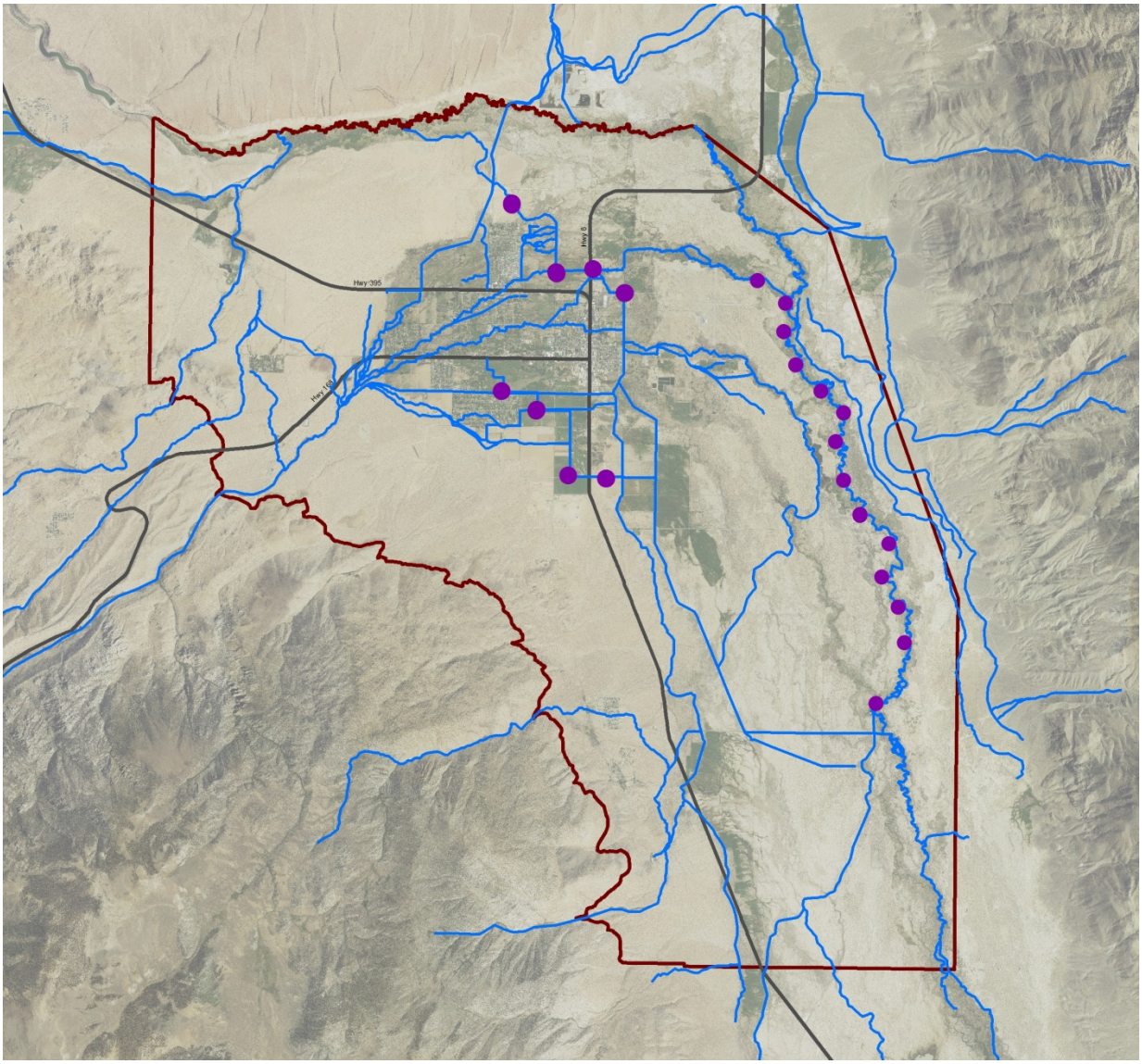
THE BISHOP CONE AUDIT
FOR THE 2016-17 RUNOFF YEAR



Inyo County Water Department
Report 2016-17
August 9, 2017

THE BISHOP CONE AUDIT
FOR THE 2016-17 RUNOFF YEAR

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THE BISHOP CONE AUDIT
FOR THE 2016-17 RUNOFF YEAR

1.0 INTRODUCTION

The Bishop Cone Audit (Audit) is an annual comparison between Los Angeles Department of Water and Power's (LADWP) water usage on Los Angeles-owned lands on the Bishop Cone and its amount of groundwater extraction from wells on the Bishop Cone. The Bishop Cone Audit is required by the Inyo County/Los Angeles Long-term Groundwater Management Agreement (Water Agreement). The "Bishop Cone" is a reference to the legally defined area in the 1940 Hillside Decree which incorporates most of the Bishop Creek alluvial fan along with a portion of the northern Owens Valley from Bishop south towards Big Pine (Map 1). The Water Agreement and the Green Book (the technical appendix to the Water Agreement) define the terms, conditions, and procedures of the Bishop Cone Audit. Inyo County Water Department (ICWD) staff compiles the Bishop Cone Audit from data provided by LADWP. The Audit sums pumping and flowing well amounts and compares those totals to water use on Los Angeles-owned land during a given runoff year (April 1 to March 31) to determine whether LADWP's groundwater extractions exceed its surface water uses on the Bishop Cone.

2.0 BACKGROUND

The City of Los Angeles owns prior appropriative surface water rights in the Bishop area. Los Angeles also owns groundwater rights on the Bishop Cone as a consequence of its ownership of overlying land. A system of ditches and canals exist to convey both surface water from Bishop Creek and the Owens River and also groundwater pumped from LADWP wells to irrigated land throughout the Bishop Cone with some water exiting the Cone. In 1930 and 1931, Los Angeles extracted groundwater from wells on the Bishop Cone for the purpose of export to Los Angeles. This export of groundwater was challenged by local residents, and in the 1940 Hillside Decree, Los Angeles agreed not to pump groundwater for the purpose of export off the Bishop Cone.

Relevant language of the 1940 Hillside Decree is presented below (a link to the entire decree can be found at the ICWD's website at www.inyowater.org/documents/hillside-decree-1940/):

XI

That the defendants [LADWP]*, their servants agents, employees, and assigns, and each of them, be, and they are hereby, enjoined, prohibited, and restrained from in any manner whatsoever pumping, extracting, taking, or transporting out of the Bishop Cone area any subterranean waters from beneath said area: provided, however, that nothing in this judgment contained shall in any manner enjoin, prohibit, or restrain the defendants, their servants, agents, employees, assigns, or any of them, from maintaining or operating their presently–existing drainage ditches to the full extent of their present normal capacity, or from taking artesian water that may arise to the surface of said area outside the casings of any of defendants' capped wells, or from pumping, extracting, taking, or using any such water as may be reasonably necessary for beneficial use upon any lands belonging to the defendants, …..*

In 1972, Inyo County filed a California Environmental Quality Act suit claiming that increased groundwater pumping by LADWP was harming the environment of the Owens Valley and demanding that an Environmental Impact Report (EIR) be completed to analyze the effects of this increased pumping. After numerous legal challenges and negotiations, in 1991 an EIR was approved for LADWP's groundwater pumping and a long term groundwater management plan was agreed upon by Inyo County and LADWP. Section VII.A of the 1991 Water Agreement addresses the Bishop Cone and Hillside Decree with relevant language quoted below (full text of the 1991 EIR, the Water Agreement and the Greenbook can be found at the ICWD's website at http://www.inyowater.org/documents/governing-documents/):

"*Before the Department* [LADWP] *may increase groundwater pumping above present levels, or construct any new wells on the* [Bishop] *Cone, the Technical Group must agree on a method for determining the exact amount of water annually used on Los Angeles-owned lands on the Cone. The agreed upon method shall be based on a jointly conducted audit of such water uses. The Department's annual groundwater extractions from the Cone shall be limited to an amount not greater than the total amount of water used on Los Angeles-owned lands on the cone during that year*." (Water Agreement Section VII.A, Appendix A)

At its October 17, 1995 meeting, the Technical Group agreed to recommend to the Inyo County/Los Angeles Standing Committee the description of a Bishop Cone Audit procedure to be incorporated into the Green Book. The Standing Committee adopted the agreed-upon Bishop Cone Audit procedure on November 7, 1996 as Section IV.D of the Green Book.

Section IV.D.1.a. of the Green Book states: *"For the purposes of the Bishop Cone audit, water usage on Los Angeles-owned land on the Bishop Cone is defined as the quantity of water supplied to such land, including conveyance losses, less any return flow to the aqueduct system. Water usage is documented on a runoff-year basis and is compiled by LADWP each May in the Bishop Area Water Use Report* [Bishop Cone Audit Uses Report]*."* (Appendix B)

In theory compliance with the Water Agreement and the Green Book is simple: LADWP can only extract groundwater to be used on its lands and leases on the Bishop Cone with no flow leaving the system. In a simplified, hypothetical situation, LADWP would have groundwater extraction wells at the "top" of the cone which would provide surface water to ditches running downhill to its lands and leases. Upon reaching the "lowest" land, no surface water would leave. However, there are many practical factors that dictate and complicate how the Bishop Cone Audit accounts for LADWP extractions and uses. Some of these factors are: the Bishop Cone topography (generally sloping west to east in the Bishop area, and north to south from Bishop towards Big Pine), the location of LADWP-owned lands throughout the Bishop Cone area, the location of LADWP's groundwater extraction wells (in central Bishop), the location of LADWP's flowing wells (east of Bishop adjacent to the Owens River), the location of the various ditch and canal systems used to convey water in the Bishop Cone, and operational necessities for conveying surface water both on and off the Bishop Cone.

To illustrate further, the primary source of water available for use on LADWP lands in the topographically higher west Bishop area of the cone is LADWP-owned surface water from Bishop Creek that is diverted into various ditches for irrigation (use) on LADWP-owned land. Groundwater pumped from LADWP wells in central Bishop supplements the remaining Bishop

Creek surface water. The now combined surface and groundwater flows east and south and is used on LADWP land in the central and southern portions of the Cone. Groundwater extracted from flowing wells provides water to the Owens River. Some mixture of surface and groundwater also leaves the Bishop Cone either in canals or the Owens River.

Prior to the adoption of the Water Agreement, several methods were researched to determine the best procedure for tracking LADWP's uses and extraction on the Bishop Cone. A final method was selected which compares the sum of pumped groundwater from production wells and flowing groundwater from artesian wells (extractions) to surface water applied to LADWP-owned lands on the Cone (uses). To determine the total uses, a lease-wise approach was selected which tracks the difference between water coming onto a given LADWP lease and the water (if any) that exits that lease to return to the conveyance system (ditch, canal, creek or river). LADWP supplies a listing of surface water uses by each individual lease account in its annual Bishop Cone Audit Uses Report (Use Report). Credit for a use is granted on accounts that have been agreed to and inspected by ICWD staff. A combination of monitoring devices are used to track extractions and uses on the Bishop Cone, including flumes, weirs, and propeller meters. Flow measurements are taken either manually or continuously using data-logging devices at these devices.

It is important to note that the Bishop Cone Audit does not attempt to compute a complete surface or groundwater budget. Its purpose is to monitor compliance with the dictates of the Water Agreement, the Green Book, and the legal interpretations of the Hillside Decree. The Audit compares LADWP's total water uses to groundwater extractions during a given runoff year. ICWD staff gave a presentation on the Bishop Cone Audit to the Inyo County Water Commission on December 7, 2016, explaining the principles of the BCA in detail. A copy of the PowerPoint presented at the ICWC meeting can be found on the ICWD website: http://www.inyowater.org/wp-content/uploads/2016/12/Bishop-Cone-Audit-12_7_16.pdf

3.0 WATER USES ON LADWP-OWNED LAND ON THE BISHOP CONE

The location of the Bishop Cone and the pumping and flowing wells on the Bishop Cone are shown in Map 1. Also shown on Map 1 are the general locations of the LADWP-owned lease accounts used in the Bishop Cone Audit Uses Report (Appendix C).

Table 1 (below) is a compilation of water usage by account number in acre-feet (AF) on LADWP-owned land on the Bishop Cone for the runoff years of 2015-16 and 2016-17. These water-usage amounts are a yearly total of the surface water coming onto a given lease minus the surface water leaving the lease. Overall, there was an increase in total water use on the Bishop Cone of 6,972 AF from 2015-16 (Use: 26,821) to 2016-17 (Use: 33,793). The majority of this change was due to increased surface water availability due to increased runoff (see explanation in following paragraphs).

TABLE 1
WATER USES ON LOS ANGELES-OWNED LAND ON THE BISHOP CONE

LADWP ACCOUNT NUMBER[*2]	RUNOFF YEAR*[1] 2015-2016 (AF)	RUNOFF YEAR*[1] 2016-2017 (AF)
BC502B (BA354B or BA362B)	764	805
BC302A	111	178
BC302B	1209	1455
BC311	3192	4405
BC313	751	1217
BC324	877	1357
BC1478 (BAICR)[*2]	666	482
BC387A	425	703
BCRECF	233	579
BC339	487	659
BC393	112	144
BC362D	(No Credit)[*3]	(No Credit)[*3]
BC304	126	93
BC500	888	1274
BC397 (BA387B)[*2]	3067	4118
BC361A	1202	1057
BC361B	2108	3026
BC502A (BA354A or 362A)[*2]	355	295
BCRECA	475	1160
BCRECC	0	236
BCRECD	3788	3106
BC338	3368	3908
BCOPRA	0	0
BCOPRB	0	128
BCRV361	153	370
BCRVRECA	(No Credit)[*3]	(No Credit)[*3]
BCLAEMH	704	1547
BC353	271	410
BC005A	36	43
BC005B	31	36
BC006A	108	89
BC1479 (BA342)[*2]	6	5
BC392	771	(No Credit)[*3]
BC301	365	646
BC335	171	269
TOTAL	**26,821**	**33,793**

*1 - A runoff year is defined as starting April 1st and ending March 31st of the following year.

*2 – Former account names listed in parenthesis; in 2015/16 “BA” prefix was changed to “BC”

*3 - Accounts need additional monitoring or diversion infrastructure to establish credit.

0 - No use was reported; data was 0 acre-feet.

NO DATA - No data was reported for the account.

During fall 2016 through winter 2017, joint field visits to the active BCA accounts were conducted by ICWD and LADWP staff. Based on these visits and as a result of observations and discussion of past infrastructure workings, several accounts were either granted or denied credit for the 2016/17 Audit. The accounts denied credit for 2016/17 are: BC362D, BC392, and BCRVRECA. At these three sites, ICWD staff deemed there to be insufficient flow monitoring, potentially allowing unmetered water to affect the accounts without proper quantification.

Also based on the 2016/17 field inspections, the method for calculating Use on a given account for the purpose of the BCA was changed. Prior to 2015/16, LADWP used Stockwater and Ditch Loss as credits to its lessees to distinguish between surface water used for irrigation and not used for irrigation. However, the Audit’s water balance is to determine the total amount of water used on the Bishop Cone between two metering devices. The Audit is not specifically concerned with where or how the water is used. Stockwater is simply water supplied to a parcel during the year for the purpose of providing surface water to stock instead of irrigation to grow plants; it is a distinction made by LADWP for the lessees but is a “Use” for the purpose of the Audit with properly metered water flowing through diversions onto an account and not exiting the account. Ditch Loss is a similar accounting distinction made by LADWP and its lessees; it is an estimation of the water that seeps into the ground from the Account’s metering device prior to arriving at the actual surface water diversion point on the lease (these are sometimes large distances apart). The Ditch Losses are credited to the lessee to reflect water that cannot be used for irrigation. This water, however, is a Use for purposes of the BCA. The Stockwater and Ditch Loss estimates from previous BCA’s (prior to 2015/16) have been replaced with the more rigorous and accurate calculation of subtracting flow onto each account from flow off of that account.

The data reporting format used by LADWP for the BCA has also been updated with approval from ICWD staff. The updated Use Report contained in Appendix C has been simplified by removing LADWP’s internal, lessee-related notations. The new Use Report now contains totals of water entering and leaving a lease (the pertinent information for conducting the Audit). All flow monitoring stations were inspected during the 2016/17 field campaign.

Finally, ICWD staff continues to receive the previous LADWP version of the Use Report to check for historic consistency. The changes in Stockwater and Ditch Loss credits for BCA reporting are the primary reason 2015/16 Uses were substantially greater at the various accounts than 2014/15 Uses. The additional increase in Use between 2015/16 and 2016/17 is primarily due to increased surface water availability due to a moderately wet runoff year (Owens Valley runoff for 2015/16 was approximately 50% of average, whereas 2016/17 runoff was 82%) combined with operational spreading in early 2017.

4.0 TOTAL LADWP GROUNDWATER EXTRACTION ON LADWP-OWNED LAND ON THE BISHOP CONE FOR RUNOFF YEARS 2015-16 AND 2016-17

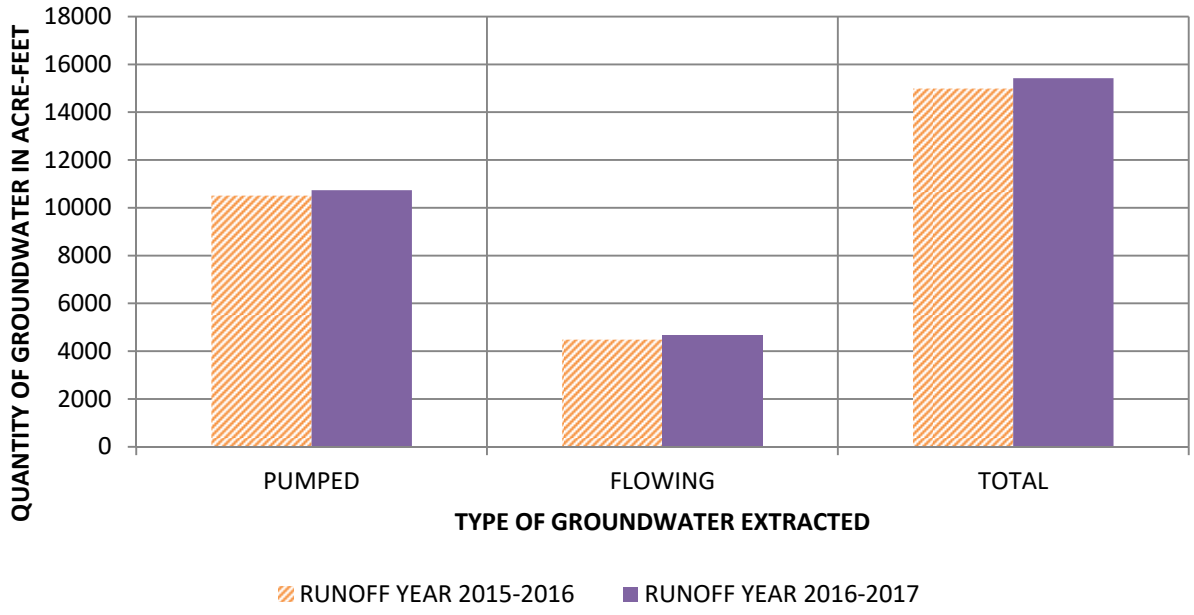
Section IV.D.1.d of the Green Book states: "*Total groundwater extraction by LADWP will be compared with corrected water usage on the Bishop Cone for the runoff year. Total groundwater extraction is defined as the sum of all groundwater pumped by LADWP plus the amount of artesian water that flowed out of LADWP uncapped wells on the Bishop Cone during the runoff year*." (Appendix B)

Figure 1 (below) presents the total amount LADWP groundwater extraction and the groundwater extraction classified as flowing and pumped groundwater on the Bishop Cone in acre-feet for runoff years of 2015-16 and 2016-17.

For runoff year 2015-16, LADWP extracted 14,988 AF of groundwater (10,505 AF from pumped wells and 4,483 from flowing wells). For runoff year 2016-17, LADWP extracted 15,424 AF of groundwater (10,739 AF from pumped wells and 4,685 AF from flowing wells).

LADWP groundwater extractions on the Bishop Cone for the 2016-17 runoff year increased by 436 AF compared to the previous year.

FIGURE 1. TYPE OF LADWP GROUNDWATER AND TOTAL GROUNDWATER EXTRACTION ON THE BISHOP CONE FOR RUNOFF YEARS 2015-16 AND 2016-2017



Flowing and pumped groundwater on the Bishop Cone are broken into detail by each well in Table 2.

TABLE 2
FLOWING AND PUMPED GROUNDWATER BY WELL ON THE BISHOP CONE IN RUNOFF YEAR 2016-17

WELL	FLOWING GROUNDWATER (AF)	PUMPED GROUNDWATER (AF)
F121	36	NA
F122	57	NA
F123	138	NA
F124	68	NA
F125	1082	NA
F126	278	NA
F127	397	NA
F128	268	NA
F129	86	NA
F130	386	NA
F131	625	NA
F132	354	NA
F133	303	NA
F134	558	NA
F136	48	NA
W410	NA	1239
W406	NA	678
W371	NA	1202
W411	NA	975
W407	NA	1183
W408	NA	1997
W140	NA	1469
W412	NA	1997
TOTAL	**4,685**	**10,739**

5.0 COMPLIANCE WITH THE INYO COUNTY/LOS ANGELES LONG-TERM GROUNDWATER MANAGEMENT AGREEMENT

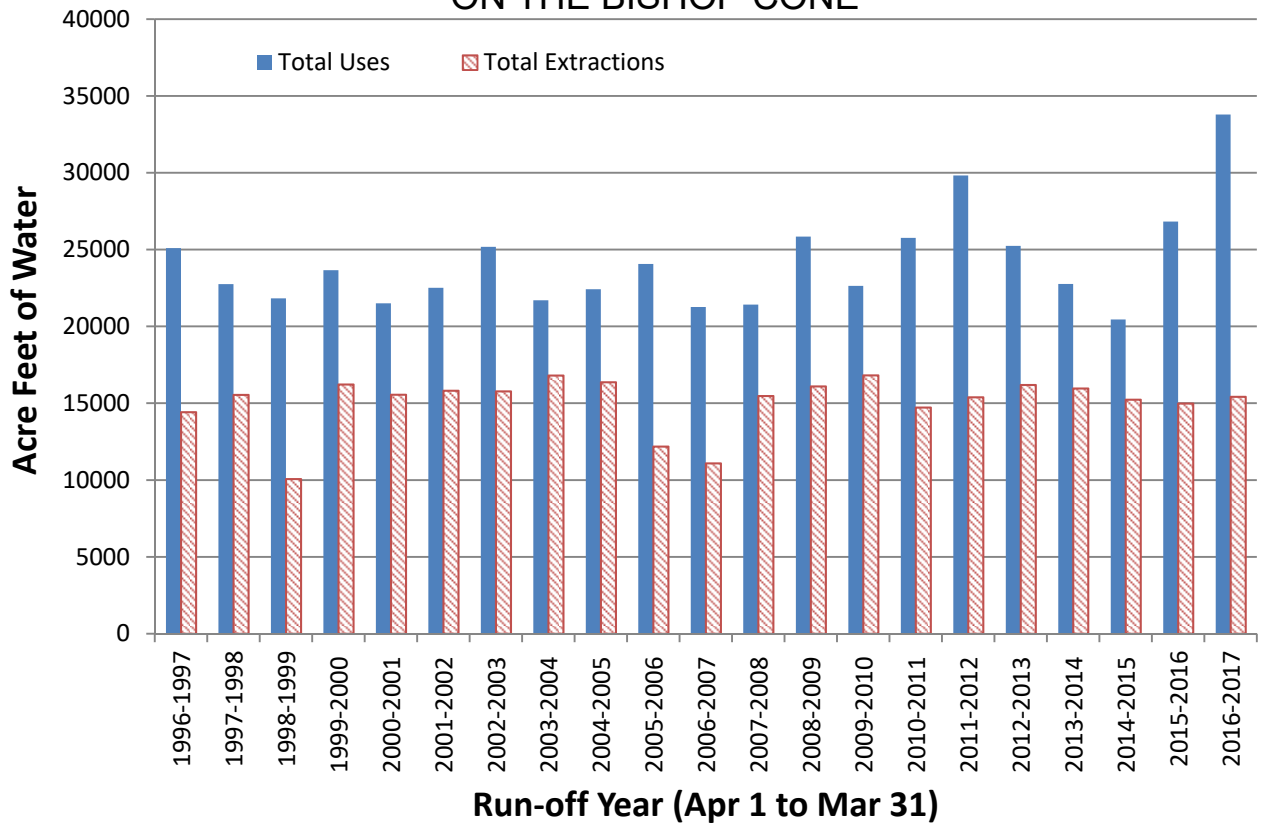
The Water Agreement provides that, during any runoff year, total groundwater extraction by LADWP on the Bishop Cone shall not exceed water usage on Los Angeles-owned land on the Cone. Table 3, below, shows that LADWP was in compliance with the above provision for runoff years 2015-16 and 2016-17 as the total uses on the Bishop Cone exceeded the total groundwater extractions for each year.

TABLE 3
LADWP USES IN COMPARISON TO LADWP GROUNDWATER EXTRACTION ON THE BISHOP CONE

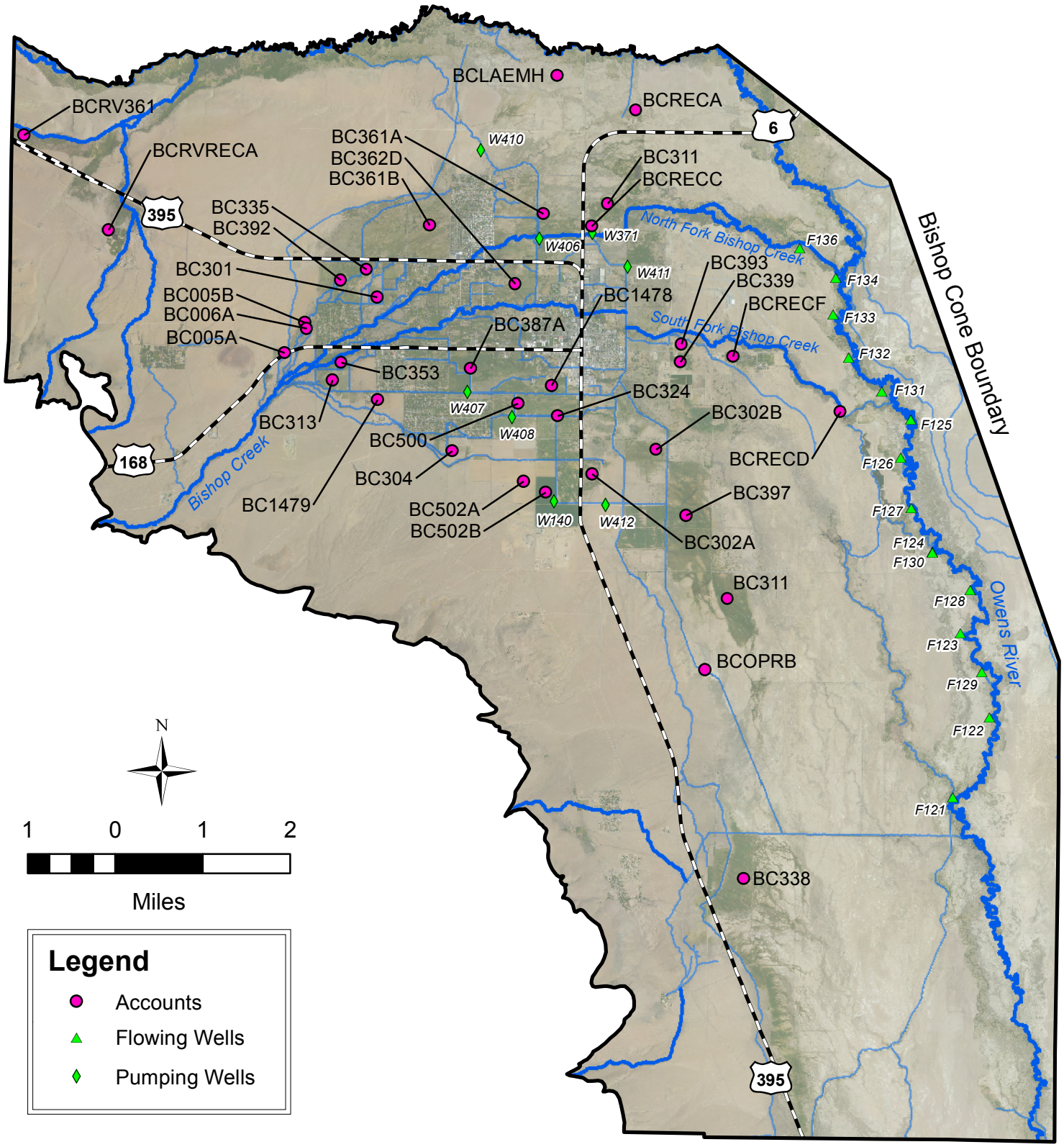
	RUNOFF YEAR 2015-16 (AF)	RUNOFF YEAR 2016-17 (AF)
TOTAL USES	27,745	33,793
TOTAL GROUNDWATER EXTRACTION	14,988	15,424
USES MINUS EXTRACTIONS	12,757	18,369
IN COMPLIANCE?	YES	YES

Figure 2 presents LADWP's water uses versus extractions since runoff year 1996-97. Uses have exceeded extractions throughout the data period; therefore, LADWP has been in compliance with Section IV.D.1.a. of the Green Book and the Water Agreement.

FIGURE 2
WATER USES VERSUS EXTRACTIONS ON THE BISHOP CONE



Map 1. Bishop Cone Audit Features



APPENDIX A

Section VII.A of the Inyo County/Los Angeles Long-Term Groundwater Management Agreement

Section VII of the Agreement

VII. GROUNDWATER PUMPING ON THE BISHOP CONE

A. Any groundwater pumping by the Department on the "Bishop Cone" (Cone) shall be in strict adherence to the provisions of the Stipulation and Order filed on the 26th day of August, 1940, in Inyo County Superior Court in the case of Hillside Water Company, a corporation, et al. vs. The City of Los Angeles, a Municipal Corporation, et al., ("Hillside Decree").

Before the Department may increase groundwater pumping above present levels, or construct any new wells on the Cone, the Technical Group must agree on a method for determining the exact amount of water annually used on Los Angeles-owned lands on the Cone. The agreed upon method shall be based on a jointly conducted audit of such water uses.

The Department's annual groundwater extractions from the Cone shall be limited to an amount not greater than the total amount of water used on Los Angeles-owned lands on the Cone during that year. Annual groundwater extractions by the Department shall be the total of all groundwater pumped by the Department on the Cone, plus the amount of artesian water that flowed out of the casing of uncapped wells on the Cone during the year. Water used on Los Angeles-owned lands on the Cone, shall be the quantity of water supplied to such lands, including conveyance losses, less any return flow to the aqueduct system.

B. The overall management goals and principles and the specific goals and principles for each vegetation classification of this Stipulation and Order apply to vegetation on the Cone.

APPENDIX B

Section IV.D of the Green Book

COPY FOR YOUR INFORMATION

AGENDA ITEM 4

MEMORANDUM

7 November 1996

TO: Inyo County/Los Angeles Standing Committee
FROM: Inyo County/Los Angeles Technical Group

CONSIDERATION OF GREEN BOOK SECTION DESCRIBING THE BISHOP CONE AUDIT

Background

Section VII.A of the Inyo County/Los Angeles long-term water management agreement provides that "before the Department may increase groundwater pumping above present levels, or construct any new wells on the [Bishop] Cone, the Technical Group must agree on a method for determining the exact amount of water annually used on Los Angeles-owned lands on the Cone. The agreed upon method shall be based on a jointly conducted audit of such water uses."

At its 17 October 1995 meeting, the Technical Group agreed to recommend to the Inyo County/Los Angeles Standing Committee the attached description of a Bishop Cone audit to be incorporated into the Green Book (the technical appendix to the long-term agreement).

Request

The Technical Group requests that the Standing Committee adopt the attached description as section IV.D of the Green Book.

D. Bishop Cone Audit

This sub-section describes the procedures for conducting the Bishop Cone audit in accordance with Section VII.A of the Agreement. The Bishop Cone audit is an annual accounting of LADWP groundwater extraction and water usage on Los Angeles-owned land on the Bishop Cone. The Agreement provides that, during any runoff year, total groundwater extraction by LADWP on the Bishop Cone shall not exceed water usage on Los Angeles-owned land on the Cone. The area defined as the Bishop Cone is shown as Figure IV.D.1.

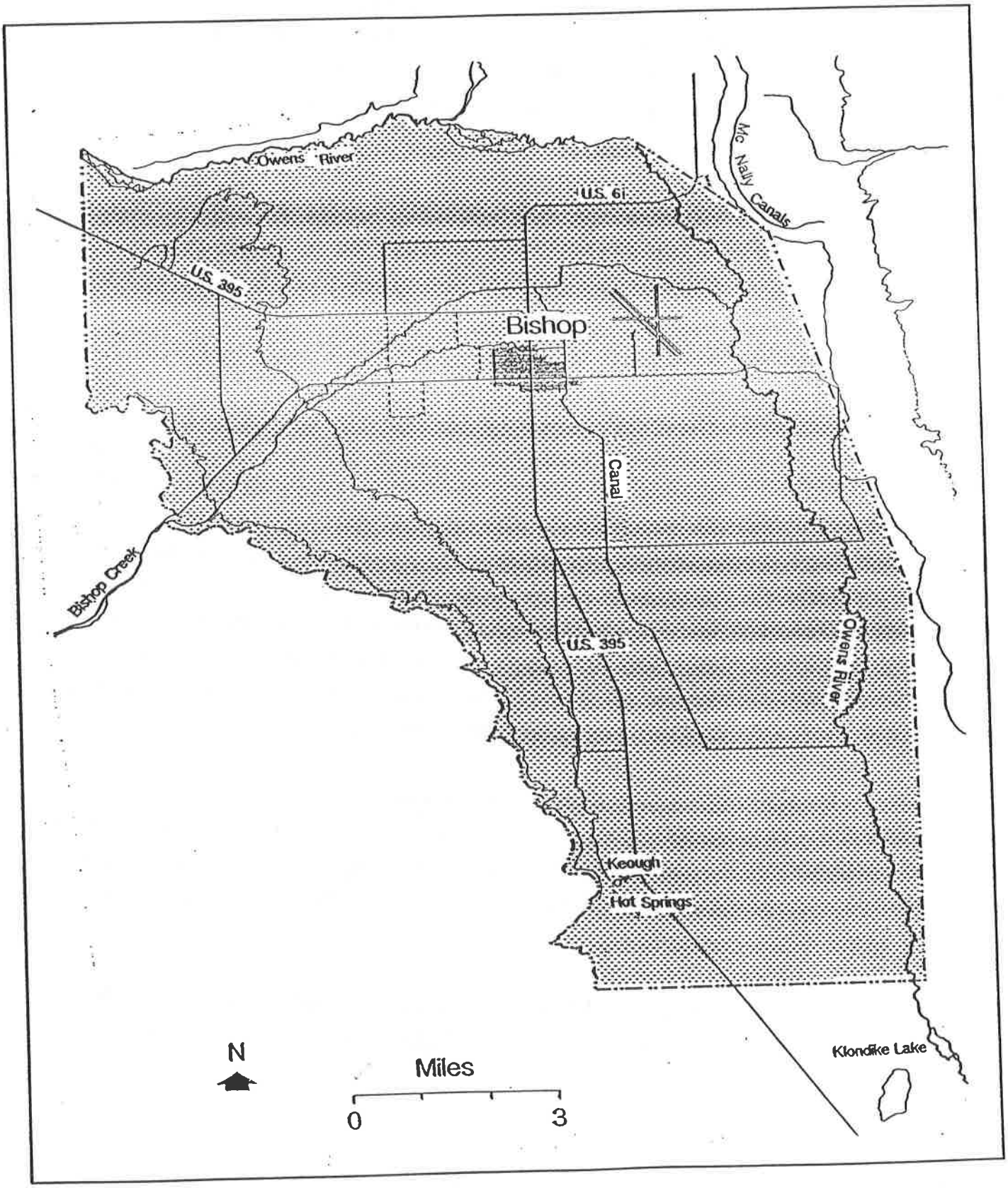
1. Procedures for Conducting the Bishop Cone Audit

a. For the purposes of the Bishop Cone audit, water usage on Los Angeles-owned land on the Bishop Cone is defined as the quantity of water supplied to such land, including conveyance losses, less any return flow to the aqueduct system. Water usage is documented on a runoff-year basis and is compiled by LADWP each May in the Bishop Area Water Use Report. At the conclusion of each runoff year, LADWP will forward the final water use report for the runoff year to Inyo County.

b. The final water use report will be compared for consistency with the previous year's report. If measuring stations have been added or removed from the water-use report during the year, or if a significant change in the pattern of water usage occurs (for example, an account that has not received water for one year receives a

FIGURE IV.D.1

Bishop Cone Boundary



considerable amount the next year), the location will be field-checked. The field-check will evaluate whether changes in water usage warrant the changes noted in the report. If a change is made in the method of delivery to or return from an account that results in an overestimation of uses on the Bishop Cone, water usage for that account will not be credited to the total uses for the audit.

c. Water usage for accounts BAIND (Bishop Indian Reservation), BA391 (outside of Bishop Cone boundary), and BAWEST (West Bishop private uses) will be subtracted from the total reported water usage.

d. Total groundwater extraction by LADWP will be compared with the corrected water usage on the Bishop Cone for the runoff year. Total groundwater extraction is defined as the sum of all groundwater pumped by LADWP plus the amount of artesian water that flowed out of uncapped wells on the Bishop Cone during the runoff year. During any runoff year, total groundwater extraction by LADWP on the Bishop Cone shall not exceed water usage on Los Angeles-owned land on the Cone.

e. A draft report summarizing the results of the Bishop Cone audit will be prepared annually as an Inyo County Water Department report and will be submitted to the Technical Group in June for a 30-day review.

f. A final Bishop Cone audit report will be submitted in July to the Technical Group, the Standing

Committee, the Inyo County Board of Supervisors, and the Inyo County Water Commission.

LADWP will notify Inyo County of any changes in the status, location, or operation of any measuring station used to conduct the Bishop Cone audit at the time the final Bishop Area Water Use Report is submitted to the County. LADWP will also notify the County of any changes in the boundaries of the accounts included in the audit.

Upon request by Inyo County, LADWP will provide measuring station data for accounts included in the audit to assist the County in verifying water usage for individual accounts.

APPENDIX C

Data on Uses and Total Groundwater Extracted on the Bishop Cone
(Supplied by LADWP)

2016/17 RUNOFF YEAR BISHOP CONE PUMPING WELL TOTALS

(ACRE-FEET)

	2016									2017			
WELL	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	TOTAL
W140	201	198	196	201	200	189	0	0	0	0	0	54	1239
W371	73	74	71	73	71	68	72	70	72	34	0	0	678
W406	200	207	172	202	198	187	15	0	0	21	0	0	1202
W407	165	147	165	170	169	159	0	0	0	0	0	0	975
W408	201	206	204	199	194	180	0	0	0	0	0	0	1183
W410	206	212	206	211	211	203	211	205	211	120	0	0	1997
W411	241	251	243	251	249	235	0	0	0	0	0	0	1469
W412	206	212	206	211	211	203	211	205	211	120	0	0	1997
TOTAL	1494	1508	1461	1518	1502	1423	509	480	494	296	0	54	10739

2016/17 RUNOFF YEAR BISHOP CONE FLOWING WELL TOTALS

(ACRE-FEET)

	2016									2017			
WELL	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	TOTAL
F121	3	3	3	3	3	3	3	3	3	3	3	3	36
F122	5	5	4	5	4	5	5	5	5	4	4	5	57
F123	12	12	10	11	10	12	14	16	11	10	10	11	138
F124	0	0	0	0	0	0	0	2	24	39	3	0	68
F125	90	92	87	89	89	87	90	90	95	91	85	97	1082
F126	22	24	22	23	21	22	29	27	24	22	19	22	278
F127	34	33	32	35	32	30	31	31	34	33	32	42	397
F128	22	23	21	23	23	22	22	22	24	23	21	24	268
F129	7	8	8	8	9	7	7	6	7	7	5	6	86
F130	31	32	30	30	30	30	32	31	34	32	31	42	386
F131	51	54	51	52	52	49	51	50	53	54	50	58	625
F132	27	27	25	27	28	29	31	30	34	33	28	34	354
F133	25	26	25	25	25	24	25	25	27	26	23	29	303
F134	46	44	42	43	41	41	46	47	50	51	48	58	558
F136	4	4	3	2	1	1	2	4	4	5	6	10	48
TOTAL	379	386	363	375	369	362	389	391	429	434	369	441	4685

LOS ANGELES DEPARTMENT OF WATER AND POWER
NORTHERN AQUEDUCT OPERATIONS

BISHOP CONE AUDIT USE REPORT 2016-17
FLOWS ON AND OFF LEASES IN ACRE-FEET

STAID	STATION NAME	+/-	2016 APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2017 JAN	FEB	MAR	TOTAL APR-MAR
BC005A															
3049	#161 OTEY		84	76	80	69	64	46	40	51	55	47	42	60	714
3377	OTEY DITCH RETURN AT MATLICK DITCH	(-)	78	72	62	64	64	47	43	49	50	49	41	55	674
			6	4	18	5	1	-1	-2	2	6	-2	1	5	43
BC005B															
3378	OTEY DITCH DIV. ABOVE MATLICK DITCH		6	5	5	4	6	9	1	0	0	0	0	0	36
			6	5	5	4	6	9	1	0	0	0	0	0	36
BC006A															
3048	#61-A FRANK ROUFF		25	38	70	44	28	26	11	15	15	15	35	51	373
3063	DUGGAN DITCH FLOW THROUGH	(-)	16	29	60	35	20	18	5	9	9	9	29	45	284
			8	10	10	9	8	8	6	6	6	6	6	6	89
BC1478															
3002	GEORGE DITCH W. OF SUNLAND AVENUE		41	40	53	53	65	33	21	21	31	24	25	41	448
3264	NORTH INDIAN DITCH BELOW A-1 DRAIN B3A		133	242	220	208	194	198	164	105	43	59	70	69	1705
3068	GEORGE DITCH C-3	(-)	12	23	26	32	33	23	15	15	17	18	18	24	256
3370	NORTH INDIAN DIVERSION W/O SUNLAND	(-)	7	12	1	8	10	0	0	0	0	0	0	1	39
3364	NORTH INDIAN DITCH W/O HWY 395	(-)	88	219	175	105	191	150	158	92	29	54	64	56	1381
			68	29	71	117	24	58	13	20	29	11	12	30	482
BC1479															
3025	SOUTH INDIAN DITCH DIVERSION #3		0	1	1	1	1	1	0	0	0	0	0	0	5
			0	1	1	1	1	1	0	0	0	0	0	0	5
BC301															
3396	NELLIGAN DIV. #1		210	172	131	182	276	154	37	35	71	86	113	176	1643
3397	NELLIGAN BELOW DIV. #1		47	66	85	77	109	93	51	52	43	25	61	101	810
3401	YOUNG DITCH #2		66	62	79	56	127	81	44	66	43	45	53	78	800
3421	TOM KEY DITCH ABOVE DIVERSION		42	41	34	48	54	46	35	16	15	32	26	38	427
3050	HOLLAND #63-B	(-)	20	20	21	33	40	37	27	30	22	12	24	30	316
3404	NELLIGAN DITCH #2	(-)	165	175	172	159	246	152	55	54	88	94	152	189	1701
3402	YOUNG DITCH #3	(-)	42	48	69	39	92	46	43	61	41	40	45	61	627
3407	YOUNG DITCH #4	(-)	0	1	1	0	1	1	0	0	0	0	0	0	4
3422	TOM KEY DITCH BELOW DIVERSION	(-)	35	38	30	41	49	42	34	16	13	27	27	33	385
			103	59	36	91	137	98	7	8	8	15	4	80	646
BC302A															
3006	HALL DITCH @ GOLF COURSE RETURN		27	19	31	29	18	10	0	0	0	0	0	44	178
			27	19	31	29	18	10	0	0	0	0	0	44	178
BC302B															
3161	BISHOP CK DITCH #16		37	66	50	47	58	68	19	18	4	19	43	107	536
3162	BISHOP CK DITCH #17		78	38	45	56	0	82	0	0	15	0	0	29	343
3164	BISHOP CK DITCH #20		22	55	56	63	77	48	32	36	29	13	43	76	550
3165	BISHOP CK DITCH #21		0	0	0	0	0	0	0	0	0	0	0	29	29
			137	159	151	165	135	197	50	54	48	32	86	241	1455
BC304															
3026	NEWLON DITCH BOYD PUMP PLANT		3	5	5	4	39	24	12	1	0	0	0	0	93
			3	5	5	4	39	24	12	1	0	0	0	0	93
BC311															
3166	BISHOP CK DITCH #5		110	84	54	53	76	80	0	0	0	0	0	240	697
3022	BISHOP CK DITCH #5-A		48	85	88	51	83	80	0	0	0	0	0	175	610
3167	BISHOP CK DITCH #9		46	59	84	97	62	0	0	0	0	0	107	121	576
3168	BISHOP CK DITCH #30		373	326	283	250	285	290	59	64	64	73	257	158	2482
3392	FORD RAWSON-DIV 1A		0	8	2	6	12	7	1	0	0	0	0	3	39
			577	562	511	458	519	457	60	64	64	73	364	696	4405
BC313															
3016	NORTH INDIAN DITCH ABOVE MUMY LANE #58-E		334	630	721	724	788	352	391	208	158	221	283	424	5234
3017	WONACOTT A-2		29	52	83	79	80	30	53	39	35	36	43	64	623
3015	WONACOTT A-1	(-)	58	92	119	124	128	43	62	47	42	40	50	67	872
3054	WONACOTT A-3 RETURN	(-)	3	21	32	31	26	9	8	13	22	23	21	32	241
3051	WONACOTT #58-F	(-)	29	33	43	47	49	24	39	23	11	8	15	24	345
3018	NORTH INDIAN B-2	(-)	219	386	432	447	523	226	260	115	81	148	163	183	3183
			54	150	178	154	142	81	75	49	37	38	77	182	1217

STAID	STATION NAME	+/-	2016 APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2017 JAN	FEB	MAR	TOTAL APR-MAR
BC324															
3370	NORTH INDIAN DIVERSION W/O SUNLAND		7	12	1	8	10	0	0	0	0	0	0	1	39
3270	SOUTH INDIAN D-3		195	274	316	301	272	111	47	47	87	79	68	138	1935
3005	SOUTH INDIAN DITCH D-4	(-)	74	50	108	47	57	55	31	41	66	39	24	26	618
			128	236	208	263	225	55	17	7	21	40	44	113	1357
BC335															
3402	YOUNG DITCH #3		42	48	69	39	92	46	43	61	41	40	45	61	627
3407	YOUNG DITCH #4		0	1	1	0	1	1	0	0	0	0	0	0	4
3403	YOUNG DITCH RETURN TO NELLIGAN	(-)	14	16	29	11	40	28	36	42	39	36	42	29	362
			28	33	41	28	53	18	7	20	2	4	3	32	269
BC338															
2026	FORD RAWSON CANAL BELOW BISHOP CK CANAL		598	638	674	829	1010	182	0	0	0	16	622	376	4945
3368	RAWSON & KEOUGH DITCH E/O HWY 395		33	40	22	18	15	18	23	19	22	29	28	32	299
2004	FORD RAWSON CANAL DIV. #7	(-)	93	106	182	299	260	0	0	0	0	5	142	178	1265
2043	YRIBARREN RETURN #2	(-)	--	--	--	--	--	--	--	--	--	--	--	--	--
3369	RAWSON & KEOUGH DITCH RETURN AT A-DRA	(-)	10	13	2	1	2	1	1	1	0	21	13	7	72
			528	558	513	548	763	200	22	18	22	19	495	222	3908
BC339															
3170	KINGSLEY C-1		81	82	51	78	76	40	17	18	19	16	47	134	659
			81	82	51	78	76	40	17	18	19	16	47	134	659
BC353															
3015	WONACOTT A-1		58	92	119	124	128	43	62	47	42	40	50	67	872
3053	TOMMY SMITH DITCH #162-A		22	24	28	7	21	1	0	0	0	0	18	40	161
3017	WONACOTT A-2	(-)	29	52	83	79	80	30	53	39	35	36	43	64	623
			51	65	64	51	69	13	9	8	7	4	26	43	410
BC361A															
3036	NORTH FORK BISHOP CREEK I-1(#155 STANLEY MA		22	161	136	138	124	99	37	25	22	11	41	68	884
3004	BISHOP CK N. FORK I-2		0	0	0	0	0	0	0	0	0	0	19	243	262
3316	IRRIGATION FROM WELL #406		56	114	91	105	42	18	0	0	0	0	0	0	426
3042	TATUM RETURN AT HIGHWAY 6	(-)	7	6	26	37	9	7	0	0	0	0	0	60	152
3039	TATUM RETURN AT BISHOP CK CANAL	(-)	26	20	25	23	14	18	18	24	30	52	56	56	362
			45	249	176	182	143	93	19	1	-8	-40	3	195	1057
BC361B															
3009	MATLICK DITCH F-10		94	291	263	243	240	204	64	55	52	48	73	180	1807
3040	MATLICK DITCH F-13 N		96	77	88	80	206	133	90	86	107	109	159	161	1392
3008	MATLICK DITCH F-13 E		15	51	42	54	47	35	18	12	20	5	14	38	351
3007	MATLICK DITCH F-14		14	13	12	9	17	12	7	4	5	6	6	12	117
3035	MATLICK DITCH #154		96	213	157	137	144	101	38	28	51	41	70	172	1248
3154	SCHILDER RETURN G-2	(-)	6	47	42	29	51	57	19	4	0	13	6	17	291
3037	MATLICK DITCH #63-A	(-)	19	61	47	40	49	52	26	26	34	57	40	27	478
3038	TATUM RETURN H-1	(-)	29	39	42	26	76	56	0	4	0	0	18	70	360
3003	MATLICK DITCH RETURN @ B-1 DRAIN	(-)	2	2	2	1	21	3	8	6	9	8	9	2	73
3010	MATLICK RETURN TO "C" DRAIN	(-)	18	6	8	0	0	4	70	87	105	121	180	89	688
			241	490	421	428	458	314	95	58	87	10	68	356	3026
BC362D															
3388	INDIAN S. RETURN ON SEE-VEE LANE		62	70	90	118	141	50	21	11	1	1	1	0	566
3389	INDIAN MIDDLE RETURN ON SEE-VEE LANE		5	16	2	2	0	0	0	0	0	0	0	0	25
3390	INDIAN N. RETURN ON SEE-VEE LANE		20	40	70	61	36	18	4	36	42	21	10	35	393
			86	126	162	180	178	68	26	47	43	21	11	35	983
BC387A															
3043	NORTH INDIAN DITCH B-3		47	68	58	109	152	104	0	0	0	0	22	7	567
3011	WEST LINE L-2		10	21	42	22	26	7	5	0	0	0	0	2	135
			57	89	99	132	179	111	5	0	0	0	23	8	703
BC392															
3387	MATLICK DITCH TO THE N.		99	149	146	137	135	81	32	23	35	34	43	150	1064
3398	MATLICK DITCH #1		106	332	364	264	303	178	83	154	164	180	231	385	2744
3399	REINHACKLE #1		14	157	159	158	124	40	58	80	58	44	58	105	1055
3400	YOUNG DITCH #1		80	28	35	37	45	31	1	1	0	1	0	28	287
3424	MCLAREN TAILWATER		51	71	79	65	107	68	43	68	42	46	55	79	774
3401	YOUNG DITCH #2	(-)	66	62	79	56	127	81	44	66	43	45	53	78	800
3406	C-DRAIN AT INTAKE	(-)	57	281	366	248	275	67	119	212	235	215	260	360	2695
3009	MATLICK DITCH F-10	(-)	94	291	263	243	240	204	64	55	52	48	73	180	1807
			133	103	75	116	74	45	-9	-6	-31	-4	2	128	626

STAID	STATION NAME	+/-	2016 APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2017 JAN	FEB	MAR	TOTAL APR-MAR
BC393															
3061	KINGSLEY DITCH PUMP DIV. AT DIV. #2		6	8	9	12	12	1	0	0	0	0	0	0	48
3171	BISHOP CK DITCH #11		0	29	23	0	0	0	0	0	0	0	40	3	95
			6	37	32	12	12	1	0	0	0	0	40	4	144
BC397															
3163	BISHOP CK DITCH #19		129	73	57	48	79	0	0	0	0	0	253	174	813
3174	BISHOP CK DITCH #22		84	148	81	72	77	0	0	0	0	0	132	139	733
3019	BISHOP CK CANAL DIV. #24		70	159	138	115	127	0	27	58	38	24	27	147	930
3020	BISHOP CK CANAL DIV. #25		0	0	92	41	56	0	0	0	0	0	39	53	281
3391	BISHOP CK CANAL DIV. 26A		94	12	165	223	180	8	1	0	0	0	0	85	768
3024	BISHOP CK CANAL DIV. #29		67	64	56	81	51	0	3	60	48	40	37	90	597
			444	456	588	580	570	8	30	117	86	64	487	688	4118
BC500															
3012	GEORGE DITCH C-1		93	64	91	89	106	34	17	16	19	20	25	48	622
3365	PARK W. RETURN S/O A-DRAIN		8	32	15	12	21	5	4	3	2	13	7	0	122
3047	4 X - 58D		55	125	214	166	182	158	234	206	226	179	250	277	2272
3366	SOUTH INDIAN DITCH DIVERSION #1 N/O SCHOBER		2	9	8	15	17	0	0	0	0	0	0	2	53
3367	SOUTH INDIAN DITCH DIVERSION #2 N/O SCHOBER		38	49	74	108	97	23	0	0	0	0	0	31	420
W408	WELL 408		201	206	204	199	194	180	0	0	0	0	0	0	1184
3002	GEORGE DITCH W. OF SUNLAND AVENUE	(-)	41	40	53	53	65	33	21	21	31	24	25	41	448
3046	SOUTH INDIAN RETURN AT A-1 DRAIN	(-)	0	0	11	14	12	221	179	128	113	79	159	99	1015
3270	SOUTH INDIAN D-3	(-)	195	274	316	301	272	111	47	47	87	79	68	138	1935
			162	171	225	220	268	34	7	29	16	30	31	81	1274
BC502A															
3027	HALL DITCH PUMP PLANT #2@DON TATUM LEASE(		0	0	0	0	0	0	0	0	0	0	0	0	0
3028	HALL DITCH PUMP PLANT #4 AT DON TATUM LEASE		0	0	4	88	57	56	41	4	0	0	0	45	295
			0	0	4	88	57	56	41	4	0	0	0	45	295
BC502B															
3031	A-1 DRAIN PUMP PLANT #1 S/O HALL DITCH		0	0	0	0	0	0	0	0	0	0	0	0	0
3032	A-1 DRAIN PUMP PLANT #3 AT WELL #140		142	87	102	151	142	116	21	0	0	0	0	44	805
			142	87	102	151	142	116	21	0	0	0	0	44	805
BCOPRB															
2086	A-DRAIN DIV. TO ARKANSAS FLATS		0	0	0	0	0	0	0	0	0	0	0	128	128
			0	0	0	0	0	0	0	0	0	0	0	128	128
BCRECA															
3155	BISHOP CK DITCH #5-B		0	0	0	0	0	0	208	115	105	62	376	294	1160
			0	0	0	0	0	0	208	115	105	62	376	294	1160
BCRECC															
3021	BISHOP CK CANAL DIV. #67		0	0	0	0	0	0	0	0	0	0	137	99	236
			0	0	0	0	0	0	0	0	0	0	137	99	236
BCRECD															
3194	SOUTH FORK BISHOP CREEK BELOW BISHOP CREI		350	492	552	526	732	512	681	418	432	307	433	410	5845
3193	SANDERS POND RETURN AT OWENS RIVER	(-)	0	20	0	0	0	0	103	49	122	154	174	56	678
3066	RAWSON POND #3 RETURN TO OWENS RIVER	(-)	139	191	187	178	361	247	186	139	92	89	85	170	2064
			211	281	365	348	371	265	392	230	219	65	174	185	3106
BCRECF															
3023	KINGSLEY DITCH DIV. C-4		103	87	107	103	119	95	57	36	33	37	67	97	941
3183	CEMETERY DITCH AT E. LINE ST.	(-)	37	34	54	33	43	56	50	32	4	1	0	18	362
			67	53	53	70	76	38	7	4	29	36	67	79	579
BCLAEMH															
3242	BISHOP CK CANAL DIV. TO 5 BRIDGES #2		0	7	142	120	0	199	0	0	0	45	289	258	1060
3317	BISHOP CK CANAL DIV. TO 5 BRIDGES #6		24	35	30	31	26	19	0	0	13	21	140	150	489
			24	41	172	151	26	218	0	0	13	65	429	408	1547
BCRV361B															
3102	HORTON CK E-7		0	0	221	149	0	0	0	0	0	0	0	0	370
			0	0	221	149	0	0	0	0	0	0	0	0	370
BCRVRECA															
3185	MCGEE CK AT ABERLOUR RANCH		235	240	186	160	150	152	170	177	167	224	353	375	2589
3235	MILL POND RETURN	(-)	80	83	78	89	98	96	94	106	97	159	115	117	1212
			155	157	108	71	52	56	76	72	69	65	238	258	1377

STAID	STATION NAME	+/-	2016 APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2017 JAN	FEB	MAR	TOTAL APR-MAR
Bishop Cone Account Total Uses															
BC005A			6	4	18	5	1	-1	-2	2	6	-2	1	5	43
BC005B			6	5	5	4	6	9	1	0	0	0	0	0	36
BC006A			8	10	10	9	8	8	6	6	6	6	6	6	89
BC1478			68	29	71	117	24	58	13	20	29	11	12	30	482
BC1479			0	1	1	1	1	1	0	0	0	0	0	0	5
BC301			103	59	36	91	137	98	7	8	8	15	4	80	646
BC302A			27	19	31	29	18	10	0	0	0	0	0	44	178
BC302B			137	159	151	165	135	197	50	54	48	32	86	241	1455
BC304			3	5	5	4	39	24	12	1	0	0	0	0	93
BC311			577	562	511	458	519	457	60	64	64	73	364	696	4405
BC313			54	150	178	154	142	81	75	49	37	38	77	182	1217
BC324			128	236	208	263	225	55	17	7	21	40	44	113	1357
BC335			28	33	41	28	53	18	7	20	2	4	3	32	269
BC338			528	558	513	548	763	200	22	18	22	19	495	222	3908
BC339			81	82	51	78	76	40	17	18	19	16	47	134	659
BC353			51	65	64	51	69	13	9	8	7	4	26	43	410
BC361A			44	249	176	182	143	93	19	1	-8	-40	3	195	1057
BC361B			241	490	421	428	458	314	95	58	87	10	68	356	3026
BC362D			86	126	162	180	178	68	26	47	43	21	11	35	983
BC387A			57	89	99	132	179	111	5	0	0	0	23	8	703
BC392			133	103	75	116	74	45	-9	-6	-31	-4	2	128	626
BC393			6	37	32	12	12	1	0	0	0	0	40	4	144
BC397			444	456	588	580	570	8	30	117	86	64	487	688	4118
BC500			162	171	225	220	268	34	7	29	16	30	31	81	1274
BC502A			0	0	4	88	57	56	41	4	0	0	0	45	295
BC502B			142	87	102	151	142	116	21	0	0	0	0	44	805
BCOPRB			--	--	--	--	--	--	--	--	--	--	--	128	128
BCRECA			0	0	0	0	0	0	208	115	105	62	376	294	1160
BCRECC			0	0	0	0	0	0	0	0	0	0	137	99	236
BCRECD			211	281	365	348	371	265	392	230	219	65	174	185	3106
BCRECF			67	53	53	70	76	38	7	4	29	36	67	79	579
BCLAEMH			24	41	172	151	26	218	0	0	13	65	429	408	1547
BCRV361B			0	0	221	149	0	0	0	0	0	0	0	0	370
BCRVRECA			155	157	108	71	52	56	76	72	69	65	238	258	1377
BCAUDIT			3577	4316	4696	4882	4821	2691	1212	944	895	629	3251	4865	**36779**