

**2. OWENS VALLEY OPERATIONS PLAN FOR
RUNOFF YEAR 2008-09**

2. Annual Owens Valley Operations Plan For Runoff Year 2008-09

This year's pumping program is consistent with the management strategy of the Water Agreement between the County of Inyo and the City of Los Angeles dated October 18, 1991. As stated in the Water Agreement: *"The overall goal of managing the water resources within Inyo County is to avoid certain described decreases and changes in vegetation and to cause no significant effect on the environment which cannot be acceptably mitigated while providing a reliable supply of water for export to Los Angeles and for use in Inyo County."*

This year will be the second year that Owens Valley operations will be under the provisions of the Interim Management Plan (IMP). The IMP, agreed to by ICWD and LADWP staffs and endorsed by the Standing Committee on March 19, 2007, provides a simple methodology for preparing the Owens Valley annual pumping program for runoff years 2007-08, 2008-09, and 2009-10. Pumping in the Owens Valley will be managed with the goal of maintaining or raising average groundwater levels in each wellfield as compared to the average measured water levels in early April 2007, subject to wellfield specific criteria described in section 8.b of the IMP.

2.1 Owens Valley Runoff Forecast

The April 1, 2008 LADWP forecast runoff for the Owens Valley is based on the actual survey of snow gauging stations located along the Eastern Sierra Mountain front. The long-term average Owens Valley runoff is 415,725 acre-feet based on 1956-2005 actual data. For the period of April 1, 2008 through March 31, 2009, the forecast Owens Valley runoff is 356,100 acre-feet, or 86% of long-term average (Table 1). This includes runoff from streams in Long Valley, Round Valley, and the Owens Valley. Figure 1 shows Owens Valley runoff since the 1971 runoff year.

Table 1. Owens Valley runoff forecast for 2008-09 runoff year

2008 RUNOFF FORECAST
April 1, 2008

APRIL THROUGH SEPTEMBER RUNOFF

	MOST PROBABLE VALUE		REASONABLE MAXIMUM	REASONABLE MINIMUM	LONG-TERM MEAN (1956 - 2005)
	<u>(Acre-feet)</u>	<u>(% of Avg.)</u>	<u>(% of Avg.)</u>	<u>(% of Avg.)</u>	<u>(Acre-feet)</u>
MONO BASIN:	87,800	85%	97%	72%	104,277
OWENS VALLEY:	259,300	85%	97%	71%	304,059

APRIL THROUGH MARCH RUNOFF

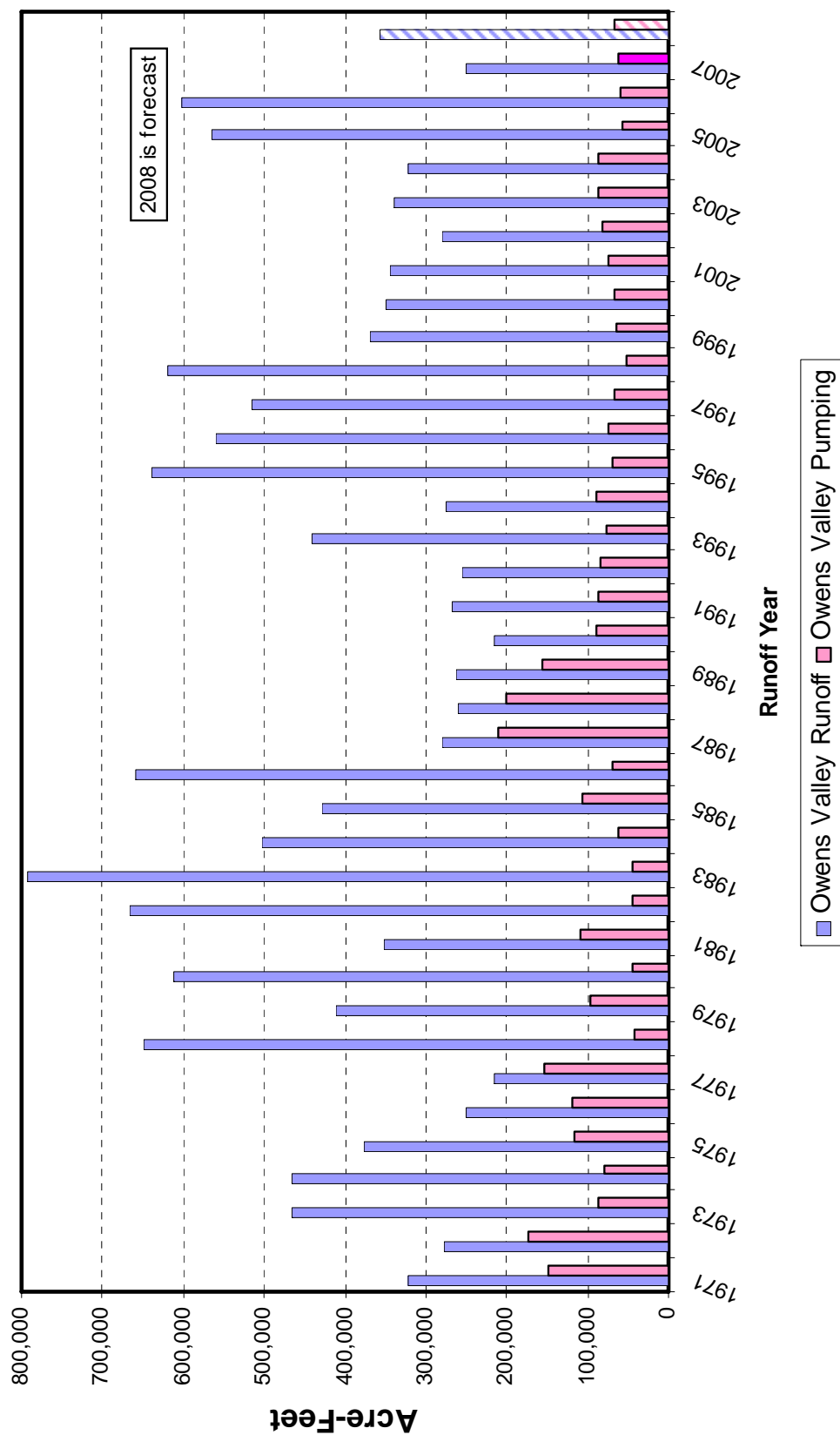
	MOST PROBABLE VALUE		REASONABLE MAXIMUM	REASONABLE MINIMUM	LONG-TERM MEAN (1956 - 2005)
	<u>(Acre-feet)</u>	<u>(% of Avg.)</u>	<u>(% of Avg.)</u>	<u>(% of Avg.)</u>	<u>(Acre-feet)</u>
MONO BASIN:	105,200	86%	99%	73%	122,557
OWENS VALLEY:	356,100	86%	98%	73%	415,725

MOST PROBABLE - That runoff which is expected if median precipitation occurs after the forecast date.

REASONABLE MAXIMUM - That runoff which is expected to occur if precipitation subsequent to the forecast is equal to the amount which is exceeded on the average once in 10 years.

REASONABLE MINIMUM - That runoff which is expected to occur if precipitation subsequent to the forecast is equal to the amount which is exceeded on the average 9 out of 10 years.

Figure 1 - Owens Valley Runoff and Groundwater Pumping



2.2 Owens Valley Groundwater Production

LADWP has prepared its 2008-09 Annual Owens Valley Operations Plan based on the goals and principles of the Water Agreement and in compliance with the provisions of IMP. The 2008-09 Annual Operations Plan focuses on meeting in-valley uses and maintaining average wellfield groundwater levels commensurate with those measured in April 2007.

The amount of groundwater pumping allowed under the Water Agreement from each wellfield in the Owens Valley is determined based on the ON/OFF status of monitoring sites located throughout the Owens Valley (Section V of Water Agreement). Table 2 lists the ON/OFF status of all monitoring sites in the Owens Valley as of April 2008. According to the ON/OFF provisions, Table 3 shows that as of April 2008, approximately 144,000 acre-feet of water is available for groundwater pumping from Owens Valley wellfields. The 144,000 acre-feet of available pumping is from wells linked to monitoring sites with ON status and from exempt wells. Wells are categorically exempt when their pumping has no impact on groundwater dependent vegetation or when they are used to supply town water systems, fish hatcheries, and specific Enhancement/Mitigation projects. Table 3 lists a breakdown of available pumping and proposed annual groundwater pumping by wellfield. Figure 2 shows comparison between the amount of groundwater pumping allowed under the provisions of Inyo/LA Water Agreement and the actual groundwater pumping from the Owens Valley for each runoff year since 1992.

As shown in Table 3, LADWP's planned pumping in Owens Valley for 2008-09 runoff year is limited to 66,800 acre-feet under the provisions IMP. This is approximately 46% of the pumping allowed under the ON/OFF provisions of the Water Agreement. Figure 1 also shows actual groundwater pumping from wellfields in Owens Valley from the 1971 runoff year to the planned pumping for the 2008-09 runoff year.

Consistent with the goals of the Water Agreement, pumping in all areas is within the allowable limits dictated by ON/OFF status and the groundwater mining provisions of the Green Book. Table 4 shows the latest update of the mining calculations based on the procedures described in Section IV.C of the Green Book. As shown in this table, none of the wellfields in the Owens Valley will be in deficit by the end of the first half of the 2008-09 runoff year.

As stated earlier, ICWD and LADWP entered into the IMP agreement for managing groundwater in Owens Valley during 2007-08 through and 2009-10 runoff years. Groundwater pumping in the Owens Valley will be managed with the goal of maintaining or raising average groundwater levels in each wellfield compared to the average measured groundwater levels in early April 2007. A number of representative monitoring wells in each wellfield are utilized to calculate the average groundwater levels in corresponding wellfields. Table 5 lists the agreed upon monitoring wells in each wellfield utilized for calculating average wellfield groundwater levels, measured groundwater levels in April 2007 and 2008, and forecast water levels in April 2009 based on 1) the measured April 2008 water levels; 2) the 2008-09 Owens Valley runoff; and 3) the proposed wellfield pumping volumes. Measured April 2008 water levels for Owens Valley remained generally stable

despite extremely low runoff conditions but pumping only exempt wells as presented in Exhibit B of the IMP (Table 6). Similarly for April 2009, water levels are expected to remain relatively stable despite below normal runoff conditions being forecast.

Table 7 details planned pumping for the 2008-09 runoff year on a month-to-month basis for each wellfield. Pumping for town water systems, fish hatcheries, and enhancement/mitigation (E/M) projects are included in that distribution. While this table provides the planned pumping amounts from each wellfield on a monthly basis, the actual pumping may differ depending on the equipment conditions.

Planned pumping may be increased to provide freeze protection for the Los Angeles Aqueduct during winter months.

A full water allotment will be available for most in-valley uses throughout the Owens Valley.

The planned Owens Valley groundwater pumping for the 2008-09 runoff year will be 66,800 acre-feet (Table 7). This number is consistent with the provisions of the Water Agreement and the IMP. Pumping tests such as the Reinhackle Spring Operational Test in the Bairs-Georges Wellfield, or the initial operation of production wells W415 in Big Pine and W416 in the Lone Pine Wellfield, if agreed to by ICWD and LADWP, may be in addition to the above planned pumping total.

The following is a discussion of the planned pumping program by wellfield. Figures 3, 4, and 6 through 10 locate LADWP's Owens Valley pumping wells by wellfield. These figures show the location of production wells, monitoring wells, and vegetation monitoring sites in each area.

Table 2 - Soil / Vegetation Water Balance Calculations for April 2008 According to the Section III of Green Book

Site	Oct 2007 Soil AWC (cm)	50% Annual Precip. (cm)	Proj. soil AWC	Oct. 2007 Veg. Water Req./ Water Req. for Well Turn-On (cm)	Oct 2007 Status	April 2008 soil AWC (cm)	April 2008 Status	Soil AWC Req. for Well Turn On (cm)
L1	29.9	7.9	37.8	17.6/NA	ON	37.6	ON	NA
L2	42.4	7.9	50.3	11.3/NA	ON	44.8	ON	NA
L3	12.3	7.9	20.2	28.3/NA	OFF	28.8	ON	NA
BP1	10.0	NA	10	13.1/22.9H	OFF	15.1	OFF	22.9H, OFF 10-97
BP2	2.6	NA	2.6	9.3/28.4	OFF	9.6	OFF	28.4, OFF 7-98
BP3	25.6	7.6	33.2	8.9/NA	ON	30.5	ON	NA
BP4	54.1	8.2	62.3	8.1/NA	ON	63.1	ON	NA
TA3	5.1	NA	5.1	14.0/25.9	OFF	11.2	OFF	25.9, OFF 7-98
TA4	15.0	NA	15	17.4/23.2	OFF	22.6	OFF	23.2, OFF 10-98
TA5	19.4	8.2	27.6	1.6/NA	ON	26.1	ON	NA
TA6	8.0	NA	8	13.5/26.8H	OFF	17.5	OFF	26.8H, OFF 7-96
TS1	1.2	NA	1.2	9.0/20.4H	OFF	9	OFF	20.4H, OFF 10-96
TS2	6.5	NA	6.5	13.2/19.5	OFF	16.4	OFF	19.5, OFF 7-98
TS3	31.3	7.3	38.6	22.4/NA	ON	52.4	ON	NA
TS4	28.2	NA	28.2	47.5/47.9	OFF	46.3	OFF	47.9, OFF 10-03
IO1	20.6	NA	20.6	44.0/42.2	OFF	31.8	OFF	42.2, OFF 10-98
IO2	3.4	NA	3.4	4.6/14.8	OFF	9.2	OFF	14.8, OFF 7-05
SS1	20.2	NA	20.2	13.9/39.3	OFF	35.1	OFF	39.3, OFF 7-05
SS2	2.5	NA	2.5	5.4/13.4	OFF	9.4	OFF	13.4, OFF 7-03
SS3	18.4	NA	18.4	17.5/37.7	OFF	35	OFF	37.7, OFF 10-03
SS4	1.5	NA	1.5	6.1/15.9	OFF	8.9	OFF	15.9, OFF 7-05
BG2	30.9	NA	30.9	5.8/33.7	OFF	33	ON	NA

H - These values of soil water required for well turn-on were derived using calculations based on percent cover that were routinely performed in the past. The values have not been updated to conform to the Greenbook equations in section III.D.2, p. 57-59.

**Table 3 - Available Pumping Capacity According to Monitoring Sites with
ON Status and Planned Pumping for Runoff Year 2008-09**

Wellfield	Monitoring Site	Associated Production Wells	Available Capacity (AF)	Planned Pumping (AF)
Laws	L1	247, 248, 249, 398	12,670	
	L2	236**, 239, 243, 244	10,492	
	L3	240, 241, 399, 376, 377	9,195	
	L5*	245, 387, 388	9,412	
	Exempt	236**, 354, 365, 413	3,337	
	Wellfield Pumpage		45,106	6,300
Bishop	All wells	140, 371, 406, 407, 408, 410, 411, 412	12,000	
	Wellfield Pumpage		12,000	10,200
Big Pine	BP3	222, 223, 231, 232	4,851	
	BP4	331	7,530	
	Exempt	218, 219, 330, 332, 341, 352, 415	25,486	
	Wellfield Pumpage		37,867	20,400
Taboose Aberdeen	TA5	349	10,570	
	Exempt	118	1,810	
	Wellfield Pumpage		12,380	6,800
Thibaut Sawmill	TS3	103, 104, 382EM	2,968	
	Exempt	351, 356	12,598	
	Wellfield Pumpage		15,566	12,800
Indep. - Oak				
	Exempt	59, 60, 61, 65, 357, 383EM, 384EM,	13,973	
	Wellfield Pumpage		13,973	7,400
Symmes Shepherd	Exempt	402EM	1,350	
	Wellfield Pumpage		1,350	1,200
Bairs Georges	BG2	76, 343, 348, 403	4,054	
	Exempt	343	500	
	Wellfield Pumpage		4,054	500
Lone Pine	Exempt	344, 346, 390	1,231	
	Other	416	335	
	Wellfield Pumpage		1,566	1,200
Owens Valley Total			143,862	66,800

* Monitoring site has yet to be located.

** Well W236 is used partially for making up the irrigation water

**Figure 2 - Owens Valley Pumping Allowed under Water Agreement
and Actual Pumping**

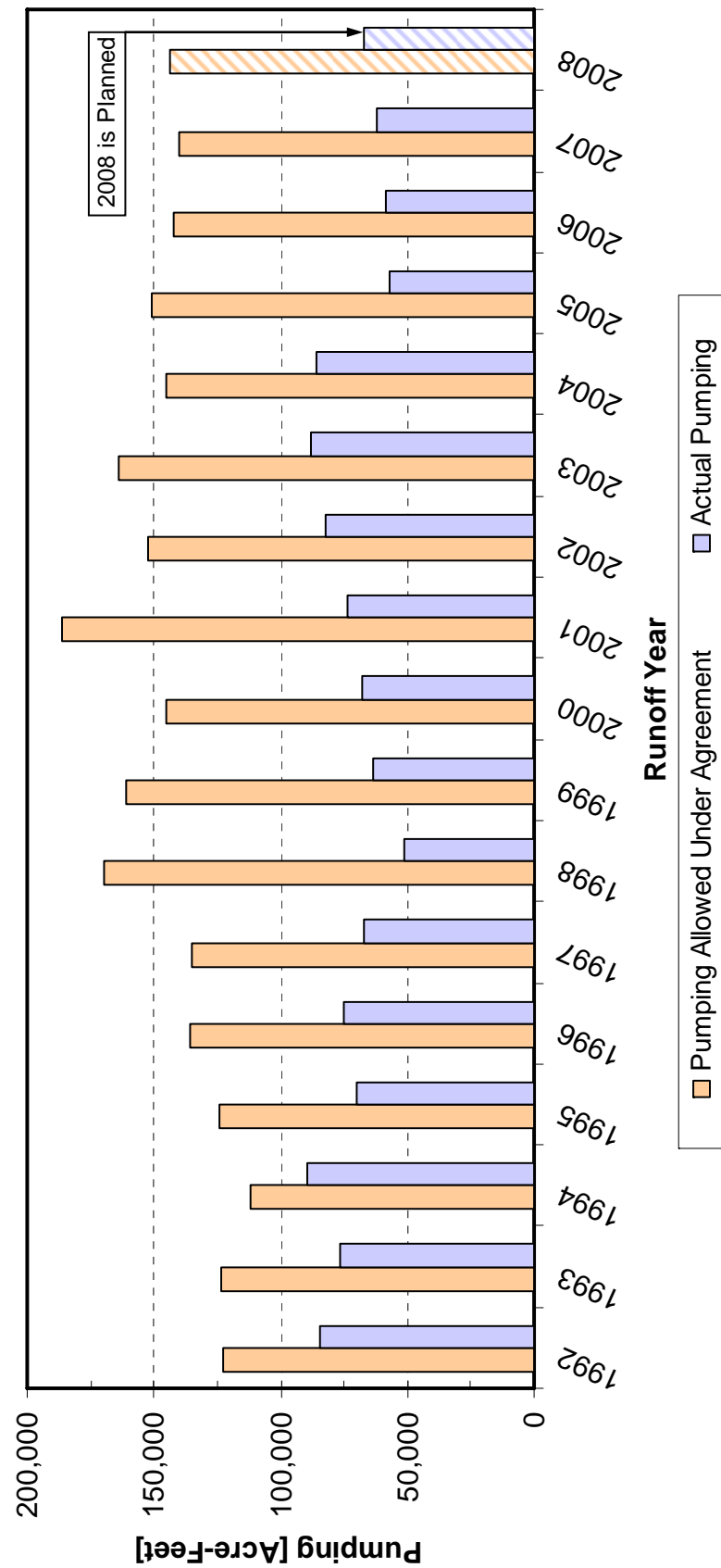


Table 4 - Summary of Recharge and Pumping in AF for Water Year 1989-2007 and Estimated Apr-Sep 2008 Pumping Limit

Water Year	OWENS VALLEY Runoff Percent	LAWS		BISHOP		BIG PINE		TABOOSE-THIBAUT		IND-SYM-BAIRS		LONE PINE		OWENS VALLEY	
		Recharge	Pumping	Recharge	Pumping	Recharge	Pumping	Recharge	Pumping	Recharge	Pumping	Recharge	Pumping	Recharge	Pumping
1989	64%	12,757	38,167	36,453	11,961	19,762	35,915	23,128	54,284	26,747	34,728	10,991	1,668	129,837	176,723
1990	55%	11,580	27,988	34,198	11,432	17,604	29,666	19,777	33,480	23,406	20,124	9,989	1,658	116,554	124,348
1991	59%	11,132	13,691	34,868	11,519	18,729	21,168	21,087	29,136	25,846	10,390	10,408	1,303	122,070	87,207
1992	57%	10,859	8,907	34,688	11,326	18,392	24,345	20,518	23,761	25,195	14,154	10,420	1,626	120,072	84,119
1993	99%	19,778	7,541	44,445	8,404	27,580	22,627	35,068	19,424	40,061	11,689	15,509	1,519	182,441	71,204
1994	60%	12,026	21,206	35,793	10,193	19,430	24,962	21,977	23,557	28,106	14,878	11,554	1,281	128,885	96,077
1995	137%	28,115	7,053	55,397	4,799	38,758	21,970	46,375	17,121	55,103	12,631	22,296	1,037	246,044	64,611
1996	123%	12,588	11,535	50,754	9,153	33,228	24,331	42,097	19,906	51,113	12,382	19,757	1,106	209,537	78,413
1997	125%	15,237	8,349	49,949	9,606	33,474	24,002	42,837	21,774	52,100	9,461	19,962	1,128	213,559	74,320
1998	139%	28,195	470	55,309	7,159	40,065	23,729	46,845	16,496	55,605	7,946	20,341	1,365	246,361	57,165
1999	95%	18,546	1,697	42,388	8,672	28,013	21,832	32,426	16,700	41,090	8,424	15,481	2,141	177,944	59,466
2000	80%	11,102	3,974	39,539	10,804	23,213	20,212	27,567	23,143	37,015	8,497	14,344	1,036	152,780	67,666
2001	77%	12,259	2,295	38,772	10,176	22,695	26,785	27,960	17,247	33,469	8,685	13,520	1,942	148,674	67,130
2002	63%	11,184	3,480	35,514	10,839	19,715	26,885	22,495	25,288	28,820	10,279	12,103	1,345	129,831	78,116
2003	75%	11,454	5,786	38,486	11,407	21,883	25,885	26,166	27,387	32,455	14,281	13,088	1,179	143,532	85,925
2004	71%	11,138	7,412	37,149	11,777	21,126	26,149	25,044	25,159	29,771	15,750	11,357	1,119	135,586	87,366
2005	120%	18,389	3,841	47,471	7,093	32,686	19,423	40,500	18,674	46,441	18,585	17,191	1,128	202,678	68,744
2006	138%	35,336	2,892	54,337	5,667	39,650	20,685	47,757	15,707	53,873	9,944	19,980	1,119	250,935	56,014
2007	64%	10,947	7,838	34,470	10,516	19,757	20,525	25,804	14,578	27,624	10,673	10,454	1,100	129,057	65,230
2008 (a)	78%	11,361	5,400	38,062	9,000	22,736	10,200	28,142	11,590	30,541	7,950	12,072	1,110	142,914	45,250
(b) TOTAL		313,984	189,522	838,042	191,503	518,498	471,296	623,571	454,412	744,380	261,451	290,816	26,910	3,329,292	1,595,094
Estimated Apr-Sep 2008 Pumping Limit			124,462		646,539		47,202		169,159		482,929		263,906		1,734,198

(a) Estimated Recharge for the 2008 Water Year; Approximate Pumping for First Half of Water year 2008 (Oct-Mar).

(b) Estimated 20 Year Total for Recharge; actual 19.5 Year Total for Pumping.

Table 5 – Measured Depth-To-Water in April 2007, April 2008, and forecast for April 2009 in selected monitoring wells

Well Field (Planned Pumping)	Monitoring Well	April 2007 Measured DTW (ft)	April 2008 Measured DTW (ft)	April 2009 Forecasted DTW (ft)	April 2009 DTW change from April 2007
Laws (6,300 AF)	T436	-5.3	-7.1	-9.0	-3.7
	T490	-10.2	-12.6	-14.0	-3.7
	T492	-23.1	-26.8	-32.4	-9.3
	Average	-12.9	-15.5	-18.4	-5.6
Big Pine (20,400 AF)	T425	-14.9	-14.9	-15.6	-0.7
	T426	-11.7	-11.9	-12.2	-0.5
	Average	-13.3	-13.4	-13.9	-0.6
Taboose-Aberdeen (6,800 AF)	T418	-9.1	-8.3	-8.4	0.7
	T419	-6.3	-5.1	-5.5	0.8
	T421	-33.1	-32.5	-33.8	-0.8
	T502	-8.0	-7.5	-8.8	-0.8
	Average	-14.1	-13.3	-14.1	0.0
Thibaut-Sawmill (12,800 AF)	T413	-10.4	-18.4	-12.7	-2.3
	T415	-19.0	-11.9	-18.5	0.5
	Average	-14.7	-15.1	-15.6	-0.9
Independence-Oak (7,400 AF)	T407	-9.9	-9.8	-10.1	-0.2
	T408	-2.9	-2.8	-3.0	-0.1
	T409	-3.3	-3.1	-4.4	-1.1
	Average	-5.4	-5.2	-5.8	-0.5
Symmes-Shepherd (1,200 AF)	T401	-22.0	-20.6	-20.2	1.8
	T403	-7.0	-6.3	-5.8	1.2
	T404	-5.4	-5.4	-5.0	0.4
	T447	-35.7	-34.6	-33.4	2.2
	Average	-17.5	-16.7	-16.1	1.4
Bairs-George (500 AF)	T398	-2.7	-3.8	-3.9	-1.2
	T400	-4.4	-4.6	-4.7	-0.4
	Average	-3.5	-4.2	-4.3	-0.8

Table 6 – Exempt wells in Owens Valley

Exhibit B

(revision 7/2007)

List of Exempt Owens Valley Wells for this Agreement

WELL NUMBER	WELL FIELD	REASON
354 ¹	Laws	Town Supply
413 ²	Laws	Town Supply and Laws Museum E/M Project Irrigation Well
236	Laws	Irrigation Water (to supplement irrigation water supply from Well 365 when necessary)
247	Laws	Supply McNally Pasture enhancement/mitigation Project
376	Laws	Irrigation Supply for re-vegetation project
377	Laws	Supply Laws/Poleta Pasture enhancement/mitigation Project
399	Laws	Irrigation Supply for re-vegetation project
341 ¹	Big Pine	Town Supply
352 ²	Big Pine	Town Supply
415 ^{2 3}	Big Pine	Town Supply
357 ¹	Independence-Oak	Town Supply
384 ²	Independence-Oak	Town Supply
344 ¹	Lone Pine	Town Supply
346 ²	Lone Pine	Town Supply
330	Big Pine	Fish Spring Hatchery
332	Big Pine	Fish Spring Hatchery
349	Taboose-Aberdeen	Water to supply a pond which is a mitigation project
351	Thibaut-Sawmill	Blackrock Fish Hatchery
356	Thibaut-Sawmill	Blackrock Fish Hatchery
401	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
59	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
60	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
65	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
383E/M	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
384E/M	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
61	Independence-Oak	Water for irrigation in Independence-Oak Wellfield
365	Laws	Water for irrigation in Laws Wellfield
245	Laws	Water for irrigation in Laws Wellfield
387	Laws	Water for irrigation in Laws Wellfield
388	Laws	Water for irrigation in Laws Wellfield
402E/M	Symmes-Shepherd	Water for E/M Project in Symmes-Shepherd Wellfield
390E/M	Lone Pine	Water for E/M Project in Lone Pine Wellfield
343	Bairs-Georges	Irrigation Water in Bairs-Georges Wellfield in Below Average Runoff Years

Note 1: Primary town supply well

Note 2: Backup town supply well

Note 3: Usage for the Big Pine Ditch system to be consistent with evaluation and approval of such use by the Technical Group

Note: This is Exhibit B, "List of Exempt Owens Valley Wells for this Agreement," an attachment to the 3/07 Standing Committee-approved Interim Management Plan (IMP).

Table 7 - Planned Monthly Wellfield Pumping for 2008-09 Runoff Year in AF

Month	Laws	Bishop	Big Pine	Taboose- Aberdeen	Thibaut- Sawmill	Indep.- Oak	Symmes- Shepherd	Bairs- George	Lone Pine	TOTAL
April	900	1,500	1,700	150	1,060	1,000	200	0	180	6,690
May	900	1,500	1,700	1,000	1,060	1,050	200	0	180	7,590
June	900	1,500	1,700	1,000	1,080	1,050	200	50	190	7,670
July	900	1,500	1,700	1,000	1,080	1,050	200	150	190	7,770
August	900	1,500	1,700	1,000	1,080	1,050	200	150	190	7,770
September	900	1,500	1,700	1,000	1,080	1,050	200	150	180	7,760
October	200	200	1,700	900	1,060	200	0	0	15	4,275
November	200	200	1,700	150	1,060	200	0	0	15	3,525
December	200	200	1,700	150	1,060	200	0	0	15	3,525
January	100	200	1,700	150	1,060	200	0	0	15	3,425
February	100	100	1,700	150	1,060	200	0	0	15	3,325
March	100	300	1,700	150	1,060	150	0	0	15	3,475
Total	6,300	10,200	20,400	6,800	12,800	7,400	1,200	500	1,200	66,800

Laws Wellfield (Figure 3)

Monitoring sites L1, L2, and L3 are in ON status. Production wells controlled by these monitoring sites have an available production capacity of 32,357 acre-feet. Wells linked to monitoring site L5 have a capacity of 9,412 acre-feet. Green Book designated exempt wells within the Laws Wellfield have a capacity of 3,337 acre-feet. Therefore, the total available pumping capacity in the Laws Wellfield is 45,106 acre-feet. Well W236, associated with monitoring site L2 is used partially along with W365 as exempt wells to provide irrigation water. LADWP is evaluating W365 to determine the cause of reduced production capacity.

According to the terms of the IMP, monitoring wells T436, T490, and T492 are used to calculate the average groundwater level in the Laws Wellfield. Even though vegetation monitoring sites L1, L2, and L3 are in ON status, none of the wells associated with these monitoring sites will be pumped in the 2008-09 runoff year because of the Depth-To-Water criteria of the IMP. The pumping minimum in the Laws Wellfield is 6,300 acre-feet this year to supply the town water system, all E/M projects, and irrigated lands in this wellfield. IMP exempted wells (Table 6) will be utilized to provide water for these uses. Therefore, the planned groundwater pumping from the Laws Wellfield is 6,300 acre-feet for the 2008-09 runoff year. With this planned groundwater pumping and 86% Owens Valley runoff, the average April 2009 average groundwater level in the Laws Wellfield based on the key monitoring wells is forecast to be 5.6 feet below April 2007 as shown in Table 5.

Bishop Wellfield (Figure 4)

Pumping in the Bishop Wellfield is governed by the provisions of the Hillside Decree, which is exempt from the provisions of the IMP. The provisions of the Hillside Decree limit LADWP's annual groundwater extractions (pumping and flowing) from the Bishop Cone to the total amount of water used on City-owned lands on the Bishop Cone, including conveyance losses in each runoff year. Currently, total uses on City-owned land within the Bishop Cone is approximately 25,000 acre-feet per year. The current total available pumping capacity in the Bishop Wellfield is approximately 12,000 acre-feet. The planned groundwater pumping from the Bishop Wellfield is 10,200 acre-feet for the 2008-09 runoff year.

Figure 5 shows water use on the City-owned land in comparison to the groundwater extractions (flowing and pumping) on Bishop Cone for runoff years 1996 to present. The current annual water use on the City-owned land (approximately 25,000 acre-feet) and the groundwater extraction capacity (approximately 15,000 acre-feet) leaves additional 10,000 acre-feet of allowed pumping on the Bishop Cone.

The above calculated water use does not include the amount of conveyance losses on Bishop Cone which is a credited use. Once evaluation of conveyance losses within Bishop Cone is completed, it will be included in future Bishop Cone audits.

Figure 3

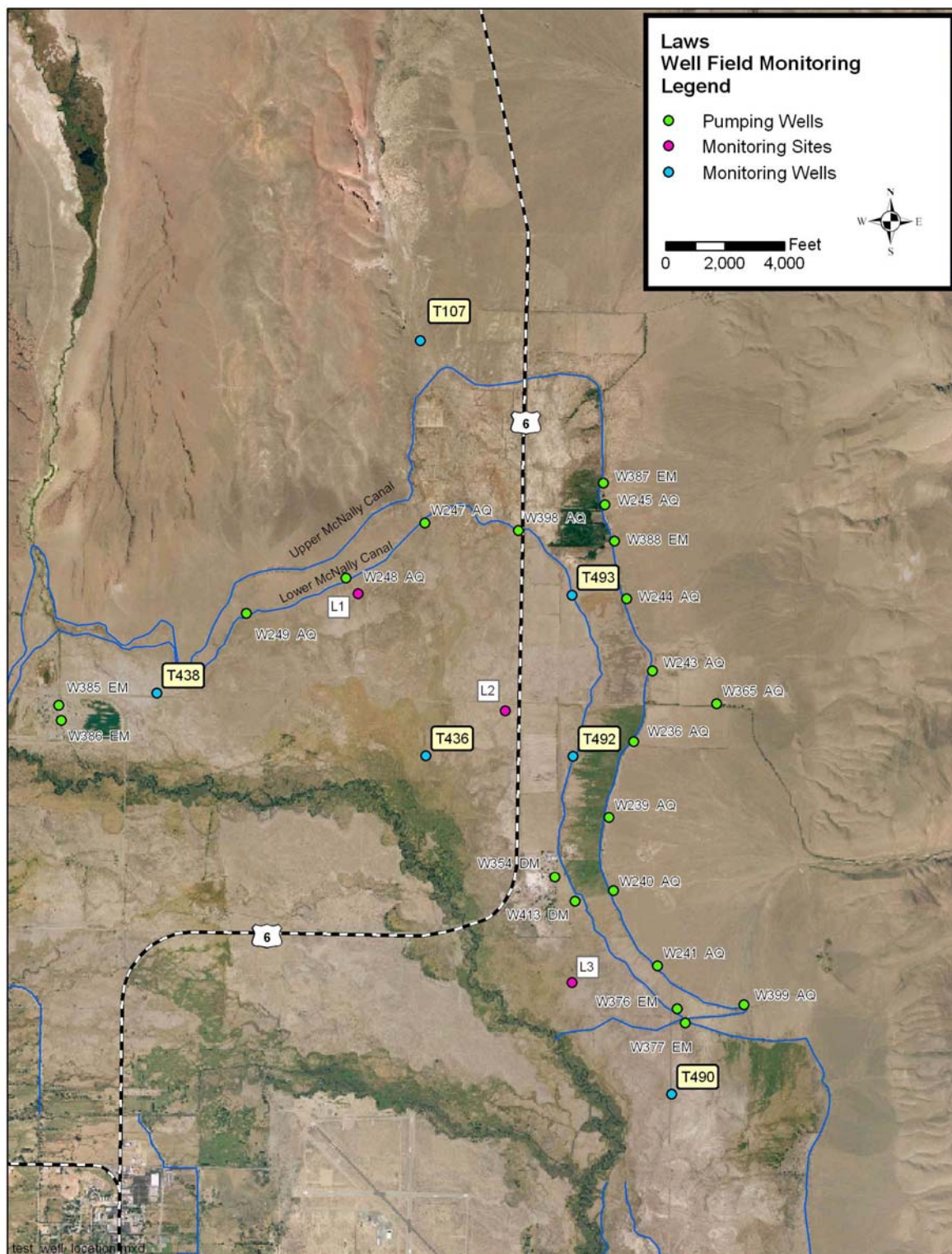


Figure 4

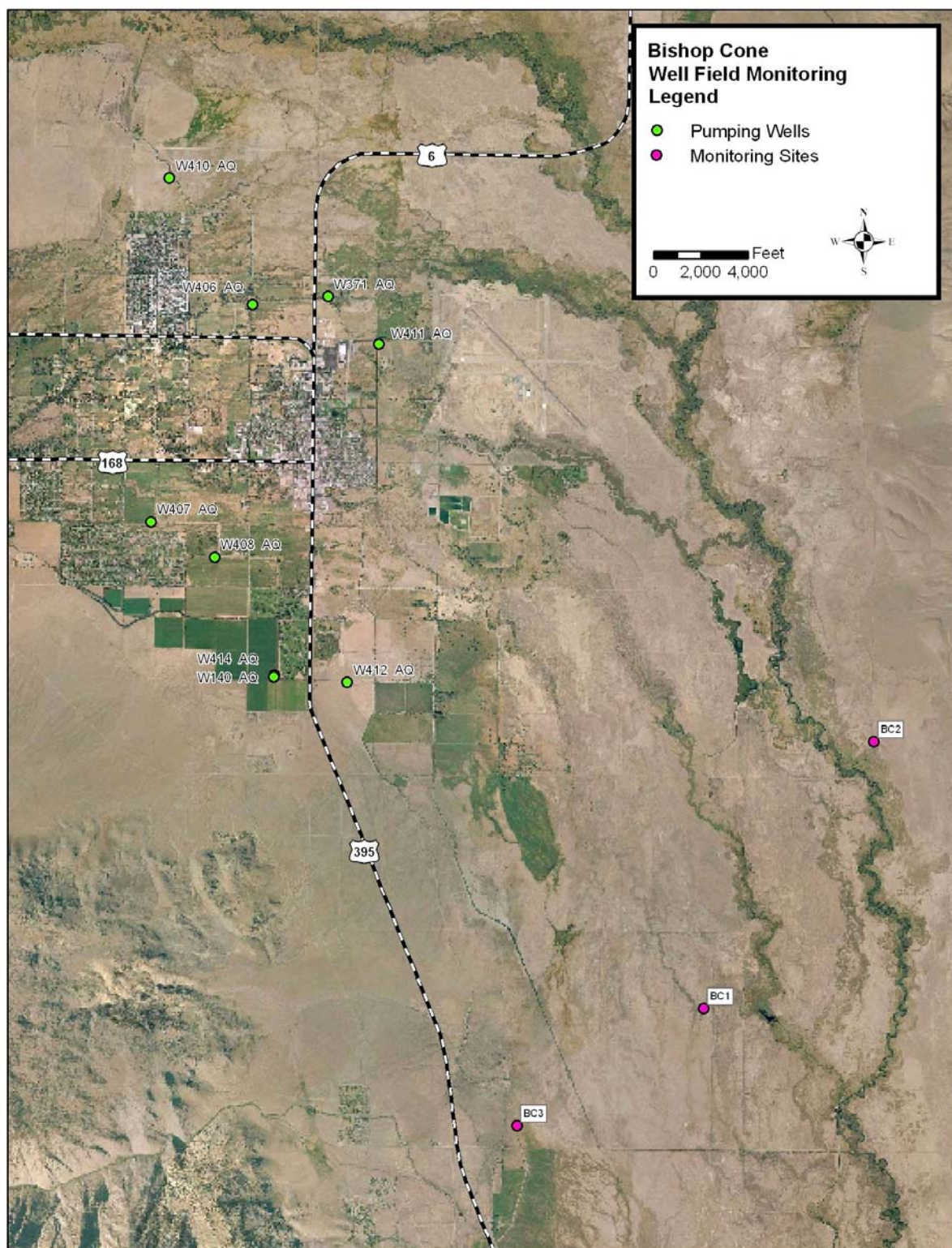
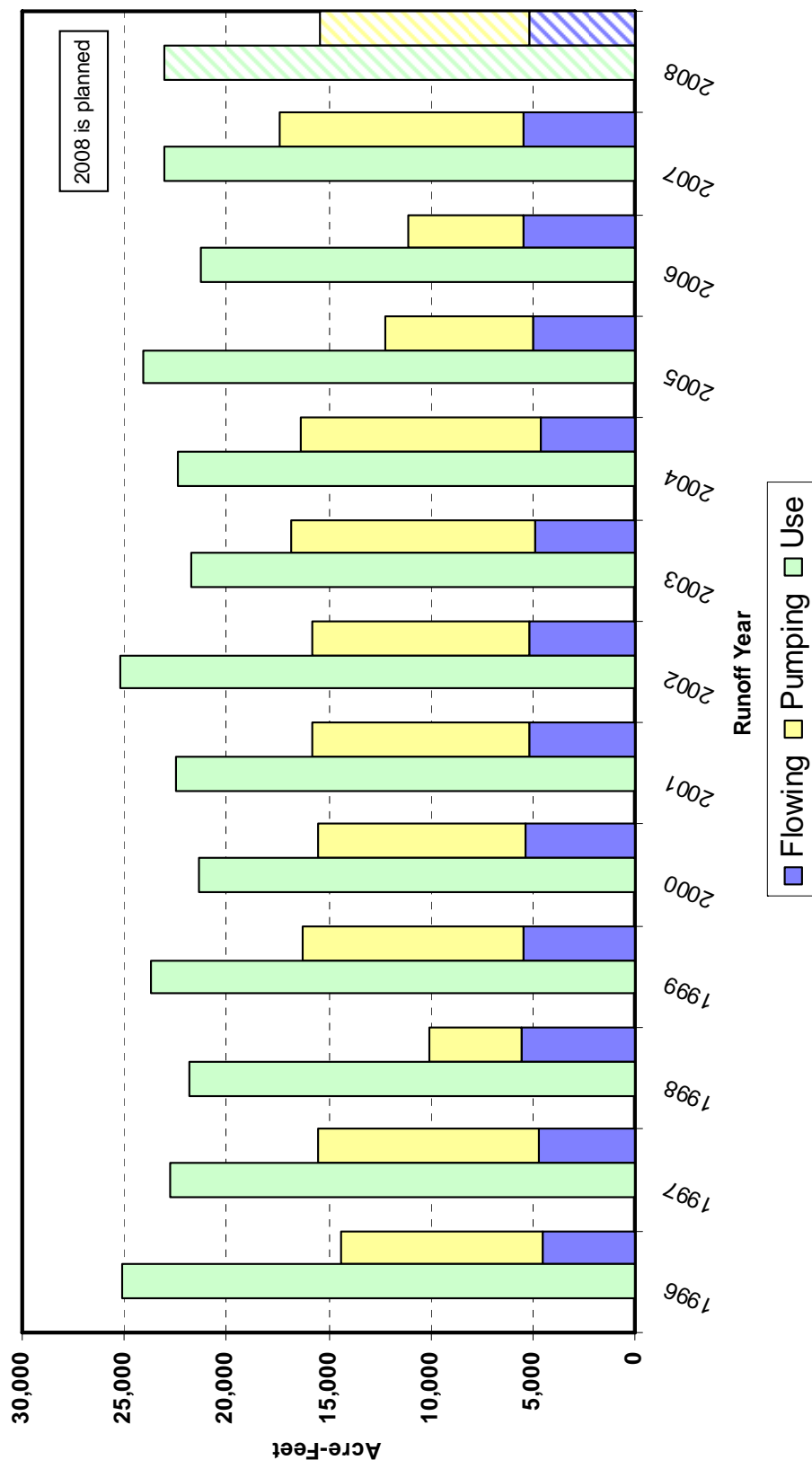


Figure 5 - Groundwater Extraction (flowing & pumping) and Water Use on Los Angeles Owned Land on Bishop Cone



* According Hillside Decree total groundwater extraction can not be more than water use on City owned land within Bishop Cone.

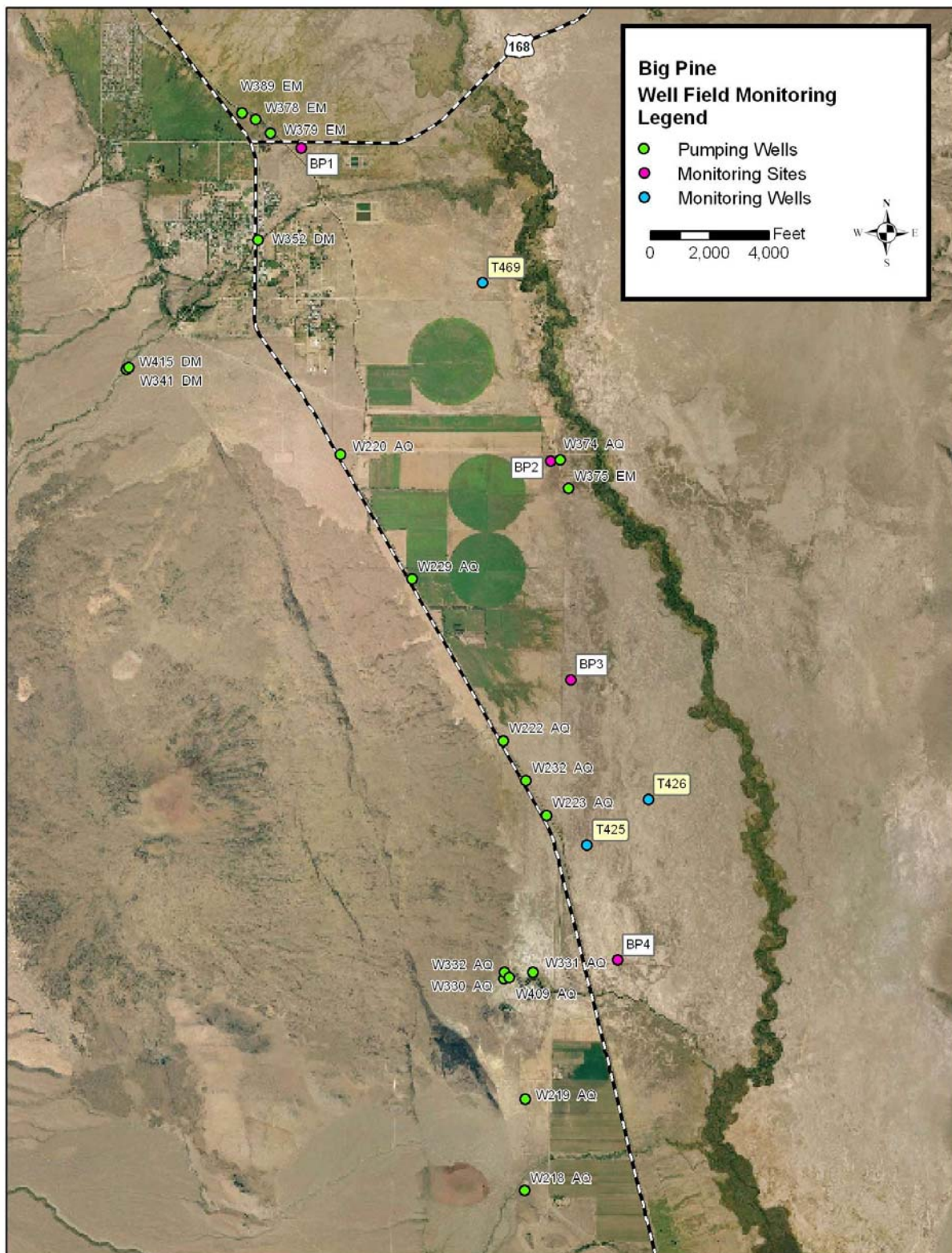
Big Pine Wellfield (Figure 6)

Monitoring sites BP3 and BP4 are in ON status. Production wells controlled by BP3 have an available production capacity of 4,851 acre-feet. Production well W331, controlled by monitoring site BP4, has a production capacity of 7,530 acre-feet. Green Book designated exempt wells W218, W219, town supply wells, and the Fish Spring Fish Hatchery wells in the Big Pine Wellfield have a combined capacity of 25,486 acre-feet. Therefore, the total available capacity in the Big Pine Wellfield is 37,867 acre-feet.

According to the IMP, monitoring wells T425 and T426 are used to calculate the average groundwater level in Big Pine Wellfield. Even though monitoring sites BP3 and BP4 are in ON status, none of the wells associated with these monitoring sites will be pumped in 2008-09 runoff year because of the Depth-To-Water criteria of the IMP. The required pumping from the Big Pine Wellfield includes supplying Fish Spring Fish Hatchery and the town water system on a year-round basis. IMP exempted wells (Table 6) will be utilized to provide water for these uses. The planned groundwater pumping from the Big Pine Wellfield is 20,400 acre-feet in the 2008-09 runoff year. With 20,400 acre-feet of pumping and an 86% forecast Owens Valley runoff, the April 2009 average groundwater level in the Big Pine Wellfield based on the key monitoring wells is forecast to be 0.6 foot below April 2007 measured levels as shown in Table 5.

According to the mining calculations shown in Table 4, the pumping limit for the Big Pine Wellfield during the first half of the 2008-09 runoff year is 47,202 acre-feet. As the planned pumping during this period is 10,200 acre-feet, the pumping limit will not be reached during the first half of the 2008-09 runoff year. Similarly, with a total amount of 20,400 acre-feet planned for pumping from the Big Pine Wellfield, groundwater mining will not be an issue in the Big Pine Wellfield in this runoff year.

Figure 6



Taboose-Aberdeen Wellfield (Figure 7)

Monitoring site TA5 is in ON status. Production well W349 is controlled by this monitoring site and has an available pumping capacity of approximately 10,570 acre-feet. Green Book exempted well W118 in the Taboose-Aberdeen Wellfield has a capacity of 1,810 acre-feet. Therefore, the total available groundwater pumping capacity in the Taboose-Aberdeen Wellfield is 12,380 acre-feet.

According to the IMP, monitoring wells T418, T419, T421, T502 are used for calculate the average groundwater level in the Taboose-Aberdeen Wellfield. Even though monitoring site TA5 is in ON status, production well W349 will not be pumped continuously because of the Depth-To-Water criteria of the IMP. Well W349 will be operated at full capacity for approximately five months and the rest of year will be set on a timer to maintain the water level in a pond adjacent to the Owens River. Production well W349 and exempt well W118 are expected to pump approximately 6,800 acre feet during the 2008-09 runoff year. With the planned 6,800 acre-feet of pumping from the Taboose-Aberdeen Wellfield and an 86% forecast Owens Valley runoff, the April 2009 average groundwater level in the Taboose-Aberdeen Wellfield based on the key monitoring wells is forecast to remain the same as April 2007 measured levels as shown in Table 5.

Thibaut-Sawmill Wellfield (Figure 8)

Monitoring site TS3 is in ON status. Production wells controlled by this monitoring site have an available pumping capacity of 2,968 acre-feet. Green Book exempted wells W351 and W356 supplying Blackrock Fish Hatchery have a capacity of 12,598 acre-feet and 8,110 acre-feet respectively. Therefore, a total capacity of 15,566 acre-feet is available in the Thibaut-Sawmill Wellfield.

According to the IMP, monitoring wells T413 and T415 are used to calculate the average water level in the Thibaut-Sawmill Wellfield. Even though monitoring site TS3 is in ON status, none of the wells associated with this monitoring site will not be pumped in the 2008-09 runoff year because of the depth-to-water criteria of the IMP. The needed pumping in this wellfield for supplying the Blackrock Fish Hatchery is 12,800 acre-feet. IMP exempted wells (Table 6) will be utilized to provide water for this use. The planned groundwater pumping from the Thibaut-Sawmill Wellfield is 12,800 acre-feet for the 2008-09 runoff year. With the planned pumping of 12,800 acre-feet from the Thibaut-Sawmill Wellfield and an 86% of normal forecast Owens Valley runoff, the average April 2009 groundwater level in the Thibaut-Sawmill Wellfield based on the key monitoring wells is forecast to be 0.9 foot below the average measured wellfield groundwater level in April 2007 as shown in Table 5.

Independence-Oak Wellfield (Figure 8)

All vegetation monitoring sites in the Independence-Oak Wellfield remained in OFF status as of April 2008, resulting in no planned pumping from wells linked to these monitoring sites. Total available pumping capacity in the Independence-Oak

Wellfield from Green Book designated exempt wells is 13,973 acre-feet. Pumping from this wellfield will be limited to exempt wells for supplying E/M projects and the town water system.

According to the IMP, monitoring wells T407, T408, and T409 are used to calculate the average groundwater level in the Independence–Oak Wellfield. None of the exempt wells in the Independence-Oak Wellfield will be pumped for LA Aqueduct supply because of the depth-to-water criteria of the IMP. The required pumping in this wellfield is 7,400 acre-feet for supplying the town water system and E/M projects in the wellfield. IMP exempted wells (Table 6) will be utilized to provide water for these uses. The planned groundwater pumping from the Independence-Oak Wellfield is 7,400 acre-feet for the 2008-09 runoff year. With the planned pumping of 7,400 acre-feet from the Independence-Oak Wellfield and an 86% of normal forecast Owens Valley runoff, the average April 2009 groundwater level in the Independence-Oak Wellfield, based on the key monitoring wells, is forecast to be 0.5 foot below to the average measured groundwater level in April 2007 as shown in Table 5.

Figure 7

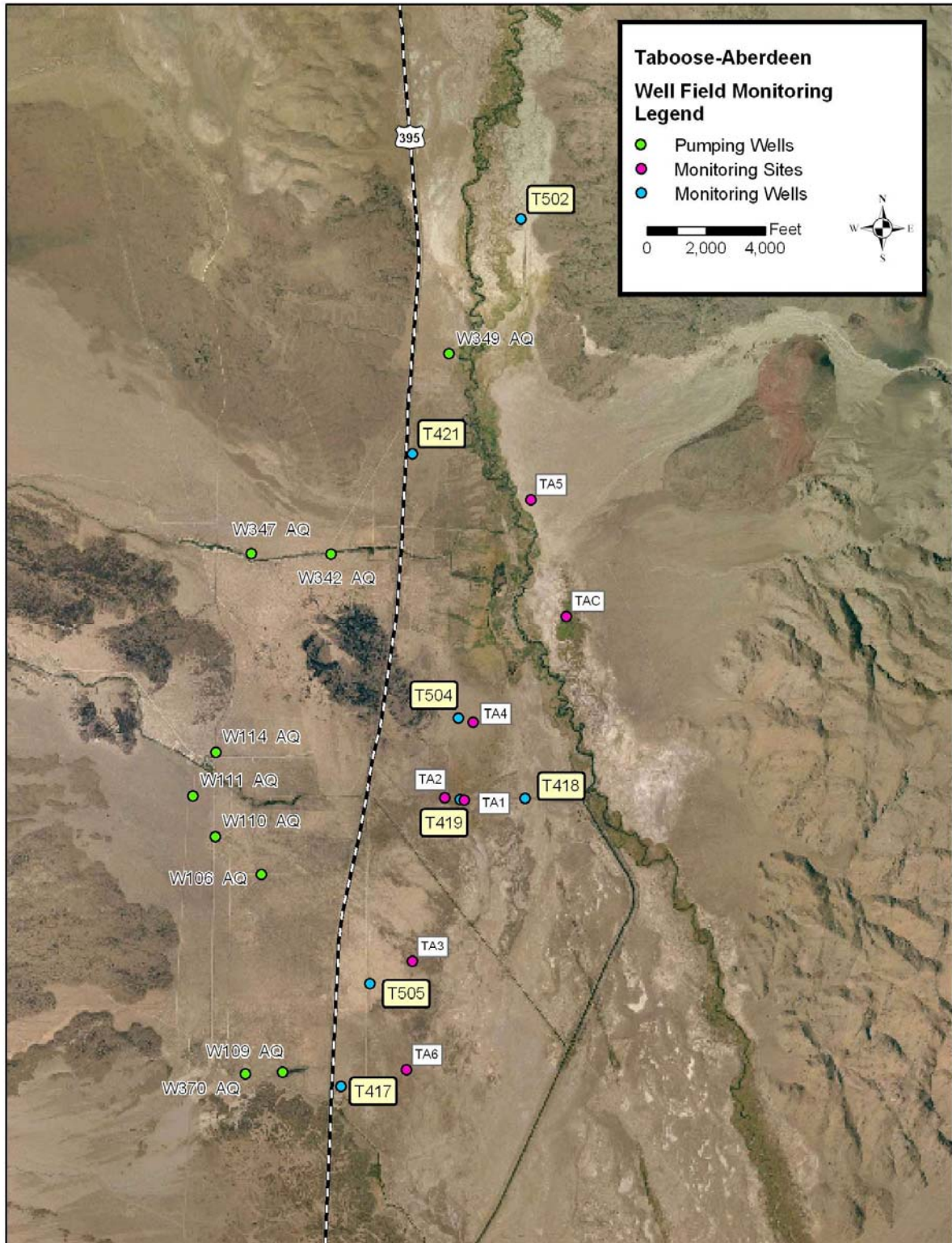
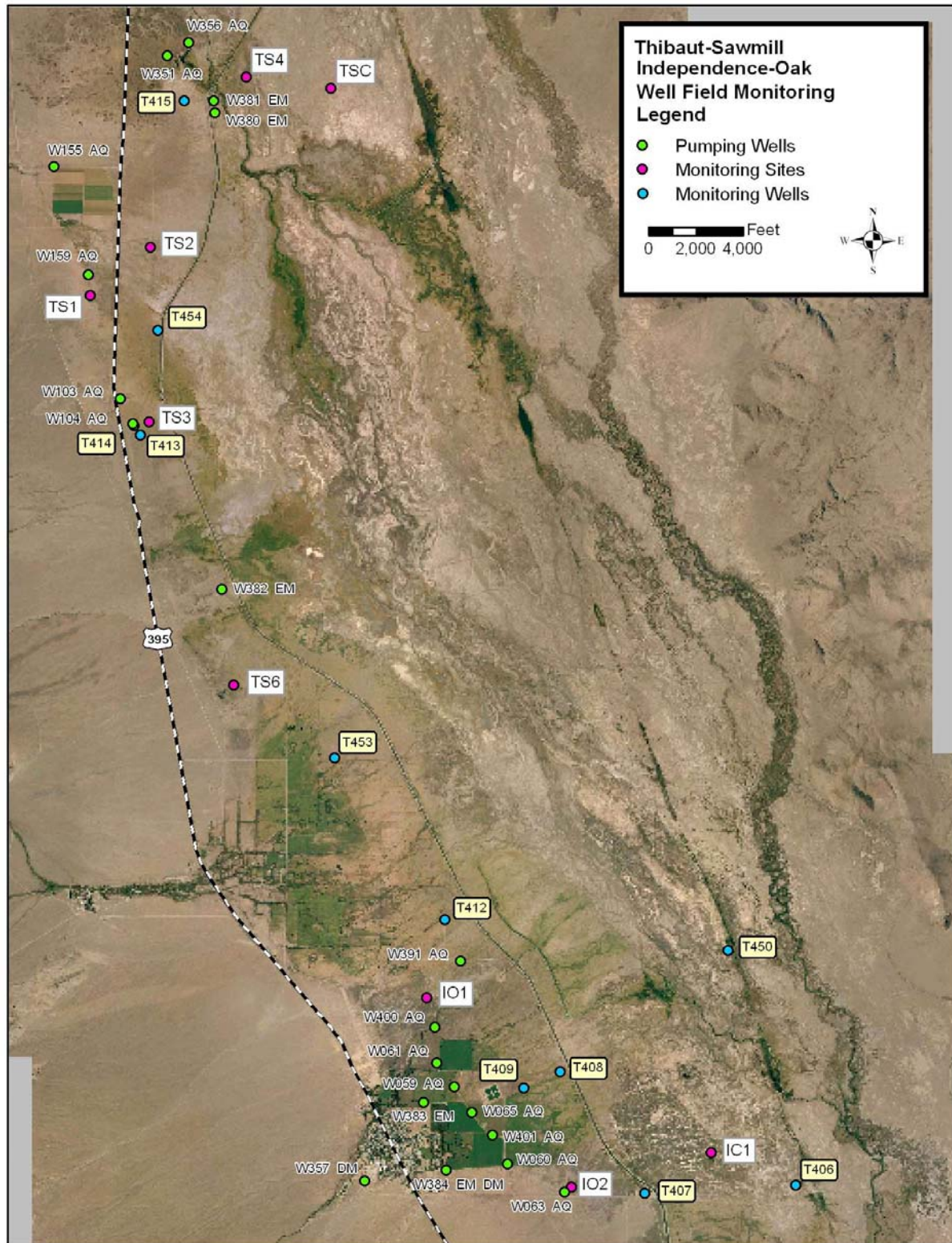


Figure 8



Symmes-Shepherd Wellfield (Figure 9)

The average measured wellfield water level in April 2008 was higher than April 2007 level. However, all vegetation monitoring sites in the Symmes-Shepherd Wellfield remained in OFF status as of April 2008, resulting in no planned pumping from wells linked to these monitoring sites. Green Book designated exempt well, W402, in the Symmes-Shepherd Wellfield, has an available capacity of 1,350 acre-feet. The planned groundwater pumping from the Symmes-Shepherd Wellfield is 1,200 acre-feet for the 2008-09 runoff year.

According to the IMP, monitoring wells T401, T403, T404, and T447 are used to calculate the average water level in the Symmes-Shepherd Wellfield. IMP exempted production well W402 (Table 6) will be used for supplying an E/M project in this wellfield. Pumping 1,200 acre-feet from the Symmes-Shepherd Wellfield and an 86% forecast Owens Valley runoff, the average April 2009 groundwater level in the Symmes-Shepherd Wellfield based on the key monitoring wells is forecast to be 1.4 feet above to the average measured wellfield groundwater level in April 2007 as shown in Table 5.

Bairs-Georges Wellfield (Figure 9)

Vegetation monitoring site BG2 remained in ON status as of April 2008. As 2008-09 runoff year is forecast to be a below normal year, LADWP anticipates having to operate well W343 to provide supplemental water for irrigation purposes in this wellfield. The total planned pumping from well W343 is expected to be 500 acre-feet. Operational testing related to Reinhackle Spring may resume if this monitoring site remains in ON status or if a testing protocol is agreed to by ICWD and LADWP.

According to the IMP, monitoring wells T398 and T400 are used to calculate the average groundwater level in the Bairs-Georges Wellfield. LADWP is not planning to operate any wells in the Bairs-Georges Wellfield during the 2008-09 runoff year for Aqueduct supply purposes, because of the depth-to-water criteria of the IMP. IMP exempted well W343 (Table 6) will have to be utilized to provide supplemental irrigation water during this runoff year. With a planned pumping of 500 acre-feet from the Bairs-Georges Wellfield and an 86% of normal forecast Owens Valley runoff, the average April 2009 groundwater level in the Bairs-Georges Wellfield based on the key monitoring wells is forecast to be 0.8 foot below the average measured groundwater level in April 2007 as shown in Table 5.

Lone Pine Wellfield (Figure 10)

LADWP is currently operating three wells in the Lone Pine area including the town supply wells W344 and W346 and well W390 to supply an E/M project east of town. These three wells pump approximately 1,200 acre-feet per year to meet the demand.

As outlined in Section IV.B of the Green Book, LADWP desires to activate pumping well W416, which was drilled in 2002. Green Book guidelines provide for operation of

a new well at full capacity for six months while monitoring nearby water levels and vegetation. Data collected during the initial operation will then be utilized to develop a long-term operation plan for this production well. The planned groundwater pumping from the Lone Pine Wellfield is 1,200 acre-feet for the 2008-09 runoff year. This level of pumping does not include pumping for long-term testing of W416, which will require agreement on testing protocol between ICWD and LADWP.

Figure 9

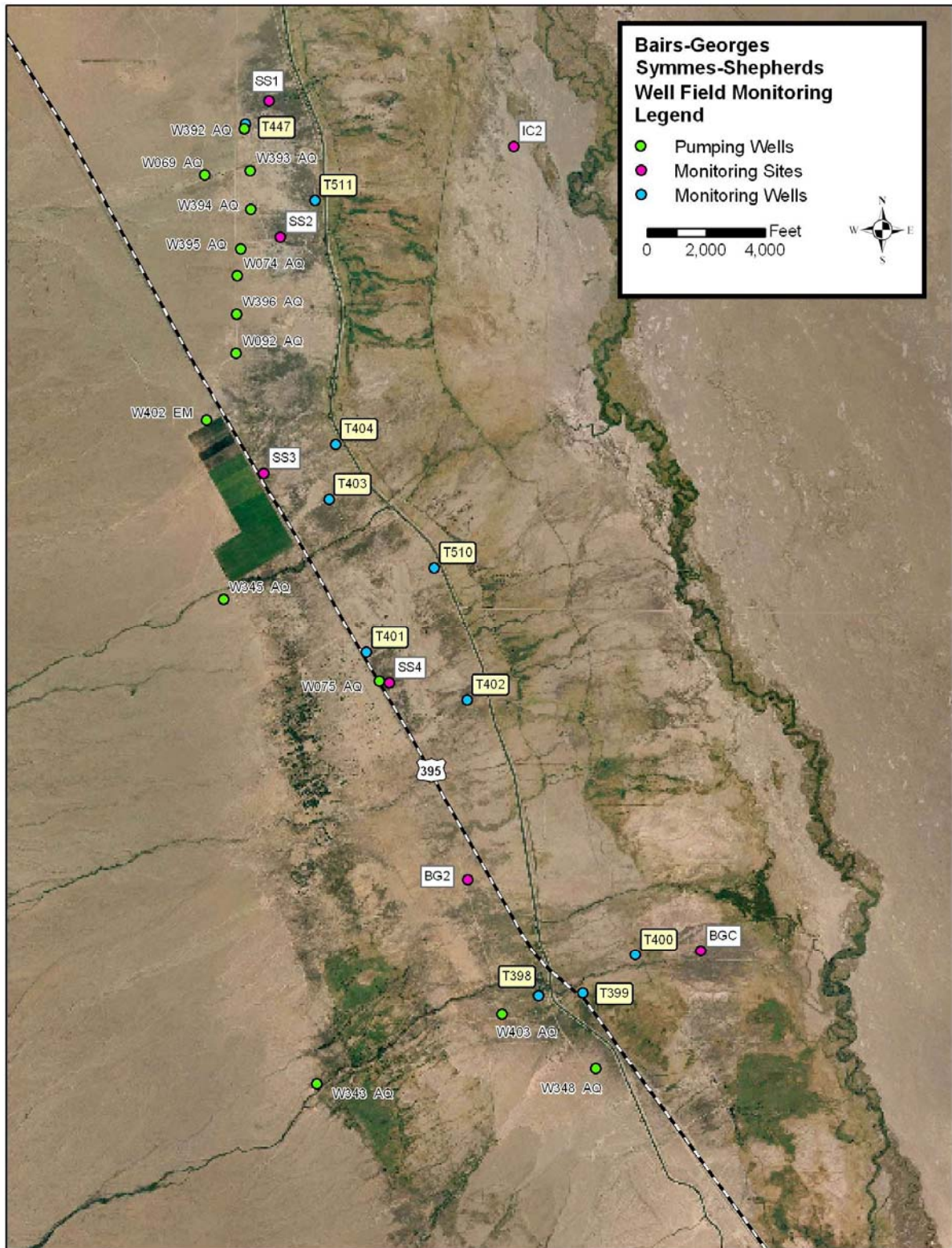
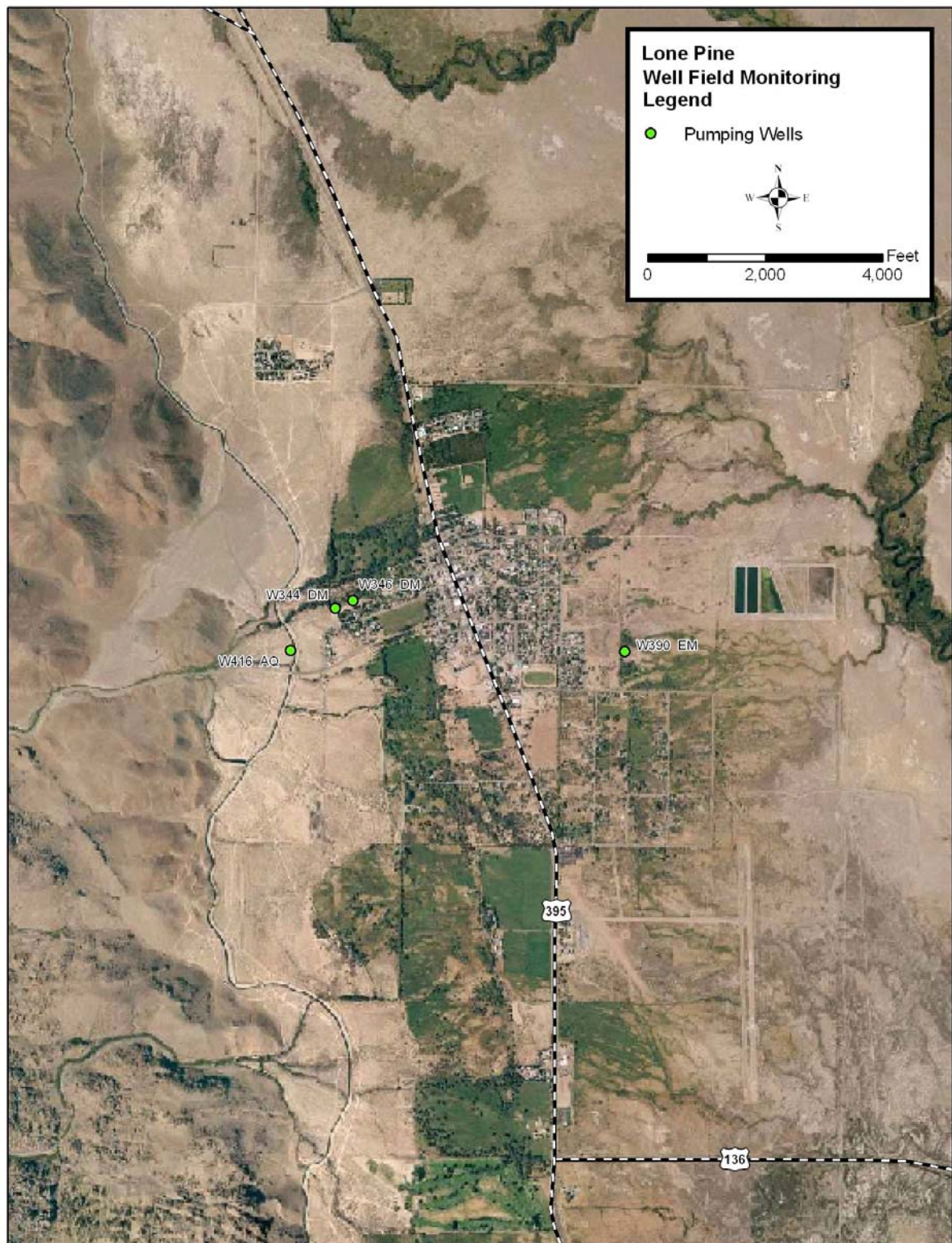


Figure 10



2.3 Owens Valley Uses (Including Enhancement/Mitigation Projects)

Similar to runoff years 1996-97 through 2007-08, full allotments will be available for most in-valley uses in 2008-09. LADWP leases will be provided with their normal allotted duty. Alfalfa and improved pasture E/M projects will receive the allotted duty of 5 acre-feet per acre. Native pasture E/M projects will receive the allotted duty of 3 acre-feet per acre. Some uses that are dependent on creek flows may not receive their full allotment because of the low forecast runoff. Table 8 shows the historic (1981-82) uses and the planned monthly Owens Valley uses for 2008-09. The in-valley uses shown on Table 8 consist of irrigation, stock water, operations, recreation and wildlife projects, E/M supply (with the LORP project usage shown separately), and Owens Lake. As shown in Table 8, LADWP plans to provide approximately 182,500 acre-feet for in-valley uses this runoff year.

The water for the McNally Ponds E/M project is supplied via the McNally canals in above normal runoff years when Owens River water is available or well water when the canals in are not operated. In most normal or below normal runoff years since 1991 the Standing Committee has approved not operating the McNally Pond project because of lack of E/M supply well capacity. In June of 2007 LADWP requested that the list of IMP exempt wells be modified to allow pumping of Wells 248 and 249 in the Laws Wellfield to supply water to the McNally Ponds E/M project. This request was not approved and since the McNally Canals will not be operated in 2008-09 there is no water to supply this project.

The Water Agreement provides that “... *enhancement/mitigation projects shall continue to be supplied by enhancement/mitigation wells as necessary.*” Due to monitoring sites controlling some of the production wells supplying E/M projects being in OFF status, the amount of water supplied to E/M projects has exceeded the amount of water provided by E/M project supply wells. Table 9 shows the planned water supply to E/M projects and the forecast imbalance between the E/M projects water use and the E/M project supply well pumping by the end of 2008-09 runoff year.

The planned E/M water use is expected to result in a shortfall of E/M pumping totaling approximately 7,500 acre-feet during the 2008-09 runoff year and a cumulative shortfall of approximately 176,558 acre-feet by the end of 2008-09 runoff year. This shortfall will be made up partially by pumping Los Angeles Aqueduct supply wells and/or by providing surface water from the Los Angeles Aqueduct.

Releases to the Lower Owens River Project (LORP) from the intake facility commenced on December 6, 2006. These flows gradually increased and along with minimal releases from spillgates to the southern end. An average flow of over 40 cfs is now maintained throughout the entire 62 mile stretch of Lower Owens River south of the intake structure. The releases at the Los Angeles Aqueduct (LAA) intake is augmented through additional releases at the Independence, Blackrock, Georges, Locust, and Alabama spillgates to maintain a continuous flow of approximately 40 cfs in the river channel. Table 8 shows estimated water use by the Lower Owens River on a monthly basis. Consumption of approximately 21,000 acre-feet of water by the Lower Owens River and Blackrock waterfowl habitat area is expected during the 2008-09 runoff year.

	TOTAL													
Use	April		May		June		July		August		September		TOTAL	
	1981	2008	1981	2008	1981	2008	1981	2008	1981	2008	1981	2008	81-82	08-09
Irrigation	3,980	3,600	7,958	8,900	10,373	8,000	9,476	11,800	8,295	10,500	6,321	7,100	46,403	49,900
Stockwater	1,141	1,000	1,319	1,100	1,244	1,100	1,245	1,100	1,219	1,100	1,319	1,000	7,487	6,400
E / M	0	1,600	0	2,400	0	2,800	0	3,000	0	2,300	0	2,000	0	14,100
LORP Project	0	1,000	0	1,700	0	2,400	0	3,400	0	3,400	0	2,000	0	13,900
Owens Lake	0	7,000	0	9,000	0	11,000	0	4,000	0	7,000	0	11,000	0	49,000
Rec. & Wildlife	379	700	804	1,800	1,160	2,000	1,455	1,900	1,381	1,700	1,406	1,300	6,585	9,400
Total/	5,500	14,900	10,081	24,900	12,777	27,300	12,176	25,200	10,895	26,000	9,046	24,400	60,475	142,700
Use	October		November		December		January		February		March		TOTAL	
	1981	2008	1981	2008	1981	2008	1982	2009	1982	2009	1982	2009	81-82	08-09
Irrigation	263	1,000	0	0	0	0	0	0	0	0	14	0	277	1,000
Stockwater	1,065	900	1,045	1,000	1,050	1,000	1,007	1,000	1,010	900	1,098	900	6,275	5,700
E / M	0	1,000	0	600	0	700	0	500	0	300	0	400	0	3,500
LORP Project	0	1,700	0	1,400	0	1,000	0	1,000	0	1,000	0	1,000	0	7,100
Owens Lake	0	6,000	0	3,000	0	2,000	0	1,500	0	2,500	0	4,000	0	19,000
Rec. & Wildlife	781	800	713	800	565	700	478	400	342	300	447	500	3,326	3,500
Total/	2,109	11,400	1,758	6,800	1,615	5,400	1,485	4,400	1,352	5,000	1,559	6,800	9,878	39,800
													46,680	50,900
													13,762	12,100
													0	17,600
													0	21,000
													0	68,000
													9,911	12,900
													70,353	182,500

Table 9 - Owens Valley Groundwater Pumping for Production and E/M Wells (1984-2008)

Runoff Year (Apr-Mar)	Owens Valley Runoff (1) (% of normal)	Total Pumping (acre-feet)	Non-E/M Pumping (acre-feet)	E/M Pumping (acre-feet)	E/M Water Uses (acre-feet)	E/M Pumping & Use Imbalance (acre-feet)	Cumulative E/M Pumping & Use Imbalance (acre-feet)
1985/86	103	107,718	107,718	0	109		0
1986/87	158	69,887	69,887	0	12,696	(4)	0
1987/88	68	209,393	179,883	29,510	29,360		0
1988/89	62	200,443	171,012	29,431	30,872		0
1989/90	63	155,903	133,340	22,563	23,330		0
1990/91	52	89,061	70,974	18,087	17,949		0
1991/92	64	87,526	71,736	15,790	20,517	-4,727	-4,727
1992/93	61	84,135	70,370	13,765	18,357	-4,592	-9,319
1993/94	106	76,329	67,338	8,991	19,310	-10,319	-19,638
1994/95	66	89,153	78,143	11,010	20,812	-9,802	-29,440
1995/96	154	69,740	57,168	12,572	22,914	-10,342	-39,782
1996/97	135	74,817	57,894	16,923	23,949	-7,026	-46,808
1997/98	124	66,910	52,756	14,154	21,500	-7,346	-54,154
1998/99	149	51,575	47,354	4,221	19,672	(4)	-54,154
1999/00	89	63,699	59,366	4,333	24,450	-20,117	-74,271
2000/01	84	67,534	61,195	6,339	20,611	-14,272	-88,543
2001/02	83	72,536	69,242	3,294	21,815	-18,521	-107,064
2002/03	67	82,281	76,361	5,920	21,394	-15,474	-122,538
2003/04	81	87,726	80,728	6,998	21,116	-14,118	-136,656
2004/05	77	85,803	78,090	7,710	18,327	-10,617	-147,273
2005/06	136	56,806	51,735	5,071	19,356	-14,285	-161,558
2006/07	145	57,412	53,934	4,696	17,357	(4)	-161,558
2007-08 (2)	58	60,660	55,960	4,700	12,200	-7,500	-169,058
2008/09 (3)	86	66,800	61,900	4,700	12,200	-7,500	-176,558

(1) Based on 1956-2005 average: 415,725 acre-feet

(2) estimated

(3) forecast or planned

(4) surface water was available

2.4 Aqueduct Operations

Table 10 shows planned Los Angeles Aqueduct first-of-month reservoir storage levels and planned monthly Aqueduct deliveries to Los Angeles. Based on this plan, a total of 195,074 acre-feet will be exported from the Eastern Sierra to the City in the 2008-09 runoff year. This is only 52% of the long-term average export of water from the Eastern Sierra to the City of Los Angeles.

2.5 Water Exports to Los Angeles

Figure 11 provides a record of water supply exported from the Eastern Sierra, averaging 364,000 acre-feet per year from 1970 to present. Figure 12 shows the Los Angeles Aqueduct's contribution to the City of Los Angeles water supply relative to the total supply from 1970 to present. During the 2007-08 runoff year, approximately 17% of the water supply for the City of Los Angeles was provided by exports from the Eastern Sierra (Owens Valley and Mono Basin). Figure 12 also shows the forecast water supply mix for the City of Los Angeles for the 2008-09 runoff year. It is estimated that imports from the Eastern Sierra will provide approximately 30% of water supply for the City of Los Angeles, groundwater pumping from San Fernando Valley will provide 13%, and purchased water from Metropolitan Water District of Southern California will provide the remaining 57% of the City's water supply. This, one of the lowest historic forecast exports to Los Angeles from the Eastern Sierra, is the result of lower than normal Owens Valley runoff, reduced groundwater pumping resulting from the IMP, and increasing water demands in the Owens Valley for the Owens Lake Dust Mitigation Program and the Lower Owens River Project.

**Table 10 - Planned Los Angeles Aqueduct Operations
for 2008-09 Runoff Year**

Month	Owens Valley Reservoir Storage (1st of Month) (acre-feet)	Aqueduct Deliveries to LA (acre-feet)
April	197,760	20,826
May	196,472	30,744
June	173,142	14,876
July	182,281	18,446
August	180,444	18,446
September	168,920	19,339
October	148,755	10,760
November	146,190	11,901
December	149,759	12,298
January	158,382	7,686
February	170,677	14,380
March	181,243	15,372
<i>TOTAL</i>		<i>195,074</i>

Figure 11 – Water Export from Eastern Sierra to Los Angeles

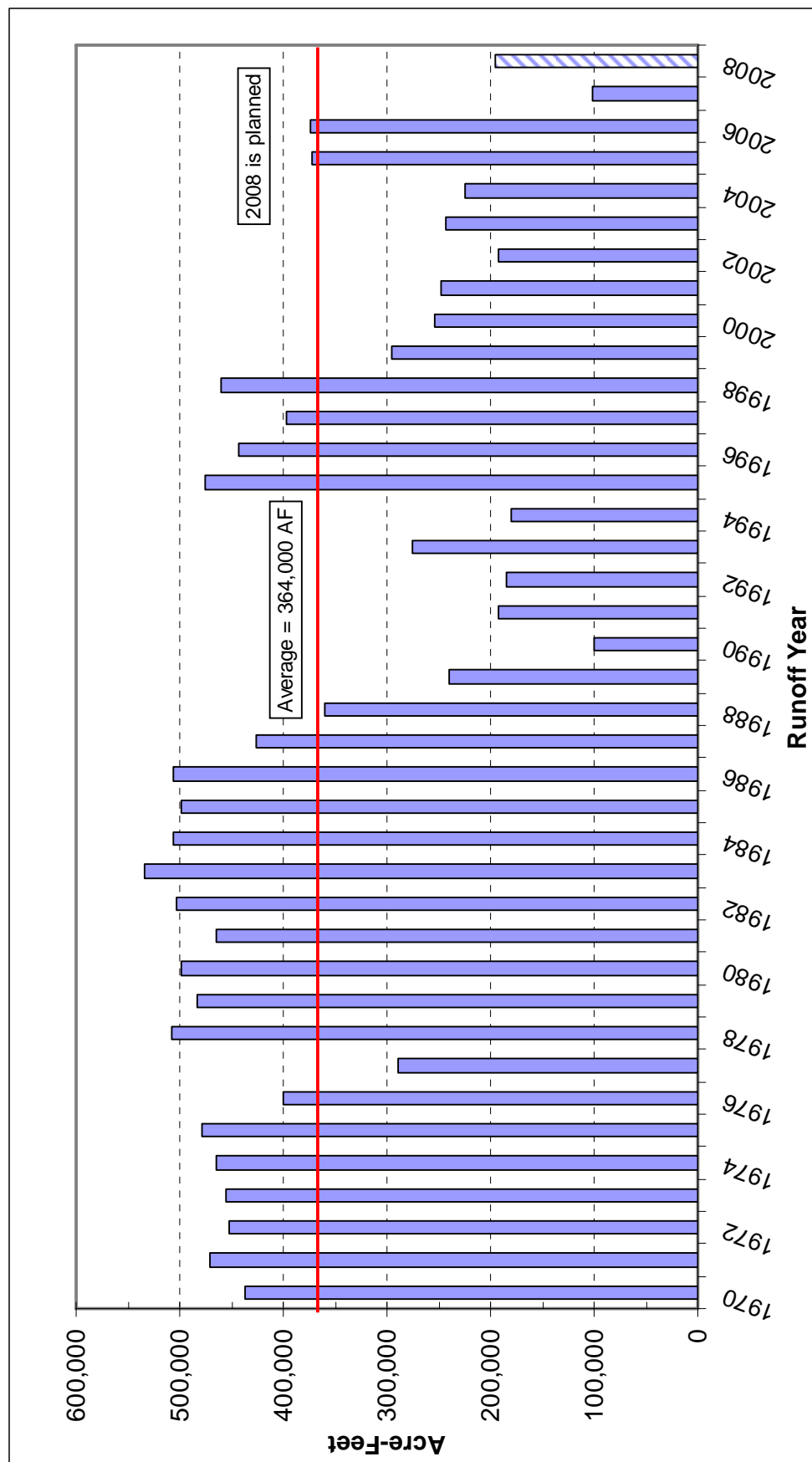


Figure 12 – Sources of Water for the City of Los Angeles

