larger debris inside the basin. It appears that at some point in time the pipe at the higher point in the dam wall was sealed with concrete. The debris that collects on the uphill side of the dam is excavated by heavy machinery, and hauled out of the canyon at the end of each year's rainy season.

---

[31] *Dates of construction are based upon the original "Plan & Details of the Dam" that show the plans were approved in 1929 and revised in 1932 "to agree with the Dam as constructed." See copy of drawings in Appendix A.*

The access road that circumvents the dam along the south hillside was constructed in 1961. Other than routine maintenance and repairs, the debris basin, dam, and associated features have been relatively unchanged since the UDB was constructed.

The water tanks, steel water supply pipes, and fire hydrants situated within the boundary fence of the UDB are owned, and under the control of the City of Burbank, and are not part of this study.



Photograph 2: Aerial view of the Upper Sunset Canyon Debris Basin dam and access road. Looking north. (Source: Google aerial, 2011.)

Photograph 3: East elevation of the dam from the adjacent service road. The utility shed is visible on the hillside to the north of the dam. View looking west.

Photograph 4: East (uphill) face of the dam. View looking southwest.

Photograph 5: West (downhill) face of the dam. View looking north.

Photograph 6: View of spillway and gunite clad hills, looking northeast.

C. SIGNIFICANCE

An article in the Los Angeles Times, cited earlier in this report, presented 21 projects that the Los Angeles County Flood Control Chief Engineer deemed necessary for the protection and safety of the residents of Los Angeles County in 1926. Of the projects described in the article, eight were debris basins, and five were debris basin dams or a combination of both basin and dam. As Los Angeles County became more populated, it was necessary to devise a system of funneling the seasonal flow of water coming off of the mountains and foothills, and controlling their flow into channels or permanent reservoirs. The article from 1926 is an example of just a few of the projects, and types of control systems, that were being planned by the Los Angeles County Flood Control District to protect its residents.

The UDB was constructed in 1929 by the Los Angeles County Flood Control District. The debris basin and dam were constructed to control the run-off from seasonal rainfall from the Verdugo Mountain hillsides. The height of the dam and depth of the basin were based upon calculations as to what was required to protect the residents and property below the dam in the event of heavy seasonal rainfall following the destruction of the watershed vegetation from a fire in the Verdugo Mountain.

The UDB in Sunset Canyon is just one of many debris basin and dams located across the Verdugo Mountains, San Gabriel Mountains, and Santa Monica Mountains. Although the UDB dam is a bit more sophisticated than some of the earthen dams, or wood timber and stone check dams, located in Los Angeles County, it is not to be considered an example of important dam engineering or a significant concrete structure. Many large concrete masonry dams (constructed primarily to create reservoirs) had been built in California before the UDB dam. Some of these include the Sweetwater Dam in San Diego County, built in 1888; Don Pedro Dam in Tuolumne County, built in 1923; Big Bear Dam, built in 1912; and Lake Arrowhead Dam, built in 1922. Seven of the concrete bridges that still span the Los Angeles River in downtown Los Angeles were constructed before 1928, and the Los Angeles Aqueduct/Owens River Project had been completed in 1913.

In assessing the historical significance of the UDB, federal, state and local significance criteria were applied. The subject property is not currently listed in either the National Register or the California Register, or as a City of Burbank Designated or Eligible Historic Resource.

Under National Register, California Register, or City of Burbank criteria relating to the UDB's association with significant historical events that exemplifying broad patterns of our history, the debris basin and associated features do not appear to qualify as a significant historic resource. Throughout the world, debris basins and dams (masonry, earthen or timber) have been constructed by both private and public entities to control seasonal rain fall, to protect people and property. The UDB is just one of many debris basins that were constructed in Los Angeles County's foothill canyons. There is no evidence that the UDB is eligible for listing under Criteria A/1/A.

Under National Register, California Register, or City of Burbank criteria relating to the UDB's association with persons of historic importance, the debris basin and associated features do not appear to qualify as a significant resource. The plans for the debris basin and dam were prepared by Los Angeles County Flood Control District staff engineers as part of their normal tasks and duties. There is no evidence that the UDB is eligible for listing under Criteria B/2/B.

Under National Register, California Register, or City of Burbank criteria relating to the distinctive characteristics of a type, period, region, or method of construction, the UDB is not significant as it does not embody any innovative engineering design or method of construction, or high artistic design. The debris basin was constructed by excavating a drainage conduit in the Verdugo Mountains, and a dam was constructed to hold heavier debris from spilling over during high rainfall events. The technology used to create the basin and dam were commonplace, as was the use of concrete to hold, channel, divert, and control the water as it came down the foothills. The UDB does not present any technological achievement in the history of water systems locally, regionally or nationally, and is therefore not eligible for listing under Criteria C/3/C.

Based upon a survey of the above-ground historic period resources at the UDB performed in October 2011, the UDB has not yielded, nor does it appear to have the potential to yield, information important to the history of the local area, California or the nation pursuant to Criteria D/4/D.

In summation, the UDB is not eligible for listing in the National Register, the California Register, or as a significant historic resource in the City of Burbank, as it does not meet any of the criteria necessary for listing in the registries.

IV. BIBLIOGRAPHY

A. PUBLICATIONS

California Department of Transportation and JRP Historical Consulting Services. *Water Conveyance Systems in California*. State of California: Sacramento, 2000.

Flinn, Alfred D. et. al. *Waterworks Handbook*. McGraw-Hill Book Company. New York, 1918. (Water Resources Institute archives, California State University San Bernardino.)

Office of State Historic Preservation. California Historic Resources Inventory, Survey Workbook (excerpts). State of California: Sacramento, 1986.

Office of State Historic Preservation. Historic Properties Directory. State of California: Sacramento, 1995.

Parker, Patricia L. *National Register Bulletin 24, "Guidelines for Local Surveys: A Basis for Preservation Planning".* Washington D.C.: U.S. Government Printing Office, 1985.

United States Department of the Interior. *National Register Bulletin 15, "How to Apply the National Register Criteria for Evaluation."* Washington, DC: National Park Service, Interagency Resources Division, rev. 1991.

Walker, Tory R., P.E., and Stephen L. Jamieson, P.E. *Dam Breach Analyses For Flood Control Dams*. GEI Consultants, Inc. Englewood, CO. http://www.trwengineering.com/Publications/dambrch.pdf

B. PUBLIC RECORDS, PRIOR REPORTS, OTHER

Burbank Unified School District. *A History of Burbank.* 1967.
http://www.wesclark.com/burbank/a_history_of_burbank.html

City of Burbank. "Burbank History". http://www.ci.burbank.ca.us

City of Burbank. Municipal Code: Article 9 Miscellaneous Uses and Standards, Division 6 Historic Preservation Regulations. http://www.codepublishing.com/CA/Burbank/html

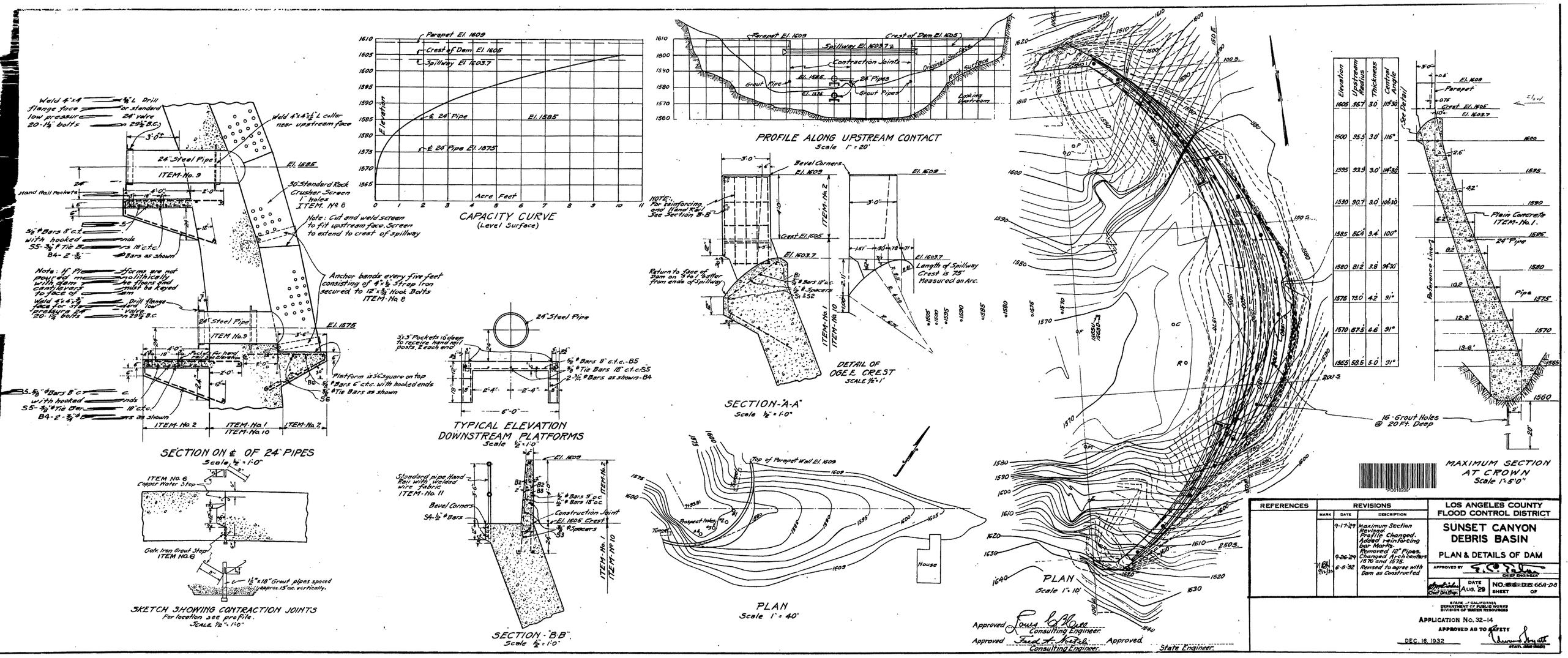
County of Los Angeles Department of Public Works: Selected drawings, plans & details of Sunset Canyon Debris Basin, 1932, 1961, 1962, 1978, 1983. Provided by Water Resources Division, 900 South Fremont Avenue, Alhambra, CA 91803.

Country Club Drive, Burbank Hills, California.
http://wesclark.com/burbank/burbank_country_club_20s_30s.jpg

Los Angeles Times. *Sunset Country Club Not Ready to Open Links*. May 21, 1922.
Flood Control Projects Cited. September 25, 1926.
Trail of Fire Demon Now Only Blackened Waste. December 6, 1927.
Fire Conquered On Every Front. December 7, 1927.
Charred Waste Follows Fire. December 11, 1927.
Curbing Our Mad Rivers. June 14, 1931
Fighting the Red Demon Of The Hills. May 29, 1932.
The Check Dam's Just That. December 4, 1932.

Appendix A.

Sunset Canyon Upper Debris Basin – Construction Drawings 1932, 1961



Elevation	Upstream Radius	Thickness	Central Angle
1605	96.7'	3.0'	115°30'
1600	95.5'	3.0'	116°
1595	93.9'	3.0'	114°30'
1590	90.7'	3.0'	108°30'
1585	86.4'	3.4'	100°
1580	81.2'	3.8'	94°30'
1575	75.0'	4.2'	91°
1570	67.5'	4.6'	91°
1565	58.6'	5.0'	91°

REFERENCES	REVISIONS			LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
	MARK	DATE	DESCRIPTION	SUNSET CANYON DEBRIS BASIN
		9-17-29	Maximum Section Revised. Profile Changed. Added reinforcing bar Marks.	PLAN & DETAILS OF DAM
		9-26-29	Removed 10" Pipes. Changed Arch centers 1570 and 1575.	APPROVED BY R. C. Ryan CHIEF ENGINEER
	1	6-8-32	Revised to agree with Dam as Constructed	Chief Design DATE AUG. 29 NO. ~~56-D2~~ 66A-D8 SHEET OF

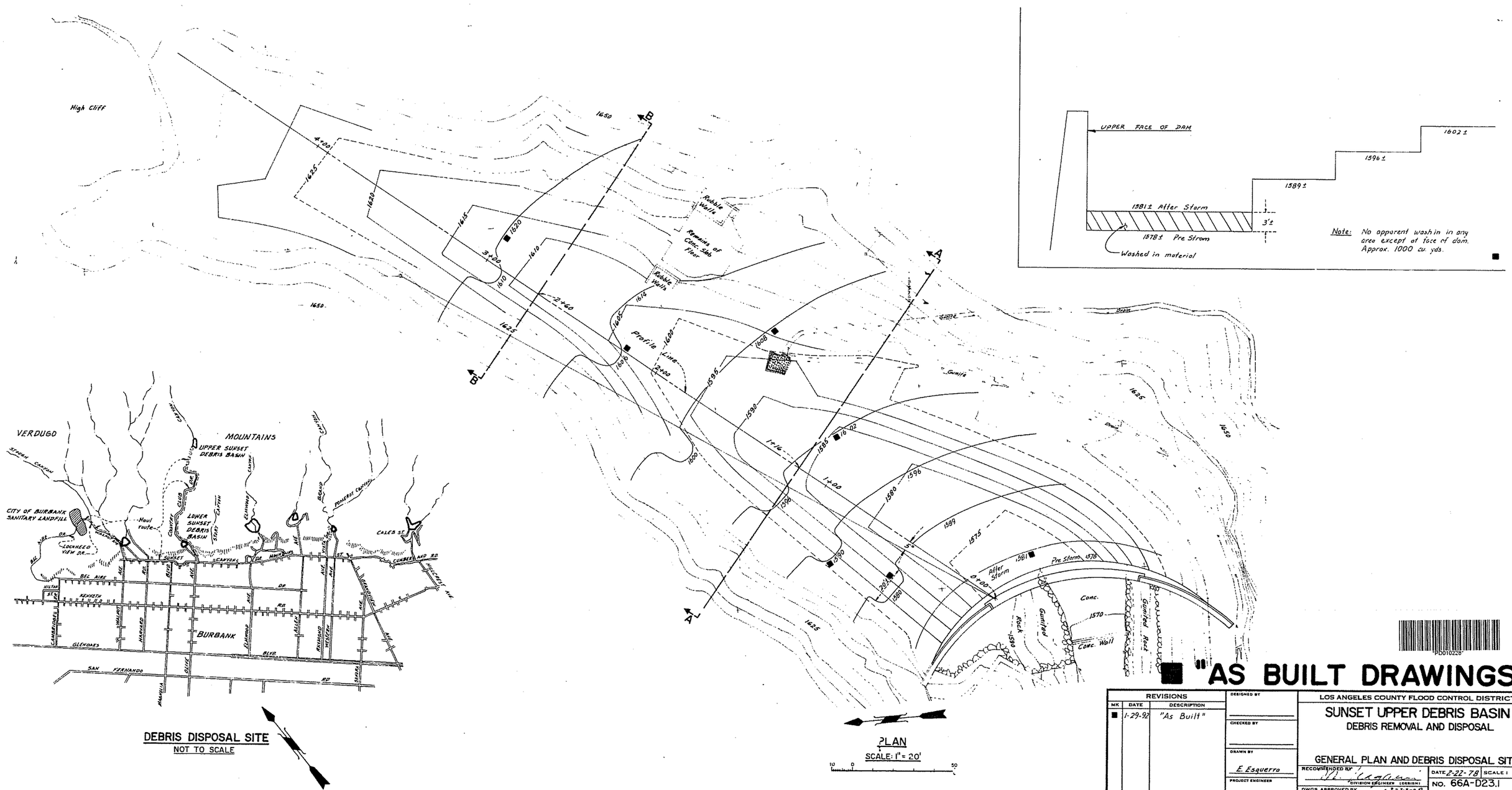
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

APPLICATION No. 32-14

APPROVED AS TO SAFETY

DEC. 16, 1932

STATE ENGINEER



REVISIONS		
MK	DATE	DESCRIPTION
■	1-29-92	"As Built"

DESIGNED BY

CHECKED BY

DRAWN BY E. Esquerra

PROJECT ENGINEER

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

SUNSET UPPER DEBRIS BASIN

DEBRIS REMOVAL AND DISPOSAL

GENERAL PLAN AND DEBRIS DISPOSAL SITE

RECOMMENDED BY — DIVISION ENGINEER (DESIGN)

DATE 2-22-78 SCALE: A.S.

DWGS. APPROVED BY — CHIEF ENGINEER 2-23-78

NO. 66A-D23.1

SHEET 1 OF 2

"AS BUILT" DRAWING

2/76 DIETERICH POST 2102W 003 FILM

Appendix B.

Sunset Canyon Upper Debris Basin DPR Site Forms

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **PRIMARY RECORD**	Primary #: HRI # : Trinomial : NRHP Status Code : 6Z	
Other Listings Review Code	Reviewer	Date

 *Resource Name or #: **Sunset Canyon Upper Debris Basin**

P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ■**Unrestricted** ***a. County:** Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Burbank **Date:** 1966/1994 **T** 1 N; **R** 13 W; NE **¼ of** NW**¼ of Sec 6** **;** S.B. **B.M.**

c. Address: 1500 Country Club Drive City: Burbank Zip:

d. UTM: Zone: 11; 0381550mE/ 3785580mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: 1555 feet

The Sunset Canyon Upper Debris Basin is located at the top of Country Club Drive. The property is bound by a chain-link fence.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

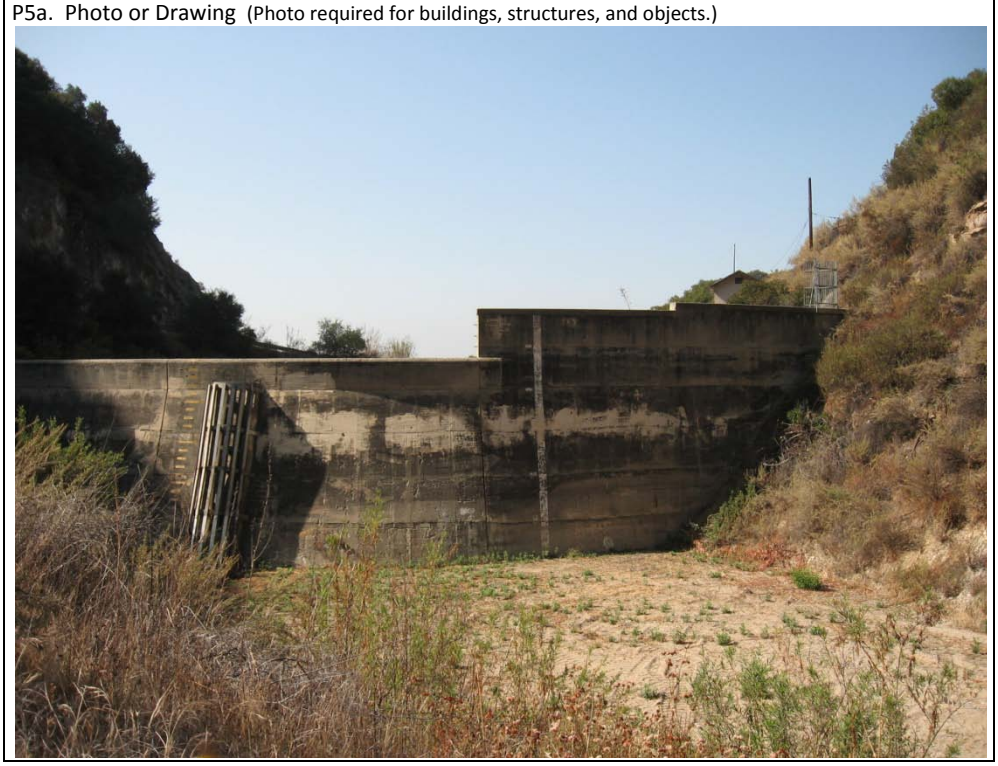
The Sunset Canyon Upper Debris Basin consists of an earthen basin formed from a natural drainage of the Verdugo Mountains on the Victor Beaudry land tract. The earthen basin is located between steeply rising hillsides that form the walls of the basin. The base of the debris basin is at 1560 feet above sea level with the surrounding hills rising sharply to 1800 feet. A cantilever arch dam spans between the hillsides with its convex side facing the crest of the Verdugo Mountains, to the northeast.

On the north side of the dam, on the hillside just above it, is a small gable roof building used as a utility shed. Historic aerial photographs show that the utility shed dates from before 1952. There are concrete steps that lead down the hillside from the utility shed to the paved spillway below the dam on the canyon floor. On the convex side (downhill side) of the dam is a spillway also constructed of cast and poured concrete situated to control the water coming over the dam. (See Continuation Sheet for additional text.)

***P3b. Resource Attributes:** (List attributes and codes) HP-39 (Other: Debris basin and associated features); HP-21 (Dam)

***P4. Resources Present:** ☐Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #) View looking west, October 26, 2011.

***P6. Date Constructed/Age and Sources:** ■Historic ☐Prehistoric ☐Both 1929; County of Los Angeles Department of Public Works.

***P7. Owner and Address:** Los Angeles County Flood Control District

***P8. Recorded by:**
Pamela Daly, M.S.H.P.
Daly & Associates
4486 University Avenue
Riverside, CA 92501

***P9. Date Recorded:** November 13, 2011.

***P10. Survey Type:** (Describe) Intensive (CEQA)

***P11. Report Citation:** Daly, Pamela. *Historic Resorce Evaluation Report of Sunset Canyon Upper Debris Basin.* November, 2011.

***Attachments:** ☐NONE ■Location Map ☐Sketch Map ■Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** : 6Z

***Resource Name or #:** Sunset Canyon Upper Debris Basin

B1. Historic Name: Sunset Canyon Debris Basin
B2. Common Name: Upper Sunset Canyon Debris Basin
B3. Original Use: Debris basin, dam, and spillway
B4. Present Use: Debris basin, dam, and spillway
***B5. Architectural Style:** N/A
***B6. Construction History:** (Construction date, alterations, and date of alterations)

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**
***B8. Related Features:** None

B9a. Architect: Los Angeles County Flood Control District
b. Builder: Unknown
***B10. Significance: Theme:** Flood Control
Area: Los Angeles County
Period of Significance: NA
Property Type: Debris basin
Applicable Criteria: NR/CR
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The UDB in Sunset Canyon is just one of many debris basin and dams located across the Verdugo Mountains, San Gabriel Mountains, and Santa Monica Mountains. Although the UDB dam is a bit more sophisticated than some of the earthen dams, or wood timber and stone check dams, located in Los Angeles County, it is not to be considered an example of important dam engineering or a significant concrete structure. Many large concrete masonry dams (constructed primarily to create reservoirs) had been built in California before the UDB dam. Some of these include the Sweetwater Dam in San Diego County, built in 1888; Don Pedro Dam in Tuolumne County, built in 1923; Big Bear Dam, built in 1912; and Lake Arrowhead Dam, built in 1922. Seven of the concrete bridges that still span the Los Angeles River in downtown Los Angeles were constructed before 1928, and the Los Angeles Aqueduct/Owens River Project had been completed in 1913.

In assessing the historical significance of the UDB, federal, state and local significance criteria were applied. The subject property is not currently listed in either the National Register or the California Register, or as a City of Burbank Designated or Eligible Historic Resource.

Under National Register, California Register, or City of Burbank criteria relating to the UDB's association with significant historical events that exemplifying broad patterns of our history, the debris basin and associated features do not appear to qualify as a significant historic resource. Throughout the world, debris basins and dams (masonry, earthen or timber) have been constructed by both private and public entities to control seasonal rain fall, to protect people and property. The UDB is just one of many debris basins that were constructed in Los Angeles County's foothill canyons. There is no evidence that the UDB is eligible for listing under Criteria A/1/A.

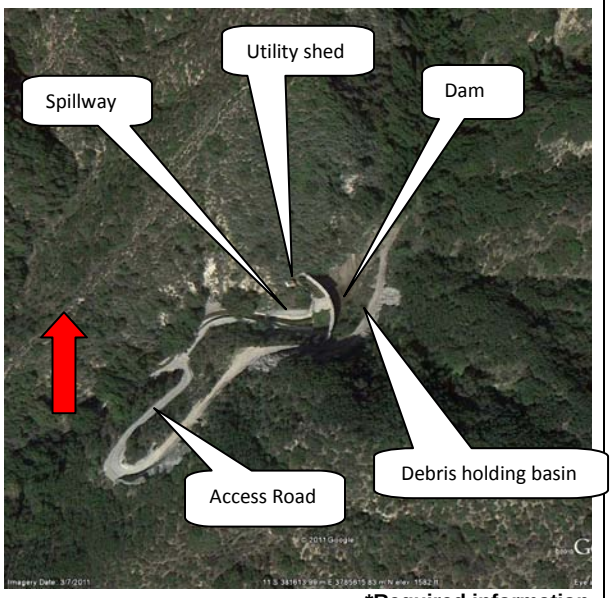
(See continuation sheet for additional text.)

B11. Additional Resource Attributes: (List attributes and codes) None.
***B12. References:**
Original drawings from the Los Angeles County Flood Control District, 1932.

B13. Remarks:

***B14. Evaluator:** Pamela Daly, M.S.H.P.

***Date of Evaluation:** November 13, 2011.



(This space reserved for official comments.)

*Recorded by: Pamela Daly, M.S.H.P. *Date: November 13, 2011 ■Continuation ☐ Update

P3a.: Description:

The hills on the downhill side of the dam have been clad with gunite (sprayed concrete) to create a sealed channel for large amounts of water and debris. The spillway continues down the hill to where it intersects with the UDB access road, and the roadway then becomes the spillway all the way down the canyon until it reaches Sunset Canyon Lower Debris Basin.

The dam is 45 feet tall at the crest and 160 feet wide. The dam wall was constructed between 1929 and 1932, of cast-in-place poured concrete. There are parapet walkways that add an additional 4 feet in height to the walls on each side of the dam lip. The parapet walkways extend from each end of the dam wall for approximately 40 feet, leaving a gap of approximately 80 feet between the parapets to funnel water and light debris over the ogee lip of the top of the dam. While the dam is curved to the east, it is also angled 24 degrees to the west. This allows water and floating debris to easily slip over the top of the dam, while holding back heavier silt, rocks and even boulders that may flow down from the watershed above the debris basin. This is especially true after a forest fire when there is no foliage to hold back the terrain in heavy rainfall.

In the original plans, the dam wall had been pierced at 15 feet above the basin floor, and at 25 feet above the basin floor, by 24-inch diameter steel pipes. These openings were installed to allow water to escape as it reaches those heights, keeping larger debris inside the basin. It appears that at some point in time the pipe at the higher point in the dam wall was sealed with concrete. The debris that collects on the uphill side of the dam is excavated by heavy machinery, and hauled out of the canyon at the end of each year's rainy season.

The access road that circumvents the dam along the south hillside was constructed in 1961. Other than routine maintenance and repairs, the debris basin, dam, and associated features have been relatively unchanged since the UDB was constructed.

The water tanks, steel water supply pipes, and fire hydrants situated within the boundary fence of the UDB are owned, and under the control of the City of Burbank, and are not part of this study.

B.10: Significance:

Under National Register, California Register, or City of Burbank criteria relating to the UDB's association with persons of historic importance, the debris basin and associated features do not appear to qualify as a significant resource. The plans for the debris basin and dam were prepared by Los Angeles County Flood Control District staff engineers as part of their normal tasks and duties. There is no evidence that the UDB is eligible for listing under Criteria B/2/B.

Under National Register, California Register, or City of Burbank criteria relating to the distinctive characteristics of a type, period, region, or method of construction, the UDB is not significant as it does not embody any innovative engineering design or method of construction, or high artistic design. The debris basin was constructed by excavating a drainage conduit in the Verdugo Mountains, and a dam was constructed to hold heavier debris from spilling over during high rainfall events. The technology used to create the basin and dam were commonplace, as was the use of concrete to hold, channel, divert, and control the water as it came down the foothills. The UDB does not present any technological achievement in the history of water systems locally, regionally or nationally, and is therefore not eligible for listing under Criteria C/3/C.

Based upon a survey of the above-ground historic period resources at the UDB performed in October 2011, the UDB has not yielded, nor does it appear to have the potential to yield, information important to the history of the local area, California or the nation pursuant to Criteria D/4/D.

In summation, the UDB is not eligible for listing in the National Register, the California Register, or as a significant historic resource in the City of Burbank, as it does not meet any of the criteria necessary for listing in the registries.

*Recorded by: Pamela Daly, M.S.H.P. *Date: November 13, 2011 ■Continuation ☐ Update

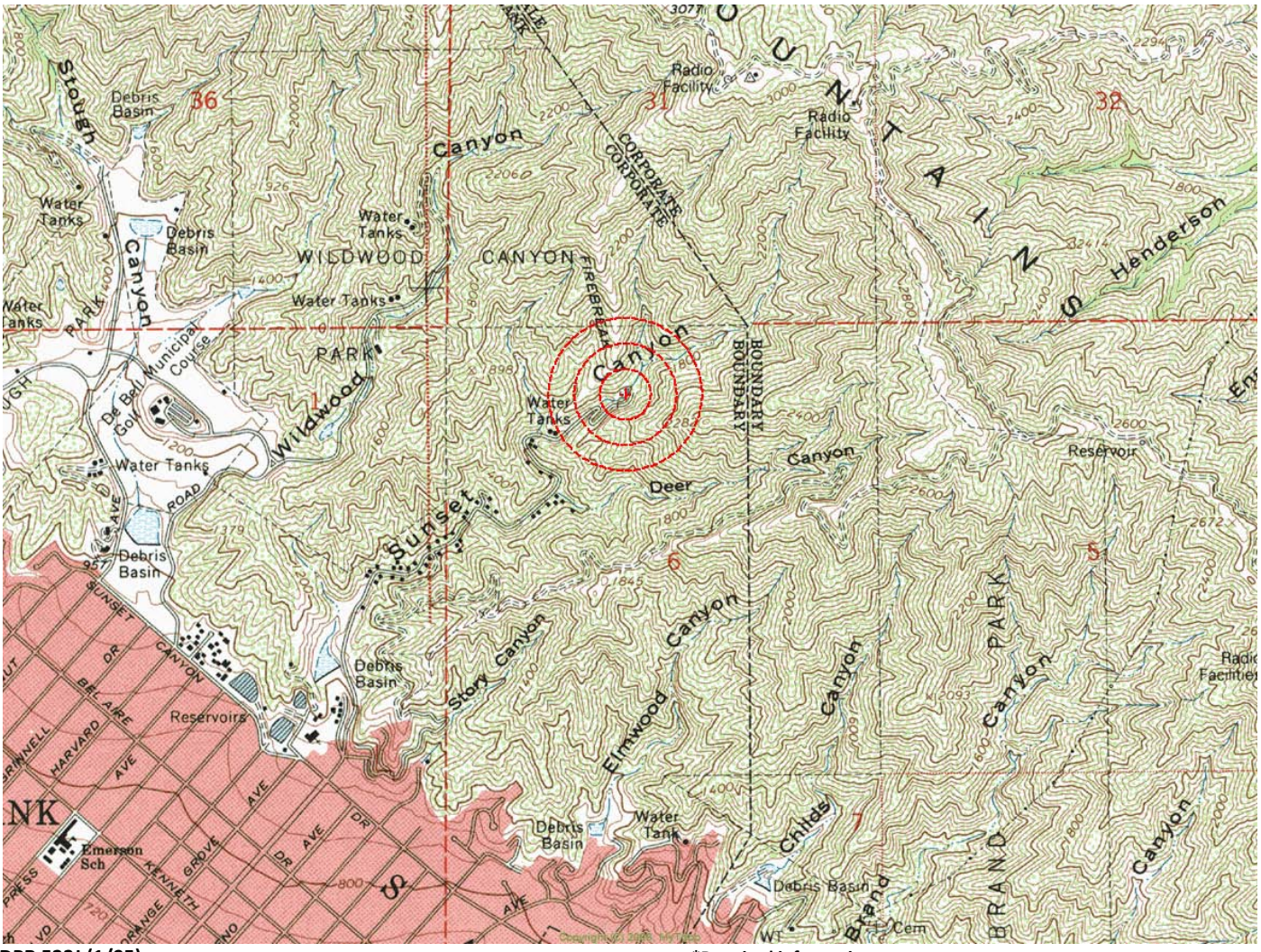
West face (downhill side) of the cantilever arch dam. View looking east.

Sunset Canyon Upper Debris Basin dam: east elevation– looking northwest.
Utility shed for the dam is on the north slope.

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary # HRI# Trinomial

Page 5 **of** 5 ***Resource Name or #: Sunset Canyon Upper Debris Basin**

***Map Name:** Burbank ***Scale:** 1:24,000 ***Date of Map:** 1966/1994



DPR 523J (1/95) ***Required information**

Submit

Authorization ID: LAR9048
Contact ID: BON TERRA
Expiration Date: 12/10/2013

FS-2700-32 (10/09)
OMB No. 0596-0082

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

PERMIT FOR ARCHAEOLOGICAL INVESTIGATIONS

Authority:
The Antiquities Act of 1906, 16 U.S.C. 431-433
The Organic Act of 1897, 16 U.S.C. 551

1. Holder **BON TERRA CONSULTING**	**2. Date of corresponding application** 11/14/2012
3. Address 2 Executive Circle, Suite 175 Irvine, CA 92614	**4. Telephone numbers** 714-444-9199 949-677-2393 (cell#) **5. Email addresses** pmaxon@bonterraconsulting.com
6. Name of authorized officer Michael J. McIntyre, District Ranger Telephone numbers 626-574-1613 x275 (Darrel Vance) Email addresses Dvance@fs.fed.us	**7. Name of principal investigators** Patrick Maxon Telephone numbers 949-677-2393 Email addresses pmaxon@bonterraconsulting.com
8. Name of field directors authorized to carry out field projects Pamela Daly Patrick Maxon Albert Knight Dave Smith	**Telephone numbers** Maxon:714-444-9199 Knight:818-426-4730 Smith:949-922-9952 Daly:909-649-5149 **Email addresses** pmaxon@bonterraconsulting.com ahunknight@msn.com ehcaddis@sbcglobal.net daly.rvrsde@sbcglobal.net

9. Activities authorized

- Consulting: Project-specific
- Non-ground-disturbing activities (such as surveys)

10. Description of National Forest System lands authorized for use (hereinafter referred to as "the permit area")

83 acres along the Santa Anita Wash by existing facilities (Santa Anita Dam, Santa Anita Debris Basin, Santa Anita Head works) operated and maintained by the Los Angeles County Flood Control District. See attached map

11. Permit term

From December 26, 2012 To December 10, 2013

12. Name and address of the curatorial facility in which collections, records, data, photographs, and other documents resulting from activities conducted under this permit shall be deposited for permanent preservation

on behalf of the United States Government.

Angeles National Forest Attn: Darrel Vance 701 N. Santa Anita Ave. Arcadia, CA 91006

TERMS AND CONDITIONS

I. GENERAL TERMS

A. AUTHORITY. This permit is issued pursuant to The Organic Act of 1897, 16 U.S.C. 551 , 36 CFR Part 251, Subpart B, 36 CFR Part 296, the Uniform Rules and Regulations of the Antiquities Act of 1906, 43 CFR Part 3, and applicable Forest Service policies and procedures and is subject to their provisions.

B. AUTHORIZED OFFICER. The authorized officer for this permit is the Forest Supervisor or a subordinate officer with delegated authority.

C. ANNUAL REVIEW. If this permit is issued for more than one year, it shall be reviewed annually by the authorized officer.

D. RENEWAL AND EXTENSION. This permit is not renewable. The holder may request an extension of this permit for a limited, specified period to complete activities authorized under this permit. Requests for an extension must be submitted in writing at least one month before expiration of this permit.

E. AMENDMENT. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms that may be required by law, regulation, the applicable land management plan, or projects and activities implementing a land management plan pursuant to 36 CFR Part 215. Any amendments to individuals named in or activities authorized by this permit that are needed by the holder must be approved by the authorized officer in writing.

F. COMPLIANCE WITH LAWS, REGULATIONS, AND OTHER LEGAL REQUIREMENTS. In exercising the privileges granted by this permit, the holder shall comply with all present and future federal laws and regulations and all present and future state, county, and municipal laws, regulations, and other legal requirements that apply to the permit area, to the extent they do not conflict with federal law, regulations, or policy. The Forest Service assumes no responsibility for enforcing laws, regulations, and other legal requirements that fall under the jurisdiction of other governmental entities.

G. NON-EXCLUSIVE USE. The use and occupancy authorized by this permit are not exclusive. The Forest Service reserves the right of access to the permit area, including a continuing right of physical entry to the permit area for inspection, monitoring, or any other purpose consistent with any right or obligation of the United States under any law or regulation. The holder shall allow the authorized officer or the authorized officer's representative full access to the permit area at any time the holder is in the field for purposes of examining the permit area and any recovered materials and related records. The Forest Service reserves the right to allow others to use the permit area in any way that is not inconsistent with the holder's rights and privileges under this permit, after consultation with all parties involved.

H. ASSIGNABILITY. This permit is not assignable or transferable.

II. OPERATIONS

A. OPERATING PLAN. The application corresponding to this permit is incorporated as the operating plan for this permit and is attached as Appendix A. The authorized officer may supplement the information contained in the application as appropriate or necessary.

B. REQUIRED PERMITS. The holder shall obtain all other permits required for conducting the activities authorized by this permit.

C. QUALIFIED INDIVIDUALS. Archaeological project design, literature review, development of regional historical contexts, site evaluation, conservation and protection measures, and recommendations for subsequent investigations shall be developed with direct involvement of an individual who meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation. Fieldwork shall be overseen by an individual who meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation.

D. CONDITION OF OPERATIONS. The holder shall maintain the authorized improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this permit. Standards are subject to periodic change by the authorized officer.

E. PROHIBITION ON USE OF MECHANIZED EQUIPMENT IN WILDERNESS AREAS. The holder shall not use mechanized equipment in wilderness areas and shall not use mechanized equipment in proposed or potential wilderness areas without prior written approval from the authorized officer.

F. PROHIBITION ON FLINT KNAPPING AND LITHIC REPLICATION EXPERIMENTS. The holder shall not conduct any flint knapping or lithic replication experiments at any archaeological site, aboriginal quarry source, or non-archaeological site that might be mistaken for an archaeological site as a result of such experiments.

G. PROHIBITION ON IMPEDING OR INTERFERING WITH OTHER USES. The holder shall perform the activities authorized by this permit so as not to impede or interfere with administrative or other authorized uses of National Forest System lands.

H. RESTRICTION ON MOTOR VEHICLE USE. The holder shall restrict motor vehicle use to designated roads, trails, and areas, unless specifically provided otherwise in the operating plan.

I. MINIMIZING GROUND DISTURBANCE. The holder shall keep ground disturbance to a minimum consistent with the nature and purpose of the authorized fieldwork.

J. RESOURCE PROTECTION. The holder shall conduct all activities so as to prevent or minimize scarring, erosion, littering, and pollution of National Forest System lands, water pollution, and damage to watersheds. In addition, the holder shall take precautions at all times to prevent wildfire. The holder may not burn debris without prior written approval from the authorized officer.

K. PREVENTION OF INJURY. The holder shall take precautions to protect livestock, wildlife, the public, and other users of National Forest System lands from accidental injury at any excavation site.

L. DESTRUCTION AND REMOVAL OF TREES. The holder shall not destroy or remove any trees on National Forest System lands without prior written approval from the authorized officer.

M. RESOURCE MANAGEMENT FACILITIES. The holder shall not disturb resource management facilities, such as fences, reservoirs, and other improvements, within the permit area without prior written approval from the authorized officer. Where disturbance of a resource management facility is necessary, the holder shall return it to its prior location and condition.

N. BACKFILLING. The holder shall backfill all subsurface test and excavation sites as soon as possible after recording the results and shall restore subsurface test and excavation sites as closely as possible to their original contour.

O. REMOVAL OF STAKES AND FLAGGING. The holder shall remove temporary stakes and flagging installed by the holder upon completion of fieldwork.

P. SITE RESTORATION. The holder shall restore all camp and work areas to their original condition before vacating the permit area. Refuse shall be carried out and deposited in disposal areas approved by the authorized officer.

Q. TITLE TO ARTIFACTS AND ASSOCIATED DOCUMENTATION. Archaeological and historical artifacts excavated or removed from National Forest System lands and any associated documentation shall remain the property of the United States.

R. NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION (NAGPRA). In accordance with 25 U.S.C. 3002 (d) and 43 CFR 10.4, if the holder inadvertently discovers human remains, funerary objects, sacred objects, or objects of cultural patrimony on National Forest System lands, the holder shall immediately cease work in the area of the discovery and shall make a reasonable effort to protect and secure the items. The holder shall immediately notify the authorized officer by telephone of the discovery and shall follow up with written confirmation of the discovery. The activity that resulted in the inadvertent discovery may not resume until 30 days after the authorized officer certifies receipt of the written confirmation, if resumption of the activity is otherwise lawful, or at any time if a binding written agreement has been executed between the Forest Service and the affiliated Indian tribes that adopts a recovery plan for the human remains and objects.

S. ADDITIONAL REQUIREMENTS. Prior to beginning any fieldwork under the authority of this permit, the holder shall contact the authorized officer responsible for administering the lands involved to obtain further instructions regarding current land and resource conditions.

III. REPORTING REQUIREMENTS

A. PRELIMINARY REPORT. The holder shall submit a preliminary report to the authorized officer within 30 days of completion of the first stage of fieldwork. The preliminary report shall enumerate what was done during the first stage of fieldwork, how it was done, by whom, where, and with what results, including maps, global positioning satellite data, an approved site form for each newly recorded archaeological site, and the holder's professional recommendations regarding resource significance, as appropriate. Depending on the scope, duration, and nature of the work, the authorized officer may require progress reports periodically for the duration of the authorized activities.

B. DRAFT FINAL REPORT. Within 60 days of completion of fieldwork, the holder shall submit an edited draft final report to the authorized officer for review to ensure conformance with applicable laws, regulations, policies, and procedures and the terms and conditions of this permit.

C. FINAL REPORT. The holder shall submit the original final report and at least two copies to the authorized officer within 90 days after completion of fieldwork.

D. BLANKET SURVEY CONSULTING PERMIT. If this is a multi-year survey consulting permit, at the end of each calendar year, the holder shall submit to the authorized officer a report enumerating all activities conducted under this permit.

E. DEPOSIT OF MATERIALS AND DOCUMENTS WITH A CURATORIAL FACILITY. Within 90 days of the date the final report is submitted to the authorized officer, the holder shall deposit all artifacts, samples, and collections and original or clear copies of all records, data, photographs, and other documents resulting from activities authorized by this permit with the curatorial facility named in block 12.

F. CATALOGUE AND EVALUATION OF DEPOSITED MATERIALS. The holder shall provide the authorized officer with a catalogue and evaluation of all materials deposited with the curatorial facility named in block 12, including the facility's accession or catalogue numbers, and confirmation, signed by an authorized curatorial facility official, that artifacts, samples, and collections were deposited with the approved curatorial facility. The confirmation shall include the date the materials were deposited and the type, number, and condition of the deposited materials.

G. CONFIDENTIALITY OF SENSITIVE RESOURCES. The holder agrees to keep the specific location of sensitive resources confidential. Sensitive resources include but are not limited to threatened, endangered, and rare species; archaeological sites; caves; fossil sites; minerals; commercially valuable resources; and traditional cultural properties.

H. CONFIDENTIALITY OF INFORMATION IDENTIFYING ARCHAEOLOGICAL SITES. Without the authorized officer's prior written approval, the holder shall not publish any locational or other information identifying archaeological sites that could compromise their protection and management by the federal government.

I. IDENTIFICATION OF FOREST SERVICE PERMIT. Any published article, paper, or book containing results of work conducted under this permit shall specify that the work was performed in the Angeles National Forest under a Forest Service permit.

J. SUBMISSION OF WRITTEN MATERIALS. The holder shall submit a copy of any published or unpublished report, article, paper, or book resulting from the authorized activities (other than reports required by clauses III.A, B, and C) to the authorized officer and the appropriate official of the curatorial facility named in block 12. The holder shall submit tabular and spatial data to the authorized officer in the format specified in Appendix A.

IV. RIGHTS AND LIABILITIES

A. LEGAL EFFECT OF THE PERMIT. This permit, which is revocable and terminable, is not a contract or a lease, but rather a federal license. The benefits and requirements conferred by this authorization are reviewable solely under the procedures set forth in 36 CFR Part 251, Subpart C, and 5 U.S.C. 704. This permit does not constitute a contract for purposes of the Contract Disputes Act, 41 U.S.C. 601. The permit is not real property, does not convey any interest in real property, and may not be used as collateral for a loan.

B. VALID OUTSTANDING RIGHTS. This permit is subject to all valid outstanding rights. Valid outstanding rights include those derived from mining and mineral leasing laws of the United States. The United States is not liable to the holder for the exercise of any such right.

C. ABSENCE OF THIRD-PARTY BENEFICIARY RIGHTS. The signatories of this permit do not intend to confer any rights on any third party as a beneficiary under this permit.

D. DAMAGE TO UNITED STATES PROPERTY. The holder has an affirmative duty to protect from damage the land, property, and other interests of the United States. Damage includes but is not limited to fire suppression costs, and all costs and damages associated with or resulting from the release or threatened release of a hazardous material occurring during or as a result of activities of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees on, or related to, the lands, property, and other interests covered by this permit. For purposes of clause IV.F, "hazardous material" shall mean any hazardous substance, pollutant, contaminant, hazardous waste, oil, and/or petroleum product, as those terms are defined under any federal, state, or local laws or regulations.

E. INDEMNIFICATION. The holder shall indemnify, defend, and hold harmless the United States for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the holder in connection with the use and occupancy authorized by this permit. This indemnification and hold harmless provision includes but is not limited to acts and omissions of the holder or the holder's family, guests, invitees, heirs, assignees, agents, employees, contractors, or lessees in connection with the use and occupancy authorized by this permit which result in (1) violations of any laws and regulations which are now or which may become applicable; (2) judgments, claims, demands, penalties, or

THIS PERMIT IS ACCEPTED SUBJECT TO ALL ITS TERMS AND CONDITIONS.

BEFORE ANY PERMIT IS ISSUED TO AN ENTITY, DOCUMENTATION MUST BE PROVIDED TO THE AUTHORIZED OFFICER OF THE AUTHORITY OF THE SIGNATORY FOR THE ENTITY TO BIND IT TO THE TERMS AND CONDITIONS OF THE PERMIT.

ACCEPTED:

Patrick Maxon, Director-CR, Bon Terra Cons. 12/19/12

HOLDER NAME, PRECEDED BY NAME AND TITLE OF PERSON SIGNING ON BEHALF OF HOLDER, IF HOLDER IS AN ENTITY | SIGNATURE | DATE

APPROVED:

Robert J GARCIA 12/28/2012

NAME AND TITLE OF AUTHORIZED OFFICER | SIGNATURE | DATE

FOR MIKE McINTYRE

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond, to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and, where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

Submit

Use Code: 411
Authorization ID: Bon
Contact ID: ~~562~~ LMC 9048

FS-2700-30 (Rev 05/06)
OMB No. 0596-0082

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

APPLICATION FOR PERMIT FOR ARCHAEOLOGICAL INVESTIGATIONS

<USER NOTES FOR AUTHORITY>
<Select all authorities that apply. Delete any that do not apply.>

Authority:

Archaeological Resources Protection Act of 1979,
16 U.S.C. 470aa-mm

Antiquities Act of 1906,
16 U.S.C. 431-433

Organic Act of 1897
16 U.S.C. 551

Instructions: Complete and return two copies of this application form and required attachments to the appropriate Forest Service administrative unit. All information requested must be completed before the application will be considered. Use separate pages if more space is needed to complete a section.

1. Name of applicant (individual, institution, corporation, partnership, or other entity)
Patrick Maxon, RPA
BonTerra Consulting

2. Mailing address
2 Executive Circle, Suite 175
Irvine, CA 92614

3. Telephone numbers
714-444-9199 (office)
949-677-2393 (mobile)

4. Email addresses
pmaxon@bonterraconsulting.com

5. Nature of archaeological work proposed

- [x] Survey and recordation
- [ ] Limited testing (shovel tests, scrapes, probes)
- [ ] Formal testing and/or surface collection (project-specific)
- [ ] Excavation and/or removal (project-specific)
- [ ] Conservation and protection, e.g., ruin stabilization, restoration, rock art conservation, ARPA damage assessments (project-specific)

6. Location of proposed work (attach additional sheets)

The proposed Project is located in Los Angeles County with the majority of the project site in the Angeles National Forest within the San Gabriel Mountains. Portions are within the City of Monrovia.

Project area is shown on the USGS 7.5 minute Mount Wilson, CA quadrangle (1995); Township 1 North, Range 11 West. A copy of the attached map showing the specific project area depicts the proposed survey area.

The Forest Service administrative unit is the Angeles National Forest Los Angeles River Ranger District.

7. Duration of proposed work

Duration of entire project: From December 10, 2012 To December 10, 2013

Duration of fieldwork: 1 day of field work From 12/10/12 To 12/10/13

8. Principal investigator
Patrick Maxon

Principal investigator contact information
949-677-2393 (mobile)
Email addresses:
pmaxon@bonterraconsulting.com

9. Field directors	**Field director contact information**
Patrick Maxon (archaeology) Albert Knight (archaeology) Dave Smith (archaeology) Pamela Daly (history)	**Maxon:** 714-444-9199 (office) 949-677-2393 (mobile) pmaxon@bonterraconsulting.com **Knight** 818-426-4730 (mobile) ahunknight@msn.com **Smith** 949-922-9952 (mobile) ehcaddis@sbcglobal.net **Daly** 909-649-5149 (mobile) daly.rvrsde@sbcglobal.net
10. Permit holder Patrick Maxon, RPA Name of individual who will be responsible for fulfilling the terms and conditions of the permit or who has authority to bind the entity applying for the permit to its terms and conditions.	**Permit holder contact information** Telephone numbers: 714-444-9199 (office) 949-677-2393 (mobile) Email addresses: pmaxon@bonterraconsulting.com

11. The applicant must attach the following to the application form:

a. A description of the purpose, nature, and extent of the work proposed, including how and why it is proposed to be conducted (include research design, methods, and curation).

b. A summary of support capabilities, including the location and a description of necessary facilities and equipment, the personnel to be involved in the proposed work, and, in the case of an applicant that is an entity, its organizational structure and staffing.

c. A summary of the applicant's experience in completing the kind of work proposed, including similar projects and government contracts and federal permits that were previously held, that are currently in force, with their effective dates, and that are pending or planned, by agency and region or state, reports or publications resulting from similar work, and any other pertinent experience.

d. For each individual named in blocks 8 and 9, a resume including education, training, and experience in the kind of work proposed and in the role proposed.

e. A written certification, signed by an authorized official of the proposed curatorial facility, attesting to the facility's capability and willingness to accept any collections, records, data, photographs, and other documents generated during the proposed permit term and to assume permanent curatorial responsibility for those materials on behalf of the United States Government pursuant to 36 CFR Part 79. Archaeological and historical artifacts excavated or removed from National Forest System lands and their associated documentation shall remain the property of the United States. Custody of any Native American human remains or cultural items subject to the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3001-3013, that are removed from National Forest System lands shall be determined in accordance with NAGPRA and its implementing regulations at 43 CFR Part 10.

12. Proposed publications for results of work conducted under the permit

Section 106 compliant Cultural Resources Assessment report using Archaeological Resource Management Reports (ARMR) guidelines.

13. Signature of individual named in block 10	**14. Date signed**
Patrick Maxon	11/14/12

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call (800) 975-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

ARPA Permit Attachment

a. The Santa Anita Stormwater Flood Management and Seismic Strengthening Project (Project) will modify four existing facilities along Santa Anita Wash. These facilities are the Santa Anita Dam (Dam), the Santa Anita Debris Basin (Debris Basin), and the Santa Anita Headworks (Headworks). These facilities, which are operated and maintained by the Los Angeles County Flood Control District (District), serve to control and conserve the floodwaters of the Santa Anita Canyon watershed. This Project will improve District facilities to better manage stormwater runoff from the Santa Anita Canyon watershed and achieve the following goals: (1) reduce flood damage to the downstream communities, (2) increase recharge of the local groundwater basin, and (3) improve public safety by remediating seismic safety issues at the Dam and the Debris Basin.

   The purpose of the cultural resources study is to ensure that the proposed project does not adversely impact significant cultural resources. The study will consist of (1) a review of the records search completed for the 2007 Environmental Impact Report (EIR), and an updated records search through the California Historical Resources Information System (CHRIS) at the South Central Coastal Information Center, California State University, Fullerton; (2) Native American Heritage Commission (NAHC) and Native American scoping; (3) a one-day pedestrian survey of the Area of Potential Effects (APE) by Patrick Maxon, Albert Knight and/or Dave Smith and by historian Pamela Daly; and (4) completion of a technical cultural resources report (following Archaeological Resource Management Report [ARMR] guidelines) that summarizes the findings of the study and offers management recommendations.

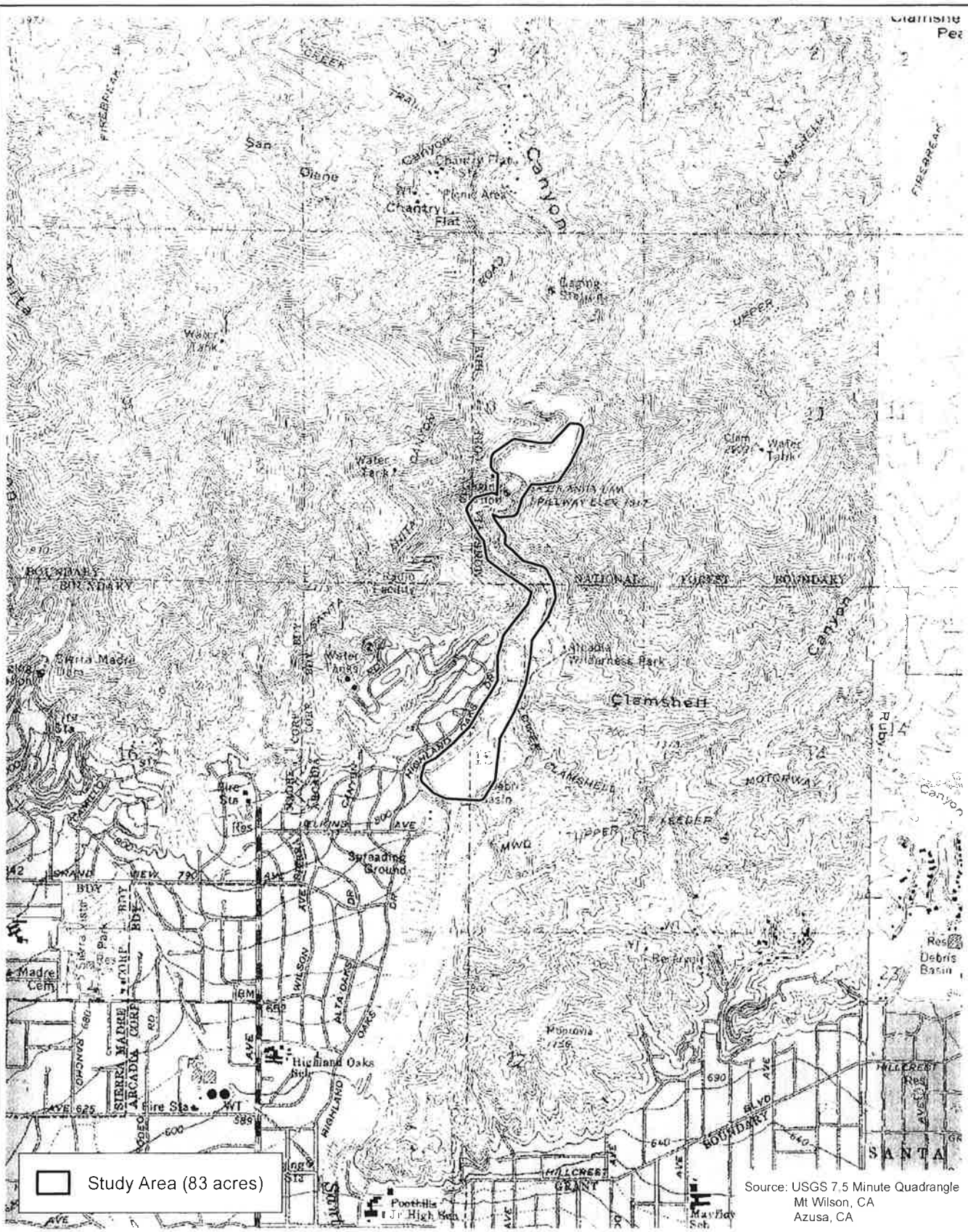
b. Patrick Maxon (Principal Investigator), Albert Knight (Archaeology Field Director), and Dave Smith (Archaeology Field Director) will be involved as archaeologists in the study. They meet the Secretary of Interior's Professional Qualification Standards for Archaeology. Pamela Daly (Architectural History) will complete the historical portion of the study. Ms. Daly meets the Secretary of Interior's Professional Qualification Standards for Architectural History.

   BonTerra Consulting office support will consist of GIS capabilities to construct project maps, staff support, and computers for documentation purposes. No specialized equipment is necessary.

c. Mr. Maxon has completed scores of reconnaissance studies over the past 18 years. Mr. Maxon has held ARPA and other use Permits for the Forest Service, Bureau of Reclamation, and USACE; BLM use permits; and permits for the California Energy Commission. In 2010, a Forest Service archaeological investigation permit (LAR9036CRI) was issued to survey portions of Big Tujunga Canyon Road for the County of Los Angeles Department of Public Works (LADPW), and in April 2011 an archaeological permit (LAR9039CRI) was acquired from the Forest Service for a sediment removal project by the LADPW at the Pacoima Reservoir.

d. Resumes for Patrick Maxon, Albert Knight, Dave Smith and Pamela Daly are attached.

e. By agreement with the Angeles National Forest, no collections will be made. All items of historical or archaeological nature will be left in place within the Forest and remain property of the United States Government.



Local Vicinity

Exhibit 2

Santa Anita Prop 1E Project

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

(Rev 8-23-2012 JAZ) Projects\CoLADPW\J166\Graphics\Plants\Ex2_LV_usgs.pdf

D:\Projects\CoLADPW\J166\mxd\Plant\Ex_LV_usgs.mxd

D:\Projects\CoLADPW\J166\mxd\Plant\Ex_SurveyArea.mxd

Survey Area

Exhibit 3

Santa Anita Prop 1E Project

N W E S

1,000 500 0 1,000 Feet

BonTerra CONSULTING

(Rev 8-23-2012 JAZ) Projects\CoLADPW\J166\Graphics\Plants\Ex3_SurveyArea.pdf