

***MINUTES OF A REGULAR MEETING OF
BIG BEAR MUNICIPAL WATER DISTRICT
HELD ON THURSDAY, JULY 15, 2010***

CALL TO ORDER

President Fashempour called the Open Session to order at 1:00 PM. Those in attendance included Director Suhay, Director Smith, Director Murphy, District Counsel Wayne Lemieux (via Skype), General Manager Scott Heule, Lake Manager Mike Stephenson, and Board Secretary Vicki Sheppard.

REPORTS

General Manager, Scott Heule reported that he and four of the Directors (President Fashempour, Director Suhay, Director Eminger and Director Murphy), went to the ACOE Change of Command Ceremony and thought it was very successful. He commented that lake use on the July 4th holiday was a little down in numbers from last year. He added that the Chamber of Commerce reported that lodging did well over the holiday. He stated that he attended the North Shore Improvement Association meeting last night reporting that it went well. Mr. Heule reported that he attended the Chamber of Commerce meeting this morning and a representative from State Senator Dutton's office was there talking about what is going on in Sacramento. He added that the Chamber reports that they are going to be hosting a candidate public forum after Labor Day. Mr. Heule reported that he and Mr. Stephenson met with Anna Milloy and Jeff Brandt from Department of Fish & Game yesterday regarding the District's MOU with them. He stated that it was a very positive meeting adding that they seem willing to allow us permission to do whatever is needed. Mr. Heule reported that the trout pond is up for sale again.

Lake Manager, Mike Stephenson reported that the limnological report is very interesting. He explained that the lake is half stratified and the clarity and oxygen is good in some areas but the bottom has little to no oxygen. He added that the water temperature is at about 70 ° already. He commented that he would have more to report as the season progresses. Mr. Stephenson explained that they are running the aerator at the dam but haven't found it necessary to run the de-stratification unit as yet. President Fashempour asked if trout move as necessary to find the most advantageous area of water. Mr. Stephenson explained that they do move to the cooler parts of the lake as needed. He reported that weed treatments are going well adding that they are almost done treating. He stated that they will start harvesting in certain areas soon. He commented that the staff BBQ went very well. Mr. Stephenson reported that the bear-proof cans that were purchased with the Forest Service will be installed next week. He explained that 8 double cans (16 cans total) were purchased with the Forest Service (cost share 50/50) with the Forest Service doing the installation. He explained that participation in the carp tournament was up. Mr. Stephenson reported on the meeting with Department of Fish & Game explaining that they trust us to do what is best without specific approvals for each and every project. Director Smith asked when Fish & Game did the last fish plant. Mr. Stephenson reported that it was last Thursday. He added that they are doing approximately 2 ½ stockings per month. He added that they are not stocking many other lakes commenting that Big Bear Lake is very lucky.

District Counsel Wayne Lemieux reported that at the last Board meeting they met in closed session regarding the Conroy matter adding that her request was denied and there is no reportable action.

APPROVAL OF CONSENT CALENDAR

Mr. Heule explained that the Warrant List was very large due to the check to Bear Valley Mutual adding that it was half of what it was last year however.

Upon a motion by Director Suhay, seconded by Director Murphy, the following consent items were unanimously approved:

- Minutes of a Regular Meeting of June 17, 2010
- Minutes of a Special Meeting of June 21, 2010
- Warrant List Dated July 9, 2010 for \$1,588,434.52
- Approval of the Notice of Completion of the Carol Morrison East Public Launch Ramp Paving and Decontamination Station Construction
- Approval of CSDA Board of Directors Election
- Approval of CSDA By-Laws changes

District Counsel Wayne Lemieux left the meeting at 1:26 pm

UPDATE ON ARMY CORPS OF ENGINEERS EXOSYSTEM RESTORATION STUDY PRESENTATION ONLY, NO ACTION

Kathleen Bergmann and Dr. Josephine Axt made a presentation to the Board (copy attached).

Ms. Bergmann stated that they are tentatively recommending Alternative 4. She explained that if a proposal has a recreational element in it, it would probably not be allowed since it needs to be Ecosystem Restoration and not recreational. Ms. Bergmann discussed the alum treatments and reclaimed water asking if they are really needed in the proposals. It was the consensus of the Directors that alum treatments should probably be removed but it was decided that a workshop meeting should be held to make a final decision about reclaimed water.

Mr. Pete Gwaltney, General Manager of Big Bear Airport, came to observe the meeting. He added that some of the options presented would involve enlarging migrating bird populations which could present a problem to the airport. He stated that he felt the District and ACOE needed to make a presentation to the Airport Board of Directors.

Mr. Heule asked what the next step should be with the Airport.

Ms. Bergmann stated that they would need to get together with District Committees and then make a presentation to the Airport Board.

Dr. Axt asked Mr. Gwaltney if he could send them information on migrating birds. Mr. Gwaltney stated that he would.

Mr. Heule stated that he would get together study materials and have the airport information available for a workshop. President Fashempour and the Directors determined that a special workshop should be scheduled the last week in July.

ANNOUNCEMENTS

Mr. Heule reported that he would taking Friday off to go to Parker AZ. He added the Mr. Stephenson would be taking a few days off next week to go on a fishing trip.

DIRECTOR COMMENTS

Director Murphy reported that the Paddlefest seemed to go very well. President Fashempour commented on the staff barbeque stating that she appreciated all of the staff participation.

ADJOURNMENT

There being no further business, the meeting was adjourned at 3:04 P.M.

NEXT MEETING

Open Session at 1:00 P.M.
Thursday, August 5, 2010
Big Bear Municipal Water District
40524 Lakeview Drive, Big Bear Lake, CA




Vicki Sheppard
Secretary to the Board
Big Bear Municipal Water District


(SEAL)

Big Bear Lake Ecosystem Restoration Study

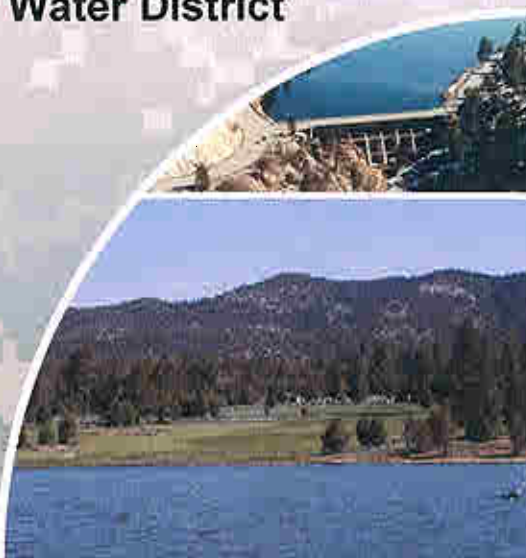
Big Bear Municipal Water District Board Meeting

15 July 2010







US Army Corps of Engineers
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Problems & Opportunities

- Pre-dam, the basin supported a 6000 acre marsh/meadow complex with a 500-1000 acre semi-perennial lake
- Aquatic
 - Non-native vegetation displacing native aquatic species
 - High nutrient levels
 - Carp out competing more desirable fish species
 - Changing natural ecosystem (changing or being changed)
 - Summer algae blooms and lack of water clarity
- Marsh, Meadow, Riparian
 - Remaining marsh/meadow/riparian habitats disappearing
 - Impact of development on adjacent riparian zones increasing erosion
 - Exotic vegetation establishment near development





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Study Assumptions

- The dam and existing lake are vital to the region and will not be removed
- Tributaries on the North shore are trapping sediment at an acceptable rate
- Tributaries on the South shore are degrading
- Restoration of the surrounding shoreline and watershed will improve the lake ecosystem
- Fires have not yet significantly affected the lake
- Restoration goals must follow Corps guidelines
- Reclaimed water will be available



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STUDY OBJECTIVES

Objectives		
Restore Lacustrine Ecosystem	Restore multi-tiered self-sustaining warm & cold water fishery	0.052
total = 0.258	Restore native aquatic plant community	0.193
	Restore/improve migratory waterfowl habitat	0.073
	Restore/improve shoreline marsh/meadow area	0.100
Restore Shoreline Riparian Ecosystem	Restore/improve shoreline riparian areas	0.095
total = 0.309	Restore/improve raptor bird habitats	0.054
	Restore/improve tributary creek habitat for amphibians	0.117
	Restore/improve riparian habitat for migratory birds	0.114
Restore Riparian Ecosystem on Tributaries	Restore/improve marsh and meadow habitat on tributaries	0.202
total = .433		1.00

Objectives were weighted and this was used to evaluate measures and alternatives using for Effectiveness.

This allow us to screen an initial array of 67 alternatives down to 13 for quantative analysis



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Preliminary Array

1. No Action Alternative

Comprehensive Alternatives:

2. Comprehensive Alternative A

3. Comprehensive Alternative B

Lake Alternatives:

4. Lake

5. Lake and Shoreline

6. Lake and Marsh

7. Lake and Meadow

8. Lake and Riparian

Shoreline Alternative:

9. Shoreline

Meadow Alternatives:

10. Meadow and Lake

11. Meadow and Riparian

Vegetation Restoration Alternatives:

12. Aquatic Plant

13. Invasive Removal and Restoration



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Costs & Habitat Analysis

Plan	Cost w/o O&M & Real Estate	Cost w/o O&M but w/ Real Estate	O&M Only		Total Acres	Initial Uplift (Ha)	Secondary Uplift (Ha)	TOTAL UPLIFT
Alt. A	\$49,644,118.53	\$78,498,518.53	\$ 408,838.00	Alt.2 Comprehensive A	2832.53	413.8	109.8	623.6
Alt. B	\$133,850,485.51	\$182,746,281.51	Max \$1,325,251.00	Alt.3 Comprehensive B	3102.89	1079.1	206.2	1275.4
4	\$82,986,687.54	\$71,608,624.54	\$ 988,180.00	Alt.4 Lake	2871.30	1818.8	213.8	1732.7
5	\$101,936,429.96	\$114,155,467.36	\$ 1,144,682.00	Alt.5 Lake and Shoreline	3029.74	1654.3	204.4	1758.7
6	\$87,976,030.68	\$108,090,196.68	\$ 234,624.00	Alt.6 Lake and Marsh	1273.96	168.8	106.1	274.9
7	\$50,732,068.33	\$78,837,390.33	\$ 490,886.00	Alt.7 Lake and Meadow	1141.80	95.1	100.1	195.2
8	\$96,510,821.06	\$125,080,046.06	\$ 1,090,347.00	Alt.8 Lake and Riparian	2834.26	1694.3	196.0	1890.6
9	\$57,686,568.04	\$61,288,003.04	\$ 298,899.00	Alt.9 Shoreline	680.73	78.7	5.1	84.0
10	\$47,833,085.53	\$71,443,032.53	\$ 479,245.00	Alt.10 Meadow and Lake	1177.83	74.3	107.7	182.0
11	\$18,286,400.45	\$46,841,990.45	\$ 330,473.00	Alt.11 Meadow and Riparian	328.36	46.2	8.5	40.2
12	\$24,402,281.12	\$33,131,315.12	Min \$ 143,608.00	Alt.12 Aquatic Planting	486.29	18.5	5.1	71.8
13	\$29,445,295.71	\$58,024,589.71	\$ 318,608.00	Alt.13 Invasive Removal	678.08	89.8	8.0	89.4



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Alternative 3 – Includes All Measures except pumps & pipelines, soil caps, alum, carp management (Stanfield Marsh uses pumped water) – Best Buy



Legend

- Marsh Pump
- Solar Pump
- Trash Pipeline
- Tributary Pipeline
- Tributary Realignment
- Littoral Zone
- Capping Location
- Low Center
- Island
- Dredging Area
- Water Harvesting Basin
- Sediment Catchment Basin
- Island
- Meadow Restoration
- Meadow Wet
- Demonstration Meadow
- Demonstration Wetland
- Marsh
- Marsh at Bench
- Marsh meadow
- Riparian
- Riparian Buffer



**Big Bear Lake Restoration Project
Comprehensive Alternative B**
Includes Complete Eradication of Invasive Aquatic
Vegetation and Replanting, Boaters Fishery

Estimated Cost (with RE):	\$162,746,281
O & M	\$1,325,251
Habitat Units:	1775.4
Acres:	3102.89

Alternative 4 – Focuses on Lake only measures. Marsh and meadow restoration is within the lake boundary. Best Buy



Legend

- Littoral Zone
- Capping Location
- Island
- Dredging Area
- Water Harvesting Basin
- Sediment Catchment Basin
- Island
- Meadow Restoration
- Meadow Wet
- Demonstration Meadow
- Demonstration Wetland
- Marsh
- Marsh at Bench
- Marsh meadow
- Riparian
- Riparian Buffer



**Big Bear Lake Restoration Project
Lake Restoration Alternative**

Estimated Cost (with RE):	\$71,509,624
O & M	\$988,160
Habitat Units:	1732.7
Acres:	2871.30

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Alternative 5 – Focuses on Lake and Shoreline location measures. (Stanfield Marsh water supply is reclaimed water) – Best Buy



Legend

- Lateral Zone
- Island
- Channel Area
- Meadow
- Riparian
- Riparian Buffer
- Demarcation Wetland
- Marsh
- Marsh Wetland
- Riparian
- Riparian Buffer



Big Bear Lake Restoration Project
Lake and Shoreline Restoration
Alternative



Estimated Cost (with RE): \$114,155,467
O & M \$1,144,682
Habitat Units: 1758.7
Acres: 3029.74

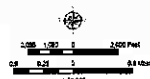
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Alternative 10 – Focuses on Meadow & Lake location measures. (Stanfield Marsh edges are restored) – Cost Effective



Legend

- Lateral Zone
- Island
- Channel Area
- Meadow
- Riparian
- Riparian Buffer
- Demarcation Wetland
- Marsh
- Marsh Wetland
- Riparian
- Riparian Buffer



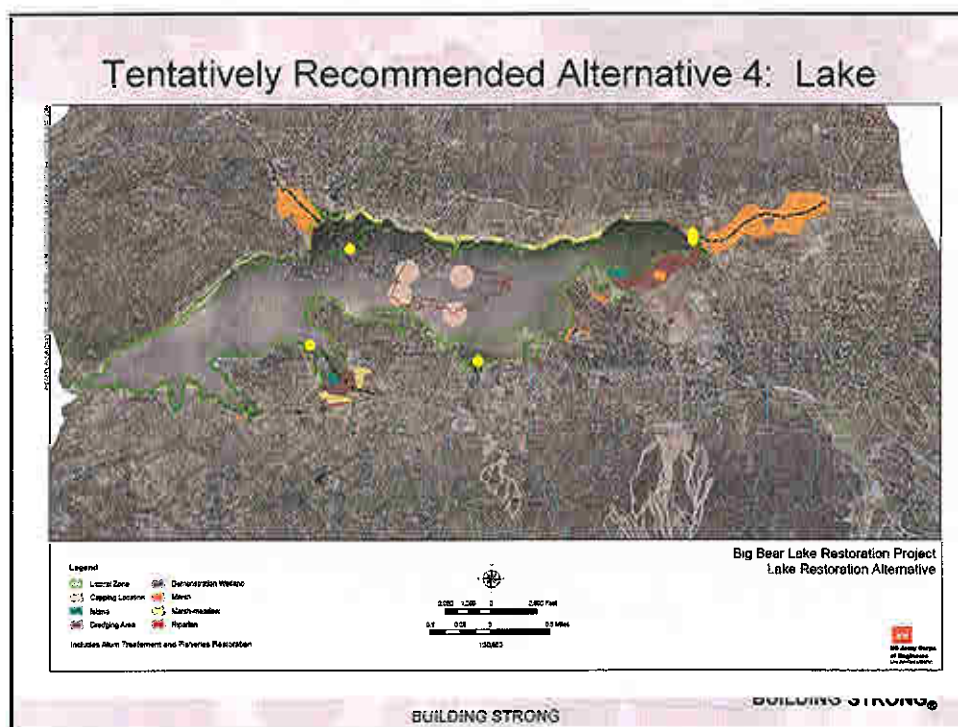
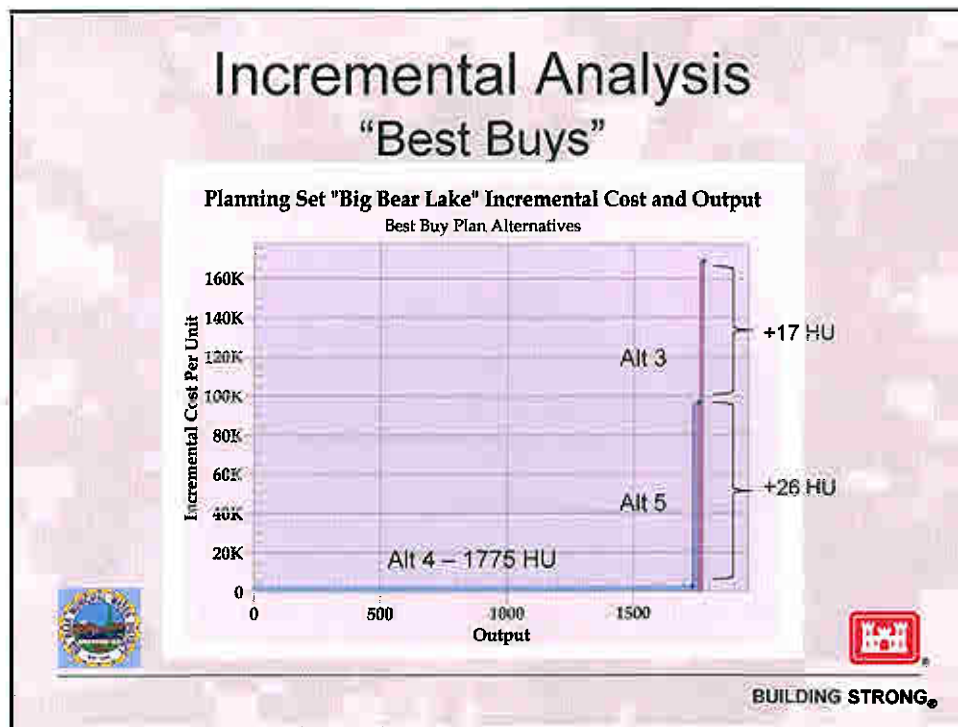
Big Bear Lake Restoration Project
Meadow and Lake Restoration
Alternative



Estimated Cost (with RE): \$71,443,032
O & M \$479,245
Habitat Units: 182
Acres: 1177.83

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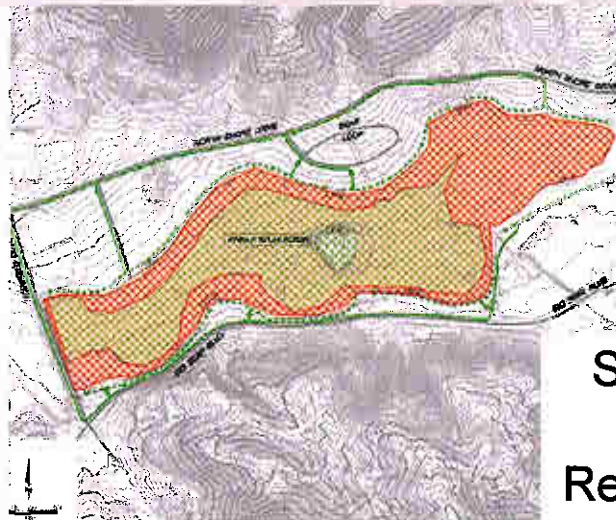


Alternative Strengths

- Restores Aquatic Habitat
- Restores Marsh-Meadow & Riparian Habitat
- Sequesters Nutrients with alum treatment and capping
- Manages Invasive Plants and Fish
- Drought Management measures for Stanfield Marsh and Fish Spawning (Pump and Pipeline Systems)



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Stanfield Marsh Restoration

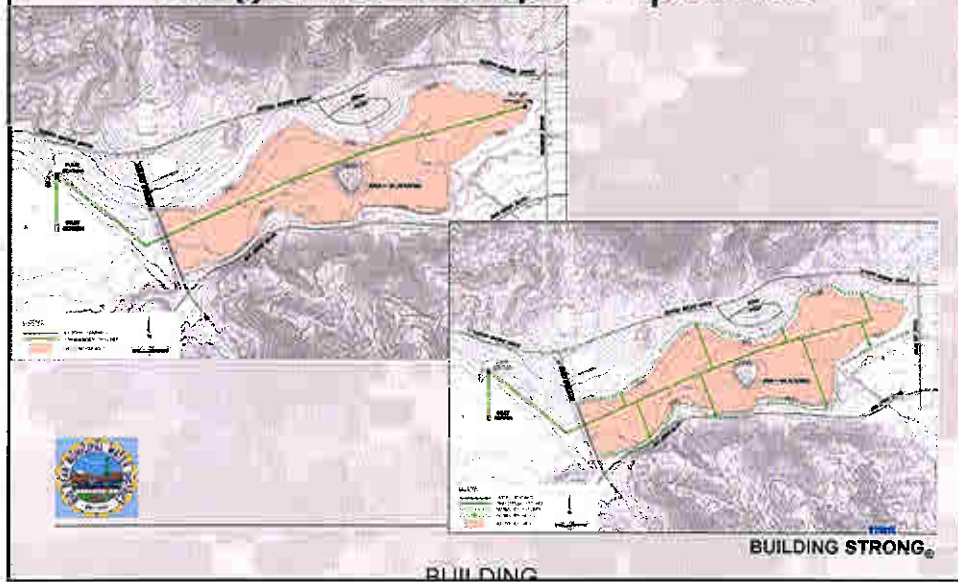
Figure 3. The area above elevation 6736 (red) is most feasible for creation of permanent marsh and represents about half (50 acres) of the 121 acres in the target area. The most suitable area is 30 acres in the far eastern section. Area below the 6736 contour will be subjected to extended (multiple year) inundation.



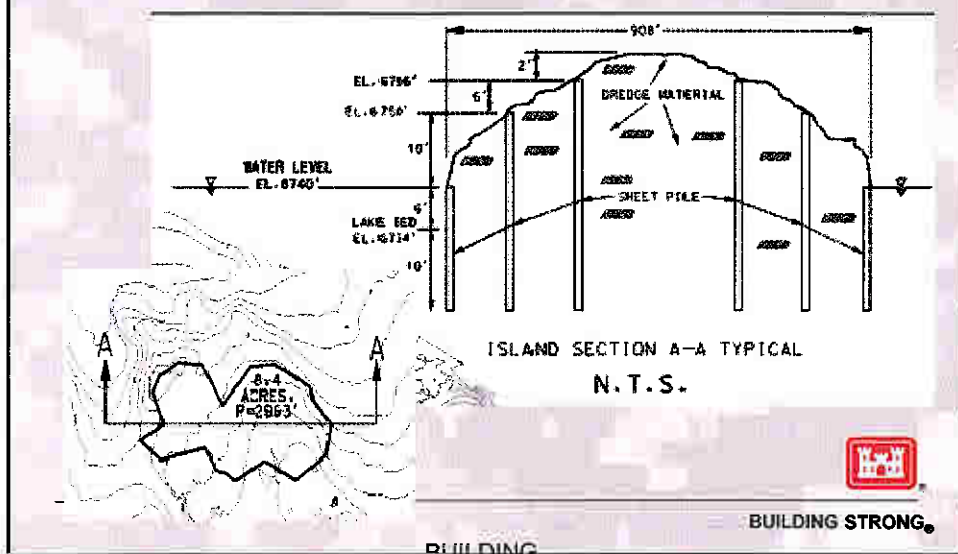
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Single vs. Multiple Pipelines



Island Typical Design



Potential Terrace Design

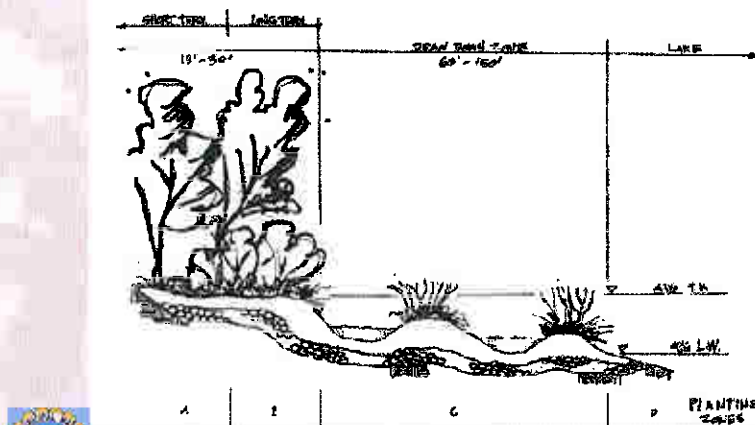


FIGURE 1: DRAW DOWN ZONE CONCEPT

BIG BEAR LAKE
DESIGN-BUILD PARTNERSHIP PROJECT



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Big Bear Lake Ecosystem Restoration Study

Schedule

UPCOMING STUDY MILESTONES

	Start	Finish
Contractor Report Preparation of F4	5/21/2010	9/28/2010
Agency Tech Review of F4	9/30/2010	10/29/2010
Division Tech Review	11/2/2010	12/2/2010
F4 Review Conference		12/18/2010

Likely Funding delay due to no FY 11 Budget. If optimal funding of \$455,000 the following dates apply:

AFB Report Preparation	1/10/2011	2/24/2011
Technical Review AFB	2/26/2011	4/12/2011
AFB Package to SPD/HQ	4/14/2011	5/14/2011
AFB		5/14/2011
Report Preparation-Draft Report (F5)	6-Dec-11	4-Jan-12
Technical Review-Draft Report	4-Jan-12	3-Feb-12
Public Review of Draft Report (F5)	3-Feb-12	
Feasibility Public Review Period (F5)	3-Feb-12	7-Mar-12
Prepare Final Public Meeting (F6)	3-Feb-12	10-Feb-12
Final Public Meeting(F6)	7-Mar-12	9-Mar-12
Feasibility Review Conference (F7) (CW050)		9-Mar-12
Report Preparation-Final Report (F8)	9-Mar-12	10-Apr-12
Technical Review-Final Report	10-Apr-12	24-May-12
Feasibility Report with NEPA to SPD (F8) (CW180)		24-May-12
SPD DST Review and Preparation of DE's Notice	24-May-12	15-Jun-12
MSC Commander's Public Notice (F9) (CW260)		15-Jun-12



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Big Bear Lake Ecosystem Restoration Study			
Cost Share Through F4			
	Federal Funds	Local Work In Kind (WIK)	
Prior to FY 10	\$3,485,977	\$3,535,820	Credited Through May 2007
		\$67,000	Additional PMP In-Kind through F4
		\$119,584	GM and Lake Manager June 2007 through F4 at 1.5 days/month
		\$64,500	Water Master Reports for 2008 & 2009
		\$94,000	Lake Water Quality Sampling/Analysis for 2008 & 2009
		\$96,700	Beneficial Use Map - Rematrix
		\$12,900	Beneficial Use Map - Consultant and Staff
		\$31,400	Aquatic Plant Management Plan - Consultant
		\$14,100	ACOE Sediment Sampling Data Evaluations - Consultant
		\$13,610	Annual Lake Weed Mapping
		\$36,000	Sediment Sampling Big Bear Marina
FY 10	\$577,000		
Total	\$4,062,977	\$4,085,614	



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Big Bear Lake Ecosystem Restoration Study			
Budget to Complete			
Project Management	40.0	Cost	60.0
Analyst	10.0	Real Estate	55.0
Scheduler	6.0	Regulatory	10.0
Plan Formulation	80.0	Contracting	7.0
Geology	8.0	Contracts	100.0
Soils	5.0	Reviews	220.0
Design	25.0	Travel	10.0
IS & H	20.0	Sub Total	831.0
Water Quality	15.0	Total DIV & Branch Technical Management Subtotal	77.5
Sediment	20.0	TOTAL CASH	908.5
Economics	20.0		
Environmental Coordination	40.0	WIK	92.6
Biology	40.0		
PCX Model Cert	35.0	TOTAL	1,021.1
Cultural	25.0		



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Big Bear Lake Ecosystem Restoration Study		
Cost Share to Complete		
In Thousands		
POST F4	WIK	Cash
Carryover Balance from F4	\$23.0	
Project Management	\$40.0	
Plan Formulation	\$20.0	
Reviews	\$10.0	
TOTAL WIK	\$92.6	
TOTAL CASH		\$342.9
TOTAL CONTRIBUTION		\$435.5



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Issues

- Future Funding:
 - In Kind Services & Study Cost
 - Federal Funding
- TMDL Services & Corps Policy Questions
- Coordination:
 - Stakeholders (Airport)
 - Potential Partners for action taken outside BBMWD lands or authorities



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