

***MINUTES OF A SPECIAL MEETING WORKSHOP OF
BIG BEAR MUNICIPAL WATER DISTRICT
HELD ON WEDNESDAY, OCTOBER 31, 2013***

The Open Session workshop began at 10:30 AM. Those in attendance included President Smith, Director Murphy, Director Lewis, Director Suhay, Director Eminger, General Manager Scott Heule, Water Management Engineer Don Evenson, and Board Secretary Vicki Sheppard.

Big Bear Municipal Water District Workshop to discuss the Proposed In-Lieu Water Agreement Amendment

Mr. Heule reported that next week Wednesday, November 6th, there will be a joint workshop with San Bernardino Valley Municipal Water District to discuss the proposed In-lieu Water Agreement Amendment explaining that the reason for today's workshop is to go over the proposal and to answer questions before next week's meeting.

Mr. Evenson made a PowerPoint presentation (copy attached).

Many questions were asked and answered but it was determined that two issues need to be clarified for next week's meeting:

1. What constitutes an emergency
2. Emergency versus Operational accounts

Mr. Evenson explained that the draft term sheet presented here is a first attempt to put something on paper to discuss at the upcoming workshop.

Discussion only – no action.

ADJOURNMENT

There being no further business, the workshop was adjourned at 12:27 PM.



Vicki Sheppard

Secretary to the Board

Big Bear Municipal Water District

(SEAL)

In-Lieu Water Agreement with San Bernardino Valley MWD 1996 - 2013

Big Bear MWD Board Workshop
October 31, 2013

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1996 In-Lieu Agreement

- 1996 – Big Bear and Valley District entered into an In-Lieu Agreement for Valley District to deliver In-lieu water to Mutual beginning in FY 1996-97 following the 1987 Mutual Lake Release Policy.
- The “base cost” of the In-Lieu Agreement was \$834,000 a year for the first ten fiscal years.
- Beginning in FY 2006-07 the “base cost” was adjusted for changes in AV relative to FY 2004-05
- The annual In-Lieu cost reached a maximum in FY 2009-10 at \$1,281,000

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1996 In-Lieu Agreement

- The current (FY 2013-14) annual In-Lieu cost is \$1,220,000.
- Beginning in FY 2017-18 there will be an increase in the “base cost” from \$834,000 to \$895,000 that could increase the annual In-Lieu cost an additional \$80,000 to \$100,000 per year depending on the AV at the time.
- The 1996 In-Lieu Agreement has been modified four times
 - 1999 for repairs to the Greenspot Pipeline
 - 2006 for impacts of Big Bear’s Flood Control Drawdown Policy
 - 2006 for Big Bear’s revised Snowmaking water sales contract
 - 2012 for connections to the SWP East Branch Extension and to evaluate alternative in-lieu storage concepts.

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1999 Memorandum of Understanding

- 1999 – Big Bear and Valley District entered into a Memorandum of Understanding that modified the In-Lieu Agreement for two years to provide assurances that Valley District could meet their high elevation In-Lieu obligations while their Greenspot Pipeline was under repair.
- 2001 – The MOU was extended for two years, until the end of 2002.

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1999 Memorandum of Understanding

- In 1999 Valley District delivered an extra 3,501 AF of In-Lieu water to Mutual, which increased lake levels about 1.2 feet.
- During the four years of the MOU, Valley District did not need any of the water stored in the lake for “high elevation” In-Lieu requirements.
- Increased evaporation from the lake over the four years of the MOU was estimated to be 893 AF.
- Big Bear got the balance of 2,608 AF at the end of 2002 and the MOU was terminated.

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2003-04 In-Lieu Studies

- To better analyze in-lieu needs, Big Bear, Valley District and Mutual jointly conducted a Lake Management Study.
- They agreed to use water years and a 53-year period between October 1945 and September 1998 that included three wet and dry cycles with the lake full at the beginning and end of the 53-year period.
- During this 53-year period, the average annual in-lieu deliveries was estimated to be 2,815 AF/year assuming the Mutual Lake Release Policy was followed.

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2006 Flood Control Release Policy

- 2006 – Big Bear adopted a flood control release policy to maintain lake levels one foot below full between December 31 and March 31.
- Estimated long-term average In-Lieu Deliveries increased from 2,815 to **2,895 AF/year, an increase of 80 AF/year.**
- The cost of In-Lieu Water was priced at \$150/AF.
- The increase in the “base cost” of the In-lieu Agreement was \$12,000 per year.
- Adjusted for changes in AV this increase is now about **\$17,000 per year.**

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2006 Snowmaking Water Sales

- 2006 –Big Bear entered into an agreement to increase the annual snowmaking withdrawal to up to 11,000 AF in any ten-year period, not to exceed 1,300 AF in any single water year.
- Estimated long-term average In-Lieu Deliveries increased from 2,895 to **2,914 AF/year, an increase of 19 AF/year.**
- The cost of In-Lieu Water was priced at \$150/AF.
- The increase in the “base cost” of the In-lieu Agreement was \$2,850 per year.
- This increase after adjusting for AV changes is now about **\$4,000 per year.**

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2010 In-Lieu Concept Discussions

- Big Bear and Valley District held further discussions to determine if the In-Lieu Agreement could be modified to:
 - Increase water levels in Big Bear Lake during the summer recreation season (between Memorial Day and Labor Day), and
 - Provide Valley District water in storage in Big Bear Lake for “emergency” purposes.
- The goal was an operational plan that would be beneficial to both agencies and would not change the existing cost of the In-Lieu Agreement.
- The discussions were put on hold before any detailed discussions or evaluations on the limitations of storage and releases were held.

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2012 Discussions/Concepts

- Valley District expressed interest in resuming the 2010 discussions on the In-Lieu Agreement.
- Valley District has an interest in water storage in Big Bear Lake, improving on the 1999 MOU experience.
- A concept that would eliminate summer lake releases for Mutual, better manage fall deliveries to Valley District, provide storage opportunities for Valley District and reduce In-Lieu costs would be developed and evaluated.

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July 2012 In-Lieu MOU

- Big Bear and Valley District entered into an In-Lieu MOU effective July 1, 2012 through December 31, 2013.
- Valley District informed Big Bear that due to construction of the East Branch Extension of the SWP, elements of Valley District's water delivery system would be out of service in 2013 and they may not be able to deliver In-Lieu Water to Mutual during a portion of the year.
- Valley District agreed to deliver In-Lieu water to Mutual during times when Big Bear would normally make lake releases for Mutual and Big Bear agreed to give them storage credit in the Lake for these supplemental In-Lieu deliveries.

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July 2012 In-Lieu MOU

- Additional evaporation resulting from the higher lake levels would be deducted from Valley District's lake storage account.
- Big Bear agreed to release water from Valley District's lake storage account as needed to meet Mutual's In-Lieu needs.
- Big Bear and Valley District agreed to examine changes to the 1996 In-Lieu Agreement that would create additional benefits for each party.

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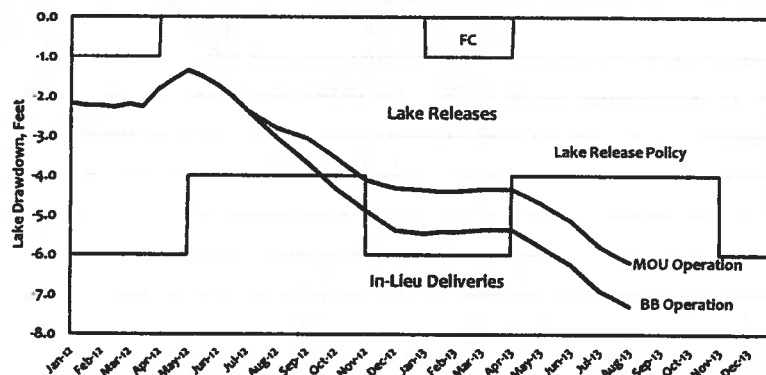
Status of July 2012 In-Lieu MOU

- Status as of **September 30, 2013**
- **Valley District has delivered 3,291 AF of supplemental In-Lieu water** to Mutual when Big Bear normally would have made lake releases for Mutual.
- Additional evaporation from the higher lake levels has been 270 AF.
- Big Bear released 605 AF for Valley District in the Test Release Program in September.
- **Big Bear Lake is 0.94 feet higher** than it would have been if the Lake Release Policy had been followed.
- **Valley District has 2,416 AF of water** in their lake account.

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Lake Levels Under MOU and Big Bear Lake Release Policy

Big Bear Lake Levels 2012 and 2013



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Status of July 2012 In-Lieu MOU

- A test release plan has been conducted to evaluate the capability to control, measure and capture lake releases that would occur under the conditions of the draft term sheet.
- An estimate of the decrease in In-Lieu delivery requirements and costs as a result of SWRCB Order No. 95-4 has been completed.
- A draft “term sheet” for an amendment to the 1996 In-Lieu agreement has been developed for discussion purposes.

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Test Release Plan

- A “test release plan” has been conducted to evaluate the capability to control future Valley District releases, to accurately measure the releases, and to determine how much of the releases will reach a point where Valley District can divert the flow.
- The releases were made through the 14-inch sluice gate on the Outlet Works of Bear Valley Dam.
- Releases were measured by the 36-inch electromagnetic flow meter in the Outlet Works.
- Downstream flow measurements were made at Station A on Bear Creek and at SCE SAR AVM to estimate losses between Bear Valley Dam and SCE PH#1.

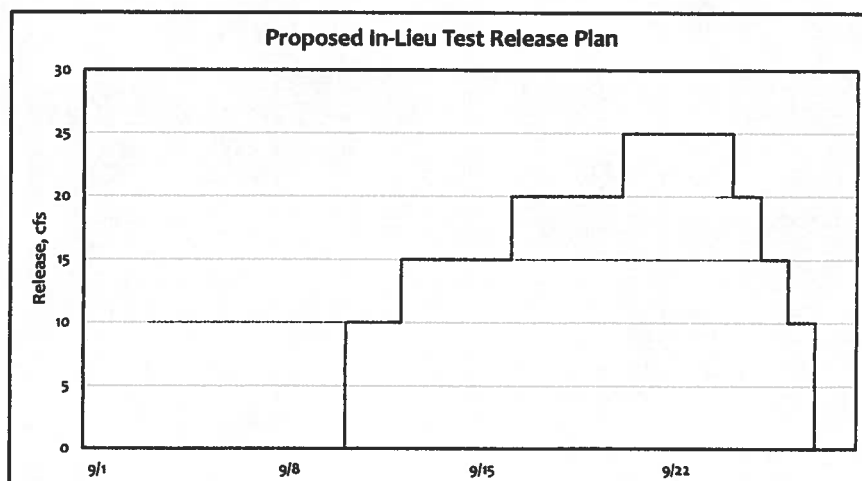
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Test Release Plan

- The release rates covered the expected range of “emergency” releases when Valley District would not be able to deliver In-Lieu water to Mutual; this flow range is estimated to be 15 to 25 cfs.
- The test release plan began Tuesday September 10 and ended on Friday September 27; a duration of 18 days.
- Approximately 605 AF of water was scheduled to be released.
- The lake level was estimated to drop about 3 inches.

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Test Release Plan



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Results of Test Release Plan

- Big Bear successfully implemented the Test Release Plan and **605 AF of water was released** from Valley District's Lake Storage Account.
- The Test **Releases lowered the lake level about 2 ¾ inches.**
- The releases placed some stress on the 14-inch sluice gate due to the high pressure and low discharge rates; increasing the size of the Bypass Pipeline from 6 inches to 10 inches is under evaluation to avoid using the 14 inch sluice for flows under 25 cfs.

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Results of Test Release Plan

- Measurement problems were experienced at Station A, which is about 1 mile below Bear Valley Dam; approximately 60 % of the releases were measured at Station A. The data indicate that the weir measurements at Station A may result in calculated flows that are low.
- Based on data from the Daily Flow Reports, Big Bear estimated that 70% of the releases reached PH#1, which is 10 miles downstream of Station A.

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Results of Test Release Plan

- Valley District estimated that about 60% of the flow reached SCE SAR AVM and was diverted at PH #1 for beneficial use by Mutual, PH #1 is about 11 miles below Bear Valley Dam.
- Valley District and Big Bear will review the data and estimate how much of the releases went into temporary storage in the riverbed and how much was consumptively lost.
- To minimize consumptive losses and temporary riverbed storage, November to May appear to be preferable months for Operational Releases.

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Revised Fishery Requirements

- In 1995, SWRCB Order No. 95-4 directed Big Bear and Mutual to release enough water from Big Bear Lake to maintain a minimum daily average flow of 0.3 cfs at a location 300 feet downstream of Bear Valley Dam. This location is referred to as Station B.
- SWRCB Order 95-4 also required sufficient releases to maintain a minimum 7-day average flow of 1.2 cfs and a minimum daily average flow of 1.0 cfs no more than 500 feet downstream of the confluence with West Cub Creek. This location is referred to as Station A. Station A is 1 mile downstream of Bear Valley Dam.

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Revised Fishery Requirements

- The 1996 In-Lieu Agreement with Valley District estimated future in-lieu deliveries assuming the following releases would meet the requirements of SWRCB Order 95-4:

• January – May	0.40 cfs
• June – November	0.80 cfs
• December	0.40 cfs

These release rates resulted in annual fishery lake release of **428 AF/year**.

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Revised Fishery Releases

- Between 2004 and 2006, Big Bear, Valley District and Mutual conducted joint studies of alternative In-Lieu operations and revised the monthly Fishery Releases to vary by hydrologic (lake inflow) year type; the resulting releases varied between 0.40 and 0.80 cfs, and the resulting average annual fishery lake releases was **334 AF/year**.
- In 2006, Valley District and Big Bear adopted two Amendments to the In-Lieu Agreement using these fishery releases to increase the In-Lieu Costs.

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Revised Fishery Requirements

- In January 2009, the SWRCB adopted an Amendment to Order No. 95-4 that established flow requirements at Station B to achieve compliance with the requirements at Station A. The flow requirements were based on YTD precipitation at Bear Valley Dam and ranged between 0.30 and 1.25 cfs. The average annual release under these requirements are estimated to be **528 AF/year**.
- Recent data have shown that these requirements are not sufficient to meet the Station A requirements.

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Revised Fishery Requirements

- Big Bear has evaluated the data and developed revised flows at Station B that should keep Station A in compliance. The revised flows range from 0.30 cfs to 1.50 cfs depending on the precipitation at Bear Valley Dam and average **646 AF/year**.
- The increased fishery releases would reduce the projected average annual In-lieu deliveries and an Amendment to the 1996 Agreement would reduce the in-lieu costs.
- The following table shows the history of the in-lieu cost changes.

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History of In-Lieu Cost Changes

Situation	Average Fishery Release AF/Year	Average In-lieu Deliveries AF/Year	Base In-Lieu Cost Changes @ \$150/AF	FY 2012-13 In-Lieu Cost Changes @ 1.40
2004 Joint In-lieu Studies	334	2,815	\$834,000	\$ 1,166,881
2006 FC Release Amendment	334	+80 2,895	\$ 12,000 \$846,000	\$ 16,790 \$1,183,670
2006 Snowmaking Amendment	334	+19 2,914	\$ 2,850 \$848,850	\$ 3,988 1,187,658
2013 Proposed Fishery Release Amendment	646	-84 2,830	\$ (12,600) \$836,250	\$ (17,629) 1,170,029

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Draft Term Sheet

- Big Bear would allow Valley District to store water in Big Bear Lake for
 - Emergency Purposes (2,800 AF)
 - Operational Purposes (2,800 AF)
- Valley District would meet all of Mutual's needs for lake water between Memorial Day and Labor Day regardless of lake level and would get credit in their storage account for deliveries made when Big Bear would normally make lake releases for Mutual. Credits would go first to their Emergency Account, and when full would go to their Operational Account.

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Draft Term Sheet

- After Labor Day and before Memorial Day Valley District would have the option to also deliver In-Lieu water to Mutual during periods when lake releases would normally be made; storage credits would go to their Operational Storage Account.
- Spills and Flood Control Releases from Big Bear Lake would first come from Valley District's Operational Storage Account; when it is depleted, they would come from their Emergency Storage Account until it is depleted, then they would come from Big Bear's lake account.

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Draft Term Sheet

- Increased lake evaporation resulting from higher lake levels would be
 - Deducted from Valley District's storage accounts between Labor Day and Memorial Day, and
 - Shared 50-50 between Valley District and Big Bear between Memorial Day and Labor Day to reflect the benefits gained by each agency during the summer recreation season.
- Releases from Valley District's Emergency Storage Account could be made when
 - The **SWP Allocation to Valley District is less than 25,000 AF**, or
 - Operational problems would prevent Valley District from delivering In-lieu water to Mutual.

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Draft Term Sheet

- Releases from Valley District's Operational Storage Account could be made after Labor Day and before Memorial Day providing
 - the lake level is within 8 feet of full, and
 - Emergency Releases are not occurring.
- In the event of an "emergency" when Valley District's Emergency Storage Account is not full, Big Bear would make an "advance for emergency purposes" to ensure the full emergency amount (2,800 AF) is available; Valley District would repay the emergency advance with future supplemental In-Lieu deliveries.

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Draft Term Sheet

- To reflect the benefits of these changes in In-Lieu Policy
 - Valley District would waive the In-Lieu Cost increase scheduled for FY 2017-18; the estimated cost increase is \$80,000 to \$100,000 per year depending on AV at the time of the increase,
 - Valley District would reduce the In-Lieu costs by \$50,000 per year for FY 2014-15, FY2015-16, and FY 2016-17 while the amendment is being implemented and the storage accounts are being filled, and
 - Valley District and Big Bear would evaluate and adjust the In-Lieu requirements and costs resulting from changes in lake releases for fishery protection under SWRCB Order 95-4 as amended on January 8, 2009.

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Possible Next Steps

- Adopt Amendment for Revised Fishery Releases
- Prepare operational concepts to be evaluated.
- Complete evaluation of Test Release Plan
- Evaluate benefits and impacts of alternative operational concepts.
- Conduct additional Board Workshop(s)
- Select preferred concept
- Determine CEQA requirements
- Finalize draft term sheet
- Prepare Amendment to 1996 In-Lieu Agreement

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