

**Humboldt Bay Municipal Water District
Water Resource Planning**

**Advisory Committee Recommendations
for Water Use Options**

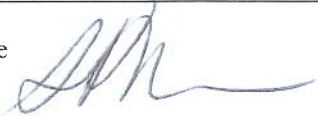



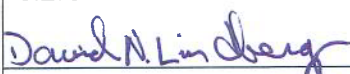
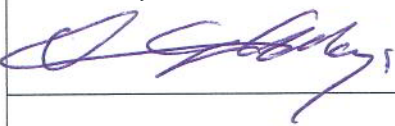


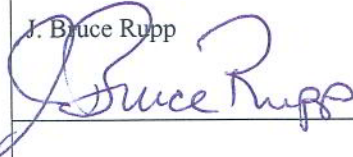
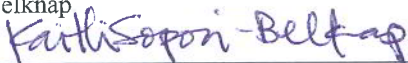
Supported by a Community-based Planning Process

**Prepared by
The Water Resource Planning Advisory Committee**

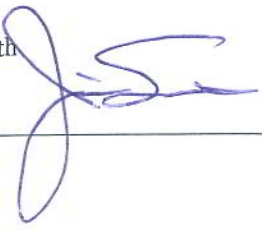
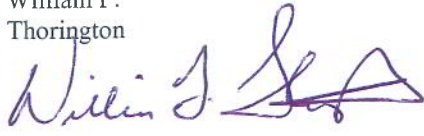
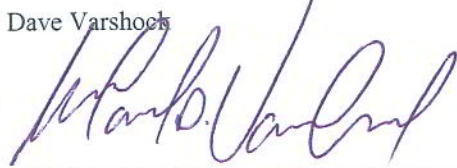
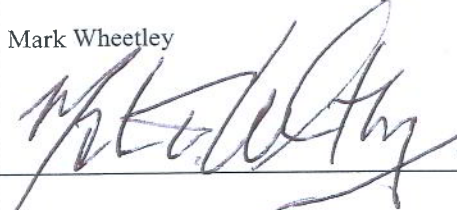
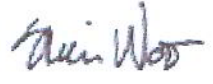
**Prepared for
The Humboldt Bay Municipal Water District Board
And Members of the Public**

August 2010

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See Section 3.4.2 for full list of speakers

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Citizens of Humboldt County, who came to meetings, wrote letters and email, read megabytes of information from the website, and voiced their thoughts and opinions

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Executive Summary

The Humboldt Bay Municipal Water District provides a reliable supply of drinking and industrial water to customers in the greater Humboldt Bay area of Humboldt County. It operates and maintains two separate and distinct water supply and delivery systems:

1. an Industrial Water System, capable of supplying 60 million gallons per day (MGD) of untreated water, which served wholesale industrial customer(s) located on the Samoa Peninsula, and
2. a Domestic Water System capable of supplying about 20 MGD of treated drinking water wholesale to its seven municipal customers.

The key challenge facing the District is the loss of its entire industrial customer base. This has resulted in:

- a significant loss in revenues that has shifted substantial costs to the District's municipal customers who, in turn, increased water rates to the ratepayers;¹
- non-use of the industrial water system and under-utilization of the District's water rights, which will be lost in the future if not used once again.

Therefore, to address revenue loss and to avoid the potential loss of water rights in the future, the District must find uses for the 60 MGD untreated "industrial" water. The District Board of Directors turned to the community to identify possible water use options. The process of engaging the community and identifying water use options was termed "Water Resource Planning."

The purpose of this Water Resource Planning report is to:

1. educate the public as to the conditions facing the District,
2. communicate recommendations for water use options that were developed by an advisory committee formed during the planning process, and
3. describe the community planning process that led up to these recommendations.

The Water Resource Planning (WRP) process initiated by the District Board of Directors was developed to:

- Provide the community with an understanding of the key challenges and opportunities facing the District, its customers, and the community
- Enable Board members to understand the community's priorities regarding the Mad River and use of its water
- Strengthen the District's position to maintain control of its water resource
- Position the Board so it can make decisions that benefit the community, and
- Develop a stronger and more trusting relationship between the District Board and the community

¹ It should be noted that not all of the municipal rate increases are due the District's increases, but also to a municipality's need to provide for its own aging infrastructure and delivery system.

An over-all goal for the District's WRP process was to set new standards for public processes and avoid the problems that plague many public processes, including polarized citizens, bad decisions, stalemate, or wasted time and dollars. Specifically, the District Board wanted the WRP process to be participatory, open and fair, efficient and time bound, educational, respectful and clear.

The District's outreach to the community was both wide-ranging and in-depth. To lead the process, the Board created an Advisory Committee (AC) comprised of three representatives from its Municipal Customer group, nine citizens representing multiple stakeholder perspectives, and two members of the Board. The AC began its work in June 2009. During its 14-month process, the AC gathered input and feedback from the public at 11 meetings, conducted an educational Water Workshop, and formed a Citizen's Study Group (CSG) comprised of invited stakeholders and citizens randomly selected and invited from voter rolls. The District used television, radio, print media, and the internet to further communicate with the community. For example, 29 articles appeared in eight newspapers or newsletters. The District also gave 22 presentations to various stakeholder groups throughout Humboldt County.

We have identified six distinct achievements or results of the WRP process. They are:

1. Created a "Framework for Evaluating Water Resource Planning Options"
2. Identified options evaluated by the public and the AC
3. Created detailed descriptions of the options
4. Provided public outreach and education
5. Analyzed options
6. Provided recommendations to the District Board

The "Framework for Evaluating Water Resource Planning Options" is a list of criteria by which one can evaluate water use options. It was synthesized from the values and priorities expressed by the public, the Citizen's Study Group, and the AC during the first set of public meetings.

Seven categories of evaluation criteria were identified; a water use option should:

1. Maintain local control of the District's water rights
2. Be legally viable
3. Support the preservation or enhancement of Mad River watershed
4. Maintain the community's access to water
5. Support economic development
6. Provide District cost recovery
7. Preserve or maintain our "quality of life"

Two of these evaluations were deemed so important that they were "elevated" to become thresholds, that is, an option must pass the two thresholds to be further considered as a water use option. Maintaining local control of water and being legally viable were the two water use thresholds.

Results 2, 3, and 4 of the WRP process occurred over six months (January to June 2010). During that time numerous and varied water use options were identified, described, researched, and discussed by the public, the CSG and the AC. Many options were slight variations on a concept, and the AC ultimately defined and analyzed 12 water use options. Then, using the "Framework

for Evaluating Water Resource Planning Options”, and considering all of the public input from meetings, letters, and emails, the AC was able to narrow the water use options to ten (Table A). Option B4 was set aside because it would not likely meet the “maintain local control” threshold and would introduce adverse environmental impacts in the Mad River watershed. Option D2 was set aside because it was a non-consumptive use, therefore it did not address the primary objective of this planning effort (i.e., identifying options to use additional water given loss the mills), and it was unclear whether it would “maintain local control” of the District’s water rights.

Table A. Summary of water use options and initial screening

Water Use Options	Options set aside from further consideration	Options recommended for consideration
A1. Actively pursue companies that use water		X
A2. Expand District boundaries		X
A3. Develop Lake in Blue Lake		X
A4. Develop aquaculture for appropriate species		X
A5. Divert water to Mad River fish hatchery		X
A6. Develop aquaculture for algae		X
B1. Sell untreated water to another municipality		X
B2. Sell untreated water to a private entity		X
B3. Build a pipeline in NCRA right-of-way to Sonoma		X
B4. Transfer water to Van Duzen or Trinity rivers	X	
C1. Transfer water (in Mad River watershed) for environmental restoration/enhancement (this was also called “in-stream flow” option)		X
D1. Develop micro-hydro in watershed		X
D2. Recreational opportunities at Ruth Lake	X	

The AC evaluated the remaining ten options and also solicited input from the CSG and public during the third round of public meetings. Following extensive consideration, the AC tiered its final recommendations that are presented in Table B. The only option on which the AC could not reach consensus was Option B3, building a pipeline to Sonoma County in the North Coast Railroad right-of-way.

Table B. Summary of the AC’s Tiered Recommendations

Option	Immediately pursue	Passively pursue	Defer	Not Recommended
A1. Actively pursue companies that use water	X			
A2. Expand District boundaries	X			
A3. Develop Lake in Blue Lake		X		
A4. Develop aquaculture for appropriate species		X		
A5. Divert water to Mad River fish hatchery		X		
A6. Develop aquaculture for algae		X		
B1. Sell untreated water to another municipality	X			

B2. Sell untreated water to a private entity		X		
B3. Build a pipeline in NCRA right-of-way to Sonoma	*AC unable to reach consensus			
C1. Transfer water (in Mad River watershed) for environmental restoration/enhancement (also called in-stream flow option)	X			
D1. Develop micro-hydro in watershed		X		
* The AC's views varied widely on this option, and they were not able to reach agreement on a final recommendation. See Section 3.6 of the report for an explanation.				

An evaluation of the WRP process itself is on-going. At the end of each public meeting, participants were asked to evaluate the process. Of those at the public meetings (approximately 390), 230 responded and expressed “very positive feelings” about the process. For example, participants were asked how well the meetings achieved the desired outcomes. On a scale of 1 to 5, with 5 being that the outcomes were fully achieved, 88.7% responded with either a 4 or a 5; the average response was 4.4. During August and September 2010, the District will conduct a survey of the groups who were involved in the process including District staff, the AC, the Citizen’s Study Group, the Water Task Force, and members of the stakeholder groups. AC members and District staff will also be debriefed in interviews.

Table of Contents

1	Introduction.....	1
1.1	Introduction to the HBMWD	1
1.1.1	Key Challenges Facing the District	4
1.1.2	Planning Process to Address Strategic Issues.....	5
1.2	Introduction to California Water Law (by David Alajem)	6
1.2.1	Water Law Basics	6
1.2.2	HBMWD’s Water Rights.....	8
1.2.3	Controlling Water Rights = Putting Water to Use.....	8
2	Water Resource Planning Process	10
3	Results.....	14
3.1	Result 1. Created a Framework for Evaluating Water Resource Planning Options	14
3.2	Result 2. Identified Options Evaluated by Public and the AC.....	18
3.3	Result 3. Created Detailed Descriptions of Options	22
3.4	Result 4. Provided Public Outreach and Education.....	34
3.4.1	Citizen’s Study Group.....	34
3.4.2	Public Meetings and the Water Workshop	34
3.4.3	Other Group Presentations.....	37
3.4.4	Media Outreach.....	38
3.5	Result 5. Analyzed Options	40
3.5.1	Raptools	40
3.5.2	Initial Screening of Options	43
3.5.3	Tiering or Grouping of Options	44
3.6	Result 6. Provided Recommendations to the HBMWD Board	48
4	Process Evaluation (by Mary Gelinias)	48
4.1	Formative Evaluation.....	49
4.2	Summative Evaluation.....	50
5	Conclusions and Reflections	51

List of Figures

Figure 1.	Current operations of the District, with the distinction between untreated industrial and treated municipal (drinking) water supply.....	3
Figure 2.	Annual average municipal and industrial water used (MGD) over the last 40+ years.	5
Figure 3.	The Water Resource Planning Process. Schematic overview of how citizens and stakeholders are involved	11
Figure 4.	Example kite diagram from the Raptools model.....	41
Figure 5.	Kite diagrams generated from AC members’ evaluations of the water use options using the Evaluation Framework and Raptools.....	42

List of Tables

Table A. Summary of water use options and initial screening.....vi	vi
Table B. Summary of the AC's tiered recommendations.....vii	vii
Table 1. The District's two planning efforts, infrastructure and water resource planning . 6	6
Table 2. Water Use Options based on public and stakeholder input 19	19
Table 3. Eight public meetings were held to support the water use planning process 35	35
Table 4. Water Workshop Agenda 19 January 2010 36	36
Table 5. Electronic media outreach 38	38
Table 6. Print media outreach 38	38
Table 7. Results of initial screening of options by 11 AC members.. 44	44
Table 8. Results of tiering or grouping of the water use options. 46	46
Table 9. Recommendations to the HBMWD Board from the Advisory Committee..... 48	48

Appendices

1. WRP Advisory Committee Charter
2. Key Challenges Facing the District - Increased Costs and Water Rates
3. Overview of District Water Rights and Implications if not Used
4. Legal Opinion on Proposed Recommendations of Advisory Committee
5. Summary of Feedback on Eleven Meetings
6. Water Workshop Technical Background Materials
 - a. Presentations:
 - Introduction HBMWD's Situation and Its Implications
 - Water Rights and Options
 - Mad River Ecosystem
 - Water and Economic Development
 - b. Additional Reports & Supporting Material:
 - HSU, OECD Competitive Intelligence Research Service. January 7, 2010 Research Summary Update. Question: For several known water-intensive businesses, what is their daily water use, non-water related driving factors for determining facility location (including sensitivity to freight costs), and potential issues relating to discharge/waste products?
 - HSU, OECD Competitive Intelligence Research Service. October 28, 2009 Research Summary. Question: What industries/products are the most water-intensive within the United States?
 - Session notes for "How do the District's current and potential futures affect the Mad River?"
7. Raptools presentation to the AC

Acronyms and Abbreviations Used in this Report

AC	Water Resource Planning Advisory Committee
AF	Acre feet (of water) = 325,851 gallons water
BLM	Bureau of Land Management
CCC	California Coastal Commission
CDFG	California Department of Fish & Game
CEQA	California Environmental Quality Act
CFS	Cubic foot (of water) per Second: 1 CFS = 645,000 Gal per day
CIP	Capital Improvement Plan
CSD	Community Services District
CSG	Water Resource Planning Citizen's Study Group
EIR	Environmental Impact Report
ESA	Endangered Species Act--Federal legislation
HCP	Habitat Conservation Plan
HBMWD	Humboldt Bay Municipal Water District
MGD	Million Gallons per day = .645 CFS or 10 MGD = 6.45 CFS.
MHI	Median Household Income
NCRA	North Coast Railroad Authority
NCRWQCB	North Coast Regional Water Quality Control Board
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
RWQCB	Regional Water Quality Control Board
SCWA	Sonoma County Water Agency
SWRCB	State Water Resource Control Board
USFWS	United States Fish and Wildlife Service
WPR	Western Pacific Railroad
WRP	Water Resource Planning Process
WRPR	Water Resource Planning Report

1 Introduction

The purpose of this Water Resource Planning Report is to:

1. communicate recommendations for water use options that were developed by the Water Resource Planning Advisory Committee (AC), and
2. describe the community planning process that led up to these recommendations.

The intended readers of this report are the Humboldt Bay Municipal Water District (HBMWD or simply “the District”) Board of Directors, members of the public, municipal customers and their boards of directors, and all other stakeholders.

By the time you finish reading this report, we hope you understand:

- The AC’s recommendations for water use options and the criteria they used to evaluate the options
- The history and mission of HBMWD along with its current and future challenges that led to the initiation of the Water Resource Planning (WRP) process
- The legal context of California water rights law within which the District operates
- The innovative community-based planning process undertaken by the HBMWD Board of Directors and how the process effectively engaged the public in governmental policy decisions.

This report represents the completion of the AC’s charter (see Appendix 1). The AC’s primary intent is to provide the Board of Directors with a report that can aid in their strategic planning for several years to come. This report was also written for the citizens who donated their time to this process, and for the general public. The AC made every attempt to fairly and fully represent and express the public’s thoughts and perspectives. Finally, this report is written for governmental leaders and citizens as an example of a more effective public process leading to sound solutions that are understood and supported.

1.1 Introduction to the HBMWD

The Humboldt Bay Municipal Water District was formed in 1956 pursuant to the California Municipal Water District Act. The District was created to develop a regional water system that provides a reliable supply of drinking and industrial water to customers in the greater Humboldt Bay area of Humboldt County.

The District’s Mission is to:

1. reliably deliver high quality drinking water to the communities and customers the District serves in the greater Humboldt Bay Area at a reasonable cost;
2. reliably deliver untreated water to the District’s wholesale industrial customer(s) at a reasonable cost; and
3. protect the long-term water supply and water quality interests of the District in the Mad River watershed.

Current operations of the District include: 1) Ruth Lake in southern Trinity County, which provides the reliable year-round water supply, 2) a hydro-electric power house at Matthews Dam on Ruth Lake, 3) diversion, pumping and control facilities on the Mad River at Essex (between

Arcata and Blue Lake), 4) storage and treatment facilities at various locations, and 5) two pipeline systems that deliver either treated drinking water or untreated surface water to customers throughout the Humboldt Bay region.

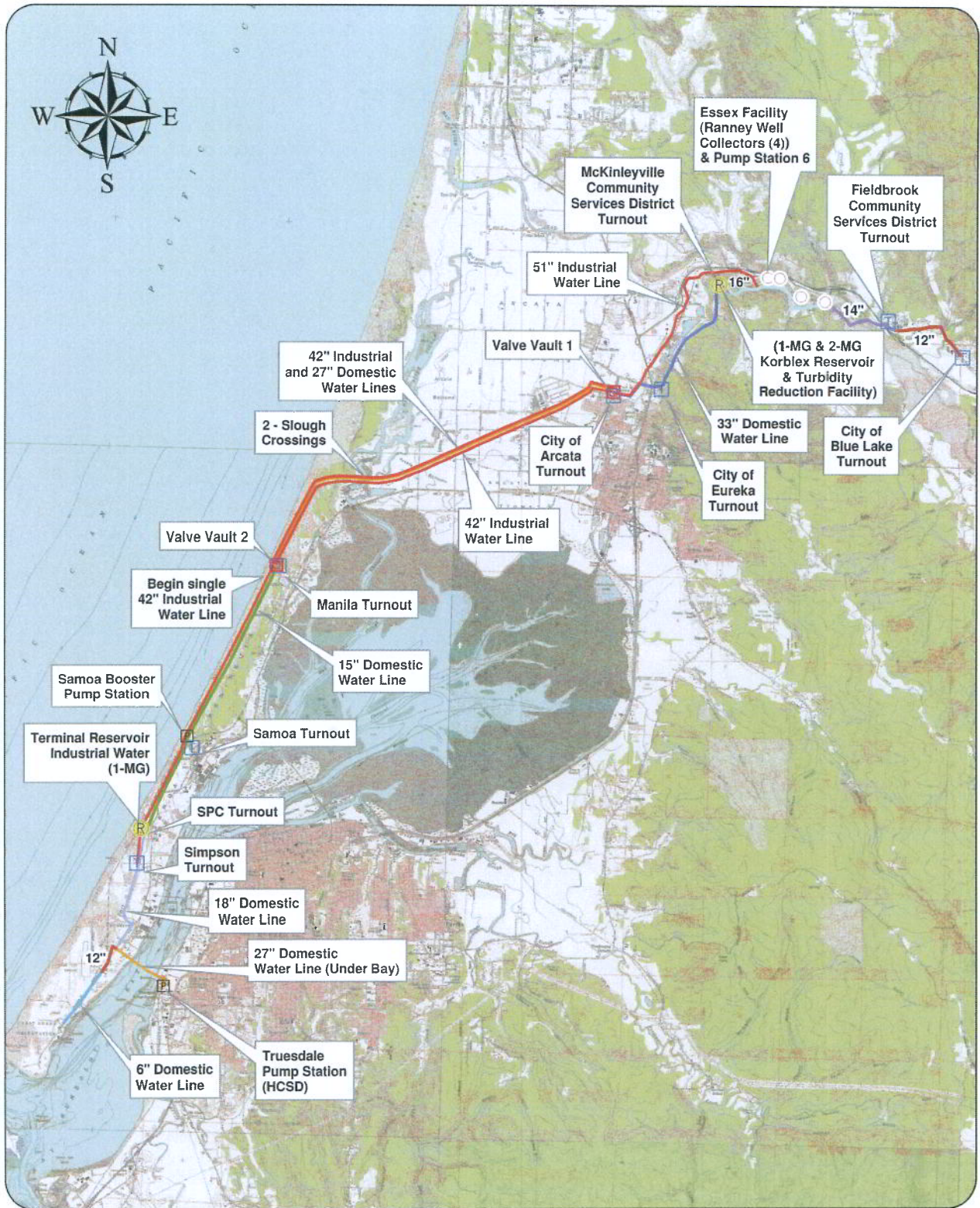
The distinction between the treated drinking water and the untreated surface water is an important aspect of the District's water system, and is central to understanding the water use issue (Figure 1). The District operates and maintains two separate and distinct water supply and delivery systems:

1. an Industrial Water System, capable of supplying 60 million gallons per day (MGD) of untreated water, which served wholesale industrial customer(s) located on the Samoa Peninsula, and
2. a Domestic Water System capable of supplying about 20 MGD of treated drinking water for the wholesale municipal customers.

The District operates almost exclusively at the wholesale level, which means it sells water to municipalities and industries on the Samoa peninsula; very few individual households purchase water directly from the District. The District supplies treated drinking water to seven public agencies in the greater Humboldt Bay region. Via this wholesale relationship, the District serves treated drinking water to 75,000 to 80,000 people. The wholesale municipal customers are:

- the City of Arcata,
- the City of Eureka,
- the City of Blue Lake,
- the Fieldbrook-Glendale Community Service District (CSD),
- Humboldt CSD,
- Manila CSD, and
- McKinleyville CSD.

The District also supplied untreated industrial water to customer(s) located on the Samoa Peninsula. Wholesale service to these customers – both municipal and industrial -- is governed by long-term water supply contracts.



LEGEND

Diameter	Facility
6" Domestic	P Pump Station
12" Domestic	R Reservoir
14" Domestic	T Turnout
15" Domestic	V Vault
16" Domestic	W Well
18" Domestic	
27" Domestic	
30" Domestic	
33" Domestic	
Industrial (42", 51")	

Humboldt Bay Municipal Water District Facilities

Figure 1. Current operations of the District with the distinction between untreated industrial and treated municipal (drinking) water supply.

Three key points regarding the District's infrastructure are important in understanding the District's advantages and constraints in regards to planning future water uses:

- The two systems are in place, have been fully paid for, and have reliably and cost effectively served the drinking and industrial water needs of the Humboldt Bay community since the early 1960s.
- Given the system capacities noted above (60 MGD industrial and 20 MGD municipal), 75% of the District's water supply and delivery capacity is on the industrial water system.
- These two systems are dedicated for their respective uses; in other words, *the industrial system (in its current state) cannot supply drinking water*. So although the District has ample water supply available under permit from the State, the District can only provide about 20 MGD of drinking water unless significant infrastructure is added to the domestic water system.

1.1.1 Key Challenges Facing the District

The key challenge facing the District is the loss of its entire industrial customer base. This has resulted in:

1. a significant loss in revenues that shifted substantial costs to the District's municipal customers who, in turn, increased water rates to ratepayers;
2. non-use of the industrial water system; and
3. under-utilization of the District's water rights, which will be lost in the future if not used once again.

From the early 1960s until 1999, the District had long-term contracts in place with two large industrial users (pulp mills) on the Samoa Peninsula. For most of this period, the full 60 MGD capacity of the District's industrial water system was under contract to these mills. During this period, the two mills used most of the water under contract to them. The mills' actual uses ranged between 40 and 50 MGD, which was *4 to 5 times greater* than the *total* municipal use for the entire Humboldt Bay region.

However, in the mid-1990s, the Simpson Pulp Mill ceased operation, resulting in a significant reduction in District water deliveries (Figure 2). Shortly thereafter, the remaining operational pulp mill reduced its contract commitment to about half of what it had been historically. In 2009, the remaining pulp mill ceased operation, and as of August 2010, remains closed. Total municipal use has been quite constant over the last 20 years, averaging about 10 MGD. However, industrial use is now zero, down from its former level of 40 to 50 MGD.

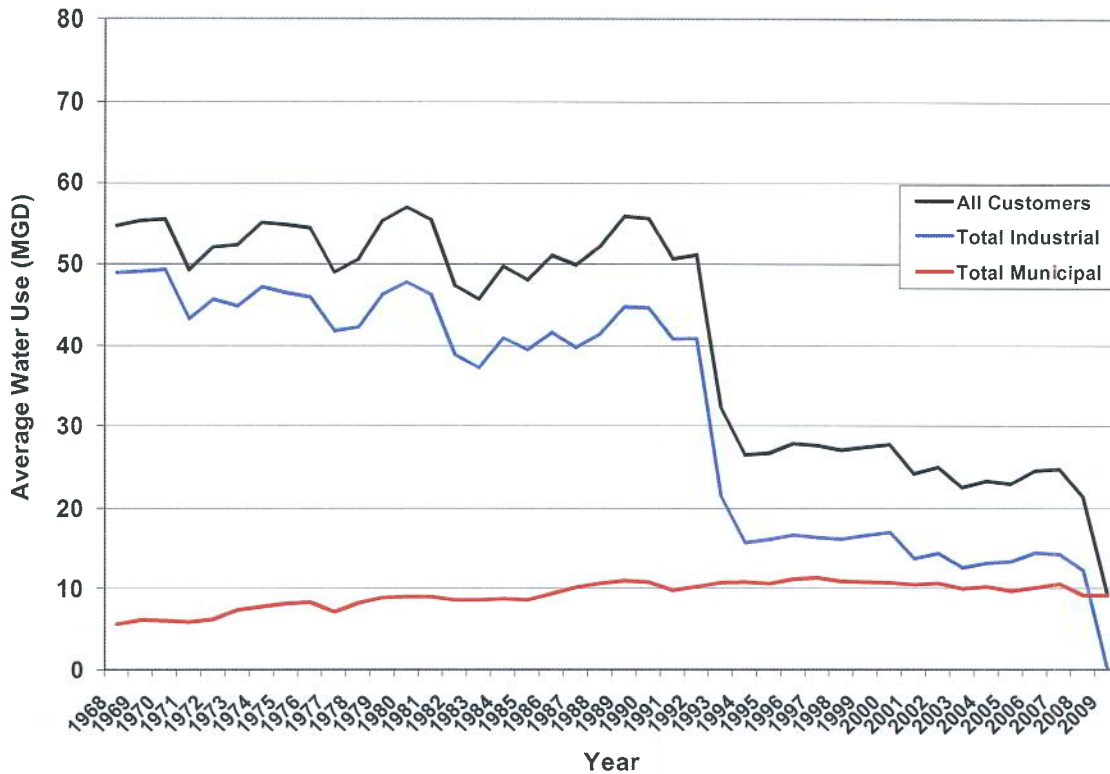


Figure 2. Annual average municipal and industrial water used (MGD) over the last 40+ years.

This loss of industrial customers has created significant issues for the District and its municipal customers. The loss of the mills – who at one time paid about 75% of the District’s fixed costs of the regional water system -- has triggered significant cost increases to the municipalities, who in turn have had to raise water rates quite significantly. Wholesale cost increases and resulting impacts on retail water rates are discussed in greater detail in Appendix 2.

Besides the economic ramifications, this loss has also created a very unique challenge to the District’s water rights (discussed in Section 1.2 and Appendix 3).

1.1.2 Planning Process to Address Strategic Issues

In 2005, the Board of Directors embarked upon a planning process to begin to address long term issues of strategic importance to the District. The goal was to ensure the long-term integrity and viability of the regional water supply and system, such that the District continues to reliably meet its important service mission to the community. The Board identified and agreed to two priority areas that warrant attention in the coming years, Infrastructure Planning and Water Resource Planning (Table 1).

Table 1. The District's two planning efforts, infrastructure and water resource planning

	Infrastructure Planning	Water Resource Planning
Why needed?	The District's infrastructure is over 50 years old and will be very costly to replace.	To address cost shift to municipalities and increased water rates, less revenue for aging infrastructure, and under-utilization of District's water rights (see Section 1.2 and Appendix 3)
What's been done?	The first draft of a comprehensive "Infrastructure and Capital Improvement Plan" (CIP) ² was completed and approved by the Board in 2007. The District is in the process of assessing the condition of its assets, and developing and prioritizing CIP projects	In 2007, the District Board created an ad-hoc committee to explore options for stakeholder and community involvement; its report was completed March 2008. Official launch of Water Resource Planning was in Fall 2008. This report signals completion of this planning effort.
How much will it cost?	It is anticipated that the CIP projects will cost many millions of dollars over the 20-year planning horizon.	Although primarily a volunteer effort, \$14,550 in grant funding was obtained to support the WRP effort. With this report's recommendations, the goal is to seek and obtain additional grant funding to advance the next steps (which support eventual implementation).
What are the key issues?	How to pay for these costly infrastructure projects, especially having lost the industrial customer base and its significant revenue contribution.	Water rate increases to customers, and possible loss of portion of water rights.

1.2 Introduction to California Water Law (by David Alajem)

[Note to readers: this section was written by David Alajem, partner, Downey Brand LLP. It was lightly edited to reduce redundant information presented in other report sections.]

1.2.1 Water Law Basics

California law recognizes three major types of surface water rights:

1. riparian rights,
2. pre-1914 appropriative rights, and
3. post-1914 appropriative rights.

The District does not hold riparian rights or pre-1914 appropriative rights and so this brief discussion will address only post-1914 appropriative rights.

Post-1914 appropriative rights are acquired by means of an application to the State Water Resources Control Board (SWRCB) (or one of its predecessors) that describes:

- (i) the purpose for which the applicant wishes to use the water,
- (ii) the location where the applicant will divert the water,
- (iii) the place where the water will be used,

² The CIP introduces a policy framework to guide the District's infrastructure investments. It defines a process to prioritize individual projects by considering factors such as "Remaining Useful Life" of an asset, whether there is "Redundancy" (so if the asset fails service continues), and "Importance." It contains a detailed inventory of the District's infrastructure, and when completed, will recommend specific projects (e.g., what, when and at what cost?).

- (iv) the maximum rate of diversion and the maximum annual quantity of water to be diverted, and
- (v) the period each year during which the water will be used.

The SWRCB then considers the application and evaluates:

- (i) is there water available for appropriation and use as described in the application, and
- (ii) whether granting a right to use water as proposed would be in the public interest.

If the SWRCB determines that there is water available and that it would be in the public interest for the water to be used in the manner described in the application, then the SWRCB issues the applicant a permit for the water.

Once the SWRCB issued a water right permit, the permittee (here, the District) is entitled to divert the “face value” of the right as shown on the permit issued by the SWRCB, provided that the diversion of water complies with all of the terms of the permit (including but not limited to the terms of the application). The permit does not vest a permanent right with the water user; instead, it creates a right that is subject to revision if the permittee does not put the full amount of water to beneficial use. The SWRCB reviews the permittee’s activities after a sufficient time to allow the permittee to develop its water use and then issues a water right license for the quantity of water that the permittee has actually put to use. In this way, California law does not allow permittees to “lock up” water without putting it to use.

Of course, over the term of a 25-year permit, conditions will change. California law allows a permittee to change the place of use, the point of diversion or the purpose of use to reflect the changing needs of a community. Here, for instance, the District could change the purpose of use from “municipal and industrial” (i.e., urban uses) to “agriculture” or “aquaculture” in order to provide water for farming activities. The District could change its place of diversion from Essex to another location and it could change the place of use from its current service area to the entire county. Any of these changes would require a petition to the SWRCB that explains the need for the change and why the change would serve the public interest. The District may not increase the quantity of water that it diverts or change the season of its diversions without applying for an entirely new water right.

As a general rule, the SWRCB will look favorably on a proposed change in a water right as long as two conditions are met. First, the change cannot interfere with or otherwise injure another water right holder. For instance, suppose that the District wanted to move its point of diversion upstream from Essex to Ruth Lake. Such a change might mean that there wouldn’t be enough water for a water user located between Essex and Ruth Lake. Because the change would injure a water user, the SWRCB would not approve such a change. Second, the change cannot have an unreasonable adverse effect on the environment or on public trust resources. Although California law does not expressly require changes in water rights to serve the public interest, the “no injury” and “no unreasonable impacts” standards effectively mean that the SWRCB must be convinced that a proposed change in a water right serves the public interest before it will approve the proposed change.

1.2.2 HBMWD's Water Rights

The District holds appropriate water rights permits that allow it to store water at Ruth Lake and divert water at the District's pumping facilities on the Mad River (located between Arcata and Blue Lake). These permits allow the District to store 48,030 acre-feet of water at Ruth Lake and to divert 116 cubic feet per second (cfs). (Note: 116 cfs = 75 million gallons per day (MGD), which are the units in which HBMWD measures water delivery to its customers). The storage and diversion water rights are what allow the District to provide the highly reliable year-round supply of water to the Humboldt Bay region. Appendix 3 provides additional details regarding the District's water rights and implications if they are not used prior to the time when the existing permits expire.

1.2.3 Controlling Water Rights = Putting Water to Use

One of the key questions relating to the exercise of water rights is how much control the permittee will have as compared to the SWRCB or others. As a general rule, as long as the permittee is complying with the terms of its permit (including any changes), then the permittee has full control over the water rights. However, if the permittee fails to put all of the water under permit to use, then the SWRCB will, at the end of the permit period, reduce the quantity of water under the right to the amount that the permittee has actually used. In addition, the failure to use water formerly under permit creates the opportunity for new parties to try to obtain rights to the unused water.

Therefore, the Advisory Committee encouraged its members, the Citizen's Study Group, and members of the community, to propose ways to make complete use of the District's water rights, thereby avoiding the potential loss of those rights at the end of the current permit period and maintaining local control.

There are three categories of water use available to the District:

- (i) Use additional water *within* the District's existing service territory – projects that would increase the consumptive use of water within the District's existing boundaries;
- (ii) Sell or transfer water for use *outside* of the District's existing service territory - projects that would focus on generating revenues for local projects by selling water (not water rights) to areas outside the District under strictly defined terms;
- (iii) Transfer water for environmental benefits - projects that would provide water for environmental restoration or enhancement;

There are also other projects the District may consider which would not be consumptive uses of water, but may use a portion of the District's water rights. An example of this includes generating additional hydroelectric power somewhere along the Mad River.

Under the Municipal Water District law, the District has broad authority to serve water for consumptive and non-consumptive purposes (including recreation and environmental purposes). All water use proposals under consideration by the Advisory Committee could be legally

implemented. However, most of the proposals would require additional permitting as well as changes to the District's water rights permits (e.g., serving water outside the District's existing boundaries would require a modification in the District's water rights for the period of the transfer), but all of the proposals meet the basic standard of legal feasibility.

Moreover, implementing any of the proposals would serve to advance local control over the District's water rights. Putting additional water to use would make it more difficult for either the State of California or those outside the District to make claims that the District's water rights should be limited to the quantities currently needed in the absence of the two pulp mills. In this regard, putting water to use by means of a transfer outside the District preserves the District's water rights while generating funds that can be used for operation and maintenance or capital expenses. Such a transfer would include a number of provisions that would prevent the buyer from becoming dependent on the transfer, such as preventing the transferred water from being included in an urban water management plan or water supply assessment.

[Note to readers: A formal letter expressing David Aladjem's opinion of the legal viability of these water use categories is included in Appendix 4).

2 Water Resource Planning Process

To address the challenges outlined in Section 1, the District's Board developed a planning process intended to produce sound recommendations that are understood and supported by the community. They also wanted to set a new standard for civic dialogue and public process, thereby avoiding the problems that currently plague so many public processes, including polarized citizens and stakeholder groups, stalemates, and wasted time and dollars.

The Board created a community-based planning process to accomplish the following goals:

- To provide the community with an understanding of the key challenges and opportunities facing the District and its customers (i.e., the community)
- To enable Board members to understand the community's priorities regarding the Mad River and use of its water
- To strengthen the District's position to maintain control of its water resource
- To position the Board so it can make decisions that benefit the community, and
- To develop a stronger and more trusting relationship between the District Board and the community

The Board defined the characteristics they wanted in their planning process. They wanted the process to be:

- | | |
|---------------------------|---|
| Participatory: | The process engages a broad spectrum of people, especially those who could be impacted by the Board's decisions, in meaningful ways through a variety of methods including face-to-face meetings in various locations and on-line vehicles. |
| Open and fair: | The community understands the decision-making process and their role in it. They understand the issues and are committed to participating in the planning process. |
| Efficient and time bound: | Participants see it as a good use of their time. |
| Educational: | People understand the issues and challenges and are able to engage as informed participants. |
| Respectful: | Participants listen to one another and consider each other's points of view, even when they disagree. |
| Clear: | Participants understand the process and the potential legal constraints that affect the Board's decisions regarding our water rights. |

To help participants understand the process, they planned it to be implemented in five phases (Figure 3). The three middle phases directly involved the public (see Appendix 1 for details).

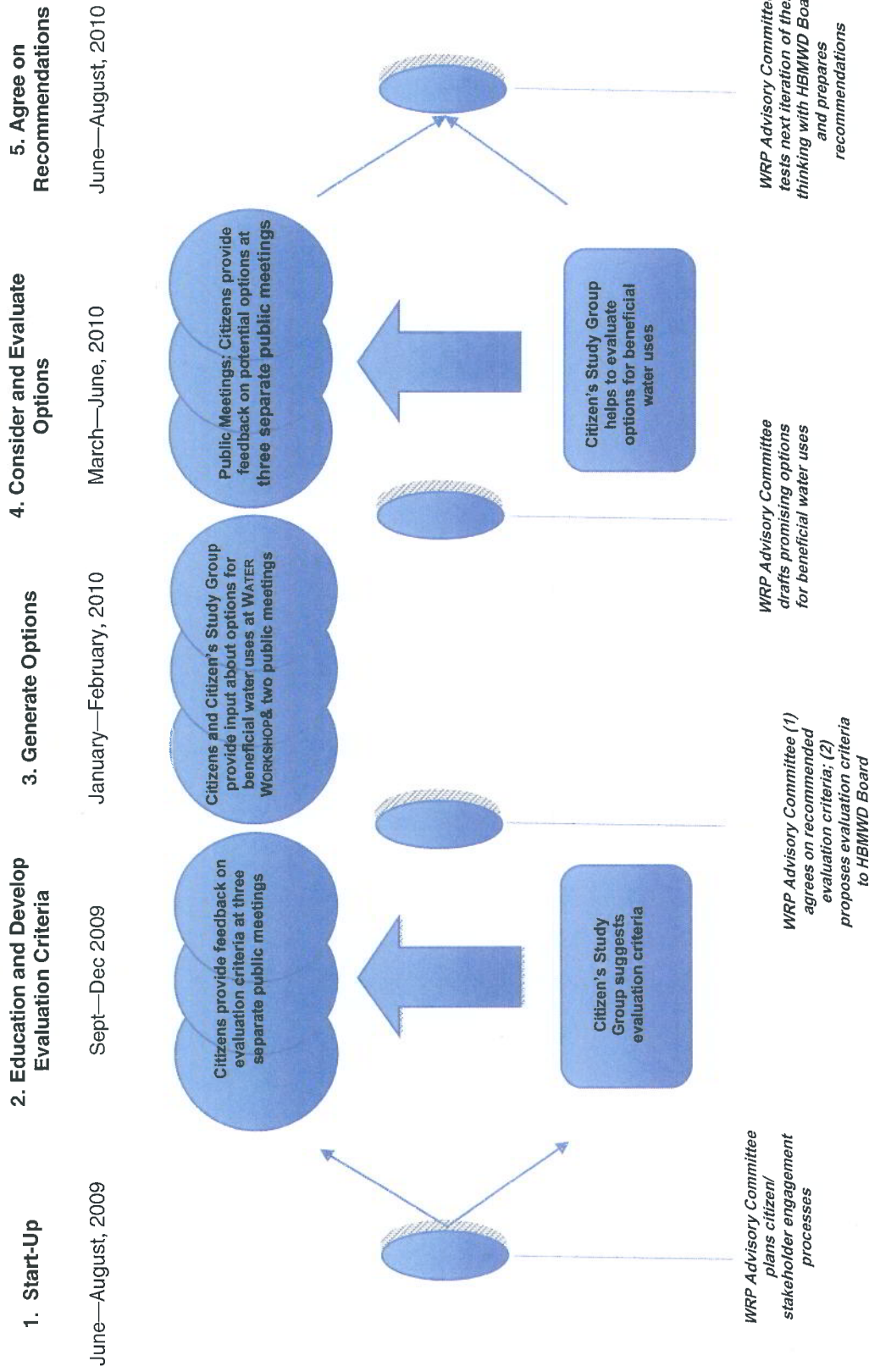


Figure 3. The five phases of the Water Resource Planning Process. Schematic overview of how citizens and stakeholders are involved.

To make sure the process was as inclusive and participatory as possible, the Board established an Advisory Committee (AC) of stakeholders that brought together multiple perspectives from the community. The 14-member Advisory Committee was comprised of two HBMWD Board members, three wholesale municipal customer representatives, and nine stakeholder group representatives. These included environmental, fisheries and watershed, economic development, the Blue Lake Rancheria, Chambers of Commerce, real estate, and organized labor.

The AC began its work in June 2009. Its charge included three major tasks:

1. Plan in more detail how to accomplish the goals and outcomes defined by the Board for the 5-phase process,
2. Develop the understanding of stakeholders and the public about the situation; gather input from them, synthesize it, ask for their feedback (i.e., did we hear you accurately?), and finally, build their support,
3. Use the public's input and feedback to develop recommendations for the District regarding water use options.

See Appendix 1 for the WRP Advisory Committee Charter and Process Plan.

The AC established a Citizen's Study Group, comprised of invited stakeholders and citizens randomly selected and invited from the voter rolls. They wanted to provide more continuity of citizen participation in the multi-phased process while also engaging citizens who would not normally come to public meetings. The AC met with the Citizen's Study Group in each of the three phases in which the public was involved: Education and Evaluation Criteria; Generate Options; and, Evaluate Options.

In collaboration with the District, the AC conducted a day-long Water Workshop on 19 January 2010, to increase public awareness in the following areas:

- the District's role in the region and its current situation,
- the context within which the District operates (California water rights law),
- the four basic categories of water use,
- the ecology of the Mad River watershed, and
- regional economic development considerations.

The AC gathered input and feedback from the public at nine meetings, including the Water Workshop. Citizens were also encouraged to contribute their ideas on-line. Three meetings were held in each of two phases—Education and Evaluation Criteria Phase and Evaluate Options—in McKinleyville, Arcata, and Eureka. Two were held in the Generate Options Phase in Bayside in addition to the Water Workshop. And, in a break from more traditional public processes, the AC conducted these public meetings (and the meetings with the Citizen's Study Group) in a manner that encouraged meaningful conversation with everyone present. This included asking people to talk in various groups of four at small tables with Board members and AC members acting as table hosts to answer questions, listen, and faithfully scribe citizens' input and feedback on the paper "table cloths."

At each of the public meetings and meetings with stakeholder groups, members of the Board and the AC provided unbiased, neutral education about the District's current situation, California

water rights law, the basic options for water use, the Mad River watershed, and regional economic development considerations (see Section 3.4). They also described the WRP process so people could understand their role in it and the progress being made. As the AC synthesized the ideas for water use from the Citizen's Study Group and the public meetings, they provided balanced analyses of each of the options including their benefits, costs, and potential implications.

The AC collaborated with District staff to implement a robust communication effort that included press releases, op-ed pieces, radio and TV interviews, emails and paid advertising (see Section 3.4).

Prior to generating options for increased water use, the AC developed an understanding of the community's values and built agreements on its priorities around water use. With input from the Citizen's Study Group and feedback from the first round of three public meetings, they developed a list or "framework" for evaluation. They used this framework to evaluate potential options and to decide on the recommendations they made to the Board (see Section 3.1).

In addition to regular updates that the Board received from the two Board members on the AC and from the District General Manager, members of the AC met with the Board periodically to keep them current on their "in-progress" thinking and to solicit their ideas and advice.

At each public meeting, the AC gathered feedback on the effectiveness of the meetings and learned from it. For example, in the initial round of public meetings, citizens noted how important it was to them to be able to talk with a member of the Board or the AC in a small group. This practice was repeated in the rest of the public meetings. (The feedback on the public meetings was very positive. For a summary of the feedback see Appendix 5).

3 Results

3.1 Result 1. Created a Framework for Evaluating Water Resource Planning Options

The AC anticipated that many ideas or “options” for water uses would be generated by the various stakeholder groups and the public. These options would come from a broad spectrum of participants, thus were anticipated to be quite varied. Some of these options would likely be more viable than others, some more costly, some may generate revenues while others may not. Some may not even be legally permitted or may be difficult to approve or permit. Given the likelihood of such wide variation, the AC decided they needed a framework or mechanism to evaluate these options, but using whose values and criteria?

The AC also anticipated that generating options for water use without some understanding of what the community values regarding the use of water might open the door to unnecessary conflict. This was not the only reason criteria were developed first. It was done to avoid “solution wars” and to build as much agreement as possible on what is important to the community.

The AC determined that the Citizen’s Study Group and public should determine the values they consider to be the most important and germane when considering future use of water. Once the public’s values and considerations were known, they could be applied to the many potential water use options generated during this planning process. By late August 2009, a detailed outline describing the above concept was presented to the HBMWD and the implementation of this phase began (see Section 2). Numerous meetings were held and public feedback was gathered.

A subcommittee of the AC reviewed all the table and wall notes collected during the initial meeting of the Citizen’s Study Group and the report-outs from the three public meetings. There were hundreds of words and scores of principles, values, and criteria. Upon examination, many were similar, and the subcommittee was able to group the values and criteria into seven primary categories. While there was a natural ranking, due to the number of times a particular value was mentioned, the subcommittee consciously avoided ranking the criteria and the seven primary categories. The seven general categories of values or criteria were:

1. Local Control
2. Legally Viable
3. Environmental Concerns
4. Access Concerns
5. Economic Development
6. District Cost Recovery, and
7. Quality of Life.

Upon even closer examination, two categories resonated with the public and the AC members far more than any others: Local Control and Legally Viable. Therefore, these two were elevated to a level of importance commensurate with that feeling. The subcommittee and the AC began to consider Local Control and Legal Viability as “thresholds”, i.e., an “acid test” that any water use option must pass in order to be developed and pursued. If an option meets or passes the two

threshold criteria, then the option could be measured against the remaining five criteria. Specifically, the threshold criteria became:

- Local Control: The option must allow the HBMWD to protect, maintain and determine uses of the existing water rights; and
- Legally viable: The option must implement actions that are currently legal, or if they require permits, variances or changes to law, those are likely to be obtained.

The other five criteria categories were further described based again on public feedback. The title of the 1-page document describing the seven categories developed into the “Framework for Evaluating Water Resource Planning Options”. The AC then wrote a “Guidance for Applying the Framework” because we realized that both the District’s Board and the public would need a brief and simple explanation for using the framework. Often referred to more simply as the “Evaluation Framework”, it was approved by the HBMWD on 9 December 2009.

All evaluation criteria are important, as they represent the public’s stated priorities relative to water use planning. Each option may not meet all the criteria, but all criteria should be considered to guide the HBMWD Board of Directors’ decision-making.

Framework for Evaluating Water Resource Planning Options

Thresholds	
Local Control	The option must allow the Humboldt Bay Municipal Water District to protect, maintain, and determine uses of the existing water rights.
Legally Viable	The option must implement actions that are currently legal, or if they require permits, variances or changes to law, those are likely to be obtained.
Evaluation Criteria: For Example, Does the option...	
Environmental: <i>Support the preservation or enhancement of the Mad River eco-system?</i>	Maintain in-stream flows for wildlife and people living along the Mad River?
	Protect and maintain wildlife and fisheries in the Mad River watershed?
	Enhance or increase wildlife and fisheries habitat area and/or quality?
	Use the least energy possible in delivery of water?
Access: <i>Provide access to a sufficient and long-term supply of high quality water for multiple purposes?</i>	Maintain use of as much of the permitted flows (approx. 75 MGD) as possible?
	Provide high quality drinking water that meets or exceeds water quality standards?
	Provide sufficient water supply throughout the term of the District's current permit?
	Allow for river- and lake-based recreation?
	Protect and maintain access for Native Americans?
Economic Development: <i>Employ water as an asset to benefit the regional economy?</i>	Contribute to the viability and vitality of the regional economy?
	Encourage technological innovation and entrepreneurship?
	Create or retain jobs within the regional economy?
District Cost Recovery: <i>Provide funding to the District for infrastructure maintenance, and thereby, decrease the costs to domestic ratepayers?</i>	Contribute to covering the District's costs for infrastructure maintenance, upgrades and/or expansion?
	Increase the District's customer base?
	Decrease or maintain customer rates?
	Utilize existing industrial system infrastructure?
	Generate energy for system use or net sale?
Community Quality of Life: <i>Provide recognizable benefits to, and improvements in, our community's "Quality of Life"?</i>	Support and improve community and environmental health, reduce stress, support spiritual needs and sense of purpose?
	Encourage community engagement?
	Inspire wide-spread community support?

Guidance for Applying Framework

This guidance document was prepared to assist the Humboldt Bay Municipal Water District Board of Directors (HBMWD Board of Directors) as they consider options for water resource planning. The HBMWD Board of Directors appointed a Water Resource Planning Advisory Committee to prepare and recommend evaluation criteria and water use options. The Advisory Committee developed this document through an extensive community engagement process that gathered input from a 60+ member Citizen's Study Group and over 190 participants in three public meetings in the District.

The public's values are expressed in both the "thresholds" and the "evaluation criteria". Together, they form a decision-making framework that can guide the HBMWD Board of Directors, the Advisory Committee, and the public, as they consider specific options for water use.

The most frequent and strongly expressed value from the community was that the District retains "local control of the water rights." This value has been made a "threshold." For any option to be evaluated, it must first fulfill and pass this "local control" threshold. A second threshold is "legal viability"; if an option is not legally viable, then it should not be considered further.

Once an option passes the thresholds, the evaluation criteria can be applied to determine how well the option fulfills community values.

All evaluation criteria are important, as they represent the public's stated priorities relative to water use planning. Each option may not meet all the criteria, but all criteria should be considered to guide the HBMWD Board of Directors' decision-making.

The criteria should be applied in such a way that they allow for adaptation as conditions evolve.

3.2 Result 2. Identified Options Evaluated by Public and the AC

Once the public and the AC had developed the criteria by which to judge water use options, the even harder work of developing water use options began. Water use ideas came from many sources and continued to be submitted to the AC throughout the rest of the planning process. The majority of the water use option ideas came during three organized events especially designed for that purpose:

- The 19 January 2010 Water Workshop
- Two public meetings on 1 February 2010

The AC members also collected water use ideas from their “constituents”, but this occurred informally via conversations, email and social media. Some members discussed the ideas and obtained more during meetings or presentations specific to their constituents (for example, the Humboldt Association of Realtors or the Northcoast Environmental Center). Other members solicited ideas via email, using personal or organized email lists; ideas and comments were then forwarded to the District or were received directly by the District.

Water use ideas were generated or collected in three broad categories of use as allowed by California Water law: A) use water within HBMWD existing District boundaries; B) sell or transfer water for use outside District boundaries; and C) release water for environmental restoration/enhancement (refer to Section 1.2). . A fourth category was added as a result of people’s input, hydro-electric or recreation. A fifth option—take no action and potentially lose water rights in the future—was not considered because the purpose of this planning effort was to involve the community in developing options for increased water use, to protect the District’s water rights and to make up for significant decreases in District revenues.

The AC synthesized all the ideas received and organized them into 12 specific options. They did a preliminary analysis of each, which included estimating the potential amount of water each option would use, projecting how long it would take to develop and implement the option, assessing how well the option measured up to the evaluation criteria (that is, the Evaluation Framework), and identifying the potential benefits/likes and costs/concerns for the option. Finally, the preliminary analysis included defining the critical success factors or conditions for successful implementation of the option. (These analyses are presented in Section 3.3.)

The AC reviewed these options and the preliminary analyses with the Citizen’s Study Group in April 2010 and with the public at three meetings occurring throughout June 2010. Participants at these four meetings elaborated on and discussed the advantages and disadvantages of the options.

The CSG’s and the public’s comments at these meetings echoed what they had said during the meetings in the Education and Evaluation Criteria Phase in Fall 2009; specifically, the public felt it is important to maintain local control, maintain reasonable water rates, benefit the environment and the economy, and generate revenue for the District for operating, maintaining, and improving the water system (Table 2).

Table 2. Water Use Options based on public and stakeholder input

Categories of Water Use (per CA Water Law)	Water Use Options (based on public and stakeholder input)	Potential Water Use (up to 60 MGD)	Likely Time Period Necessary to Develop		Time Frame for Operation (When could water be “in use”?)		
			Research or Studies	Implementation	Short-Term (within 1-2 Years)	Medium (within 2-5 years)	Long-Term (within 5-10 years)
Use Water within District's Existing Boundaries	A1. Actively pursue companies that utilize significant water in their process and/or product to locate on the Samoa Peninsula and contract for water purchase	Unknown (likely less than 5 MGD, if any)	Varies personal interviews and contacts	Varies, none vs. many years	<-----Depends on many factors----->		
	A2. Expand HBMWD District boundaries to serve more commercial/agriculture and municipal users (and when expanded, use would be within the District)	Unknown (likely less than 5 MGD)	District 1 - 2 years plus LAFCO 6-12 months	Unknown (depends on opportunity & infrastructure needs)	<----- Depends on many factors ----->		
	A3. Create a lake in Blue Lake for recreation and fishing purposes (or at another area adjoining lower Mad River)	Unknown (assuming one turn per month – about 1 MGD)	2 - 3 years	1 - 2 years		X	
	A4. Develop general aquaculture for appropriate species	2 - 5 MGD	1 - 2 years	2 - 3 years		X	
	A5. Divert Mad River water to existing Mad River Fish Hatchery (in lieu of well water)	Peak = 7 MGD Min = 0.2 MGD	3 - 4 years	2 - 3 years		X	X
	A6. Develop aquaculture industry based on algae for a variety of uses (e.g. biomass, fuels, carbon sequestration)	2 - 7 MGD	1 - 2 years	2 - 3 years		X	

Categories of Water Use (per C.A. Water Law)	Water Use Options (based on public and stakeholder input)	Potential Water Use (up to 60 MGD)	Likely Time Period Necessary to Develop		Time Frame for Operation (When could water be "in use"?)		
			Research or Studies	Implementation	Short-Term (within 1-2 Years)	Medium (within 2-5 years)	Long-Term (within 5-10 years)
Sell or Transfer Water for Use Outside District	B1. Sell untreated water to another municipality or public agency for transfer and use within their jurisdiction	Any amount possible up to entire 60 MGD	3 - 4 years	Variable (depends on term, environmental work and infrastructure)		X	X
	B2. Sell untreated water to a private entity for transfer and use by another agency or customer	Any amount possible up to entire 60 MGD	3 - 4 years	Variable (depends on term, environmental work and infrastructure)		X	X
	B3. Build a pipeline in NCRA right-of-way and sell untreated water to Municipalities or agricultural customers in Mendocino or Sonoma Counties	Any amount possible up to entire 60 MGD	5 - 8 years (3 - 4 years up front, and 2 - 4 years engr. & permitting)	3 - 5 years			X
	B4. Transfer water from the Mad River watershed to another watershed (e.g. Van Duzen or Trinity) to enhance instream flows in the receiving watershed for environmental benefit (Note – this could possibly provide municipal or ag water supply too)	Variable (likely between 10 – 30 MGD)	A long time (5 - 10 years)	5 - 7 years			X

Categories of Water Use (per CA Water Law)	Water Use Options (based on public and stakeholder input)	Potential Water Use (up to 60 MGD)	Likely Time Period Necessary to Develop		Time Frame for Operation (When could water be "in use"?)		
			Research or Studies	Implementation	Short-Term (within 1-2 Years)	Medium (within 2-5 years)	Long-Term (within 5-10 years)
Transfer water for environmental restoration/enhancement	<p>C1. Release water from Ruth Lake during summer/fall (with no corresponding downstream diversion) to provide environmental benefit to aquatic species or their habitat</p> <p>(Note #1: Per CA water law, this option would occur via a "transfer" mechanism, and for such to be allowed, a specific environmental benefit must be defined)</p> <p>(Note #2: During planning process this was called the in-stream flow option)</p>	<p>Any amount possible up to entire 60 MGD</p>	<p>3 - 5 years</p>	<p>Variable (depends on environmental studies & approvals, as well as any infrastructure to implement)</p>	<p>X (possible)</p>	<p>X (more likely)</p>	
	<p>D1. Energy production via installation of micro-hydropower (with the possibility of in-stream flow as secondary use)</p>	<p>Unknown (likely limited given grid factors, river gradient and geography)</p>	<p>3 - 5 years</p>	<p>Variable (depends on environmental work and infrastructure) Likely 3-5 years</p>		<p>X</p>	
Other: Hydro-electric or Recreation	<p>D2. Recreational opportunities at Ruth Lake</p>	<p>n/a</p>	<p>This option was not evaluated since it is not a consumptive use of water, and therefore, would not utilize the District's water rights as other options would.</p>				

3.3 Result 3. Created Detailed Descriptions of Options

The AC members assigned each other water use options to investigate. Their water use option descriptions follow.

“A” Recommendations— Use Water within District’s Existing Boundaries

Recommendation A1.

Actively pursue companies that utilize significant water in their process and/or product to locate on the Samoa Peninsula and contract for water purchase

Water use: Unknown (likely less than 5 MGD) **Time frame:** Depends on many factors. Anywhere between 2 and 10 years

How A1. relates to Framework for Evaluating Water Resource Planning Options

Thresholds: Protects local control; is legally viable

Environment: No change to District operations in the Mad River

Access: Provides untreated water to customers on Samoa Peninsula; does not adversely affect access

Economic development: Supports economic development and job creation

District cost recovery: Might provide rate payer relief and contribute to infrastructure maintenance

Quality of Life: Inspires wide-spread community support and encourages community engagement

Potential benefits/likes	Potential concerns/costs
<ul style="list-style-type: none"> • Beneficial use of excess water • Keeps water local • Protects our water rights • Contributes to cost recovery of regional system and provides ratepayer benefits • Enhances District's financial strength • Support job and business growth • No need to change existing water rights permits 	<ul style="list-style-type: none"> • Requires long-term, on-going investment to uncover, pursue and respond to possibilities without a strong expectation of success (knowledgeable staff, travel, marketing, coordination with permitting agencies) • Significant barriers to businesses locating here • Lack of transportation options • Limitations on existing road ways • Distance from distribution center • Limited workforce • Only a small and partial solution to retain water rights, provide ratepayer relief, and contribute to infrastructure maintenance

Critical success factors (conditions for success)

- A one-year, fully-funded, and evaluated effort to pursue companies could provide useful insights on whether to continue the investment and how to do so at lower cost
- Addressing or mitigating local barriers to businesses
- Effective coordination with permitting agencies (e.g. County, Coastal Commission) and private landowners on the Samoa Peninsula
- Possible relocation incentives
- Businesses would need to be environmentally friendly

“A” Recommendations— Use Water within District’s Existing Boundaries

Recommendation A2.

Expand HBMWD’s District boundaries to serve more commercial / agriculture and municipal users (and when expanded, use would be within the District)

Water use: Unknown (likely less than 5 MGD) unless to a larger municipality such as Fortuna

Time frame: Depends on municipal, commercial, or agricultural opportunities, as well as infrastructure needs (likely between 3 - 10 years)

How A2. relates to Framework for Evaluating Water Resource Planning Options

Thresholds: Protects local control; is legally viable.

Environment: No change to District operations in the Mad River.

Access: Provides long-term supply of quality untreated water to incorporated areas.

Economic development: Supports economic development and job creation.

District cost recovery: Spreading the base costs should provide rate payer relief and improve revenue.

Quality of Life: Support and improve community health within the area being served.

Potential benefits/likes	Potential concerns/costs
<ul style="list-style-type: none"> • Beneficial use of excess water • Protects our water rights • Keeps water and service local • Will enhance District’s financial strength • Could support job and business growth • Increased customer base would spread the cost • Not expensive to expand District boundaries • More of the county would have access to safe drinking water • May be easiest option with State Water Resources Control Board (local decision) 	<ul style="list-style-type: none"> • Requires some regulatory approval (unclear who bears this cost) • Potential tension between existing customers and new customers in expanded District as well as how to organize District and spread costs as to not burden existing customers. • Cost of feasibility analysis & analysis of impacts of expansion on District delivery system • High infrastructure cost • May support additional (controversial) growth in Humboldt County • Does this option utilize the District’s industrial system- would it help solve our problem? • Only a partial solution, but seen as a necessary step by the public

Critical success factors (conditions for success)

- Gaining consensus among new and existing customers
- Existence of customers who desire water and water delivery services
- Customers must be prepared to pay a fair share for the infrastructure and rates on par with other customers
- Infrastructure financing must be found (local, state or federal)
- Integration with General Plan

“A” Recommendations— Use Water within District’s Existing Boundaries

Recommendation: A3.

Create a lake in Blue Lake, CA to facilitate recreation and fishing (or at another area adjoining the lower Mad River).

Water use: 20 +/- Acre-feet (about 6.5 MG static volume); Assuming 1 turn/month = < 1 MGD

Time frame: 3 – 5 Years

How A3. relates to Framework for Evaluating Water Resource Planning Options

Thresholds: Protects local control; is legally viable.

Environment: Effect on in-stream flow will be negligible and there is no obvious adverse effect on wildlife or fisheries, in fact they may be enhanced by the creation of the lake.

Access: Access may be affected if lake is private or municipal as a user fee may be charged. Since water will be returned to the river there should be a minimal effect to downstream municipal users.

Economic development: Lake operation and use may contribute to the regional economy, recreational based businesses, tourism, hospitality and food serves.

District cost recovery: Due to the small volume of water being sold, revenue generated for the District would be minimal.

Quality of Life should be enhanced by the public’s use of this resource.

Potential benefits/likes	Potential concerns/costs
<ul style="list-style-type: none"> • Effect on in-stream flow will be negligible and there is no obvious adverse effect on wildlife or fisheries, in fact they may be enhanced by the creation of the lake. • Local use, tourism, wildlife and a small economic benefit should be realized. • Small businesses may open up to support recreation, boating, fishing & kayaking. • Wildlife, and bird population may increase and support hikers and photographers. • Depending on site conditions (especially gradient) potential for micro-hydro application with “return” water (see option D.1.) 	<ul style="list-style-type: none"> • Location and size are yet to be determined plus the cost of acquisition and water transport. • The water used to feed the lake will be returned to the river, but may require filtration to mitigate contamination. • Only a small and partial solution to retain water rights, provide ratepayer relief, and contribute to infrastructure maintenance

Critical success factors (conditions for success)

- Must have community support and have interested participants (e.g., owner, operator).
- Appropriately located land for ease of water inflow and outflow must be found.
- There must be protection from infestation of non-native/invasive species.
- Adequate filtration must be installed to insure safe water is being returned to the Mad River.

“A” Recommendations— Use Water within District’s Existing Boundaries

Recommendation A4.

Develop general aquaculture for appropriate species

Water use: 2-5 MGD

Time frame: 3 - 5 years

How A4. relates to Framework for Evaluating Water Resource Planning Options

Thresholds: Protects local control; is legally viable.

Environment: No change to District operations in the Mad River.

Access: Would not adversely affect access to a long-term supply of quality untreated water.

Economic development: Supports economic development and job creation.

District cost recovery: Generates revenue for the district.

Quality of Life: Should not detract from quality of life and may provide benefits through jobs/economic development and another “Humboldt Made” product.

Potential benefits/likes	Potential concerns/costs
<ul style="list-style-type: none"> • Beneficial use of excess water • Protects our water rights • Keeps water local • Will enhance District's financial strength • Supports job and business growth • Local product • Potential for significant growth • Potential to return aquaculture water to lower Mad/estuary after cleaning 	<ul style="list-style-type: none"> • Requires multiagency cooperation and permitting • Requires entrepreneurs to make capital investments • Many potential (and potentially controversial) environmental issues regarding effluent and filtration • Markets are only in their infancy and will need to be developed as the industry expands • Only a small and partial solution to retain water rights, provide ratepayer relief, and contribute to infrastructure maintenance

Critical success factors (conditions for success)

- Cooperation from County Economic Development department to help recruit entrepreneurs.
- Support and cooperation from multiple agencies (e.g., CDFG, NOAA Fisheries, Coastal Commission, US Fish and Wildlife)
- Must find entrepreneurs to build this industry.
- Available land in 100 to 500 acre units would be required.
- Must use best available methods to reduce environmental impacts and garner public support.

“A” Recommendations— Use Water within District’s Existing Boundaries

Recommendation A5.

Divert Mad River water to the existing Mad River Fish Hatchery (in lieu of existing well water)

Water use: At peak times 7 MGD

During “minimal” times 0.2 MGD

Time frame: 5 - 7 years

How A5. relates to Framework for Evaluating Water Resource Planning Options

Thresholds: Protects local control; is legally viable.

Environment: Minor change to District operations in the Mad River. A new point of diversion would be added 1-2 miles upstream of current Essex diversion.

Access: Would not adversely affect access to a long-term supply of quality treated or untreated water.

Economic development: Supports economic development. Potential to create some jobs and support sport fishing industry.

District cost recovery: Does not utilize the current industrial water system. Potential to generate modest (but likely not significant) revenues for the district.

Quality of Life: Should have no impact on quality of life in the area.

Potential benefits/likes	Potential concerns/costs
<ul style="list-style-type: none"> • Beneficial use of excess water • Protects our water rights and keeps water local • Likely to be modest contribution to District revenues • Supports jobs and sports fishing industry • Potential financial benefits to hatchery (pumping well water is costly, so likely to reduce operating costs and carbon footprint) • Could accommodate increase in function of hatchery to a “recovery” hatchery to support return of endangered salmon species • Using Mad River water could be better for native fish than current well water possibly making hatchery more viable/sustainable 	<ul style="list-style-type: none"> • New infrastructure would be required to get the water to the hatchery and to address the variable turbidity in Mad River water. • Operating costs unknown, but new costs would offset power savings. • Would require extensive coordination and ultimate approval from CA Dept of Fish and Game and possibly NOAA Fisheries • Long-term viability of the hatchery is questionable given current regulatory and legal environment surrounding hatcheries (i.e., native fish vs. hatchery stock) • Only a small and partial solution to retain water rights, provide ratepayer relief, and contribute to infrastructure maintenance

Critical success factors (conditions for success)

- Resolution of current regulatory/legal environmental issues with hatcheries (i.e., native fish vs. hatchery stock).
- Financially viability (i.e., if the costs to build and maintain new infrastructure are less than the current pumping costs).
- Support, cooperation, and funding from CA Department of Fish and Game and NOAA Fisheries and appropriate.

“A” Recommendations— Use Water *within* District’s Existing Boundaries

Recommendation A6.

Develop an aquaculture industry based on algae for a variety of uses, e.g., biomass, fuels, and carbon sequestration

Water use: 2-5 MGD – Possible more depending on size of projects (Possible Pulp Mill use would increase this use to 5-7 MGD)

Time frame: 3 - 5 years or more

How A6. relates to Framework for Evaluating Water Resource Planning Options

Thresholds: Protects local control; is legally viable.

Environment: No change to District operations in the Mad River.

Access: Would not adversely affect access to a long-term supply of quality untreated water.

Economic development: Supports economic development and job creation.

District cost recovery: Generates revenue for the district.

Quality of Life: Should not detract from quality of life and may provide benefits through jobs/economic development, export of a “Humboldt Made” product and possible carbon reduction.

Potential benefits/likes	Potential concerns/costs
<ul style="list-style-type: none"> • Beneficial use of excess water • Protects our water rights • Keeps water local • Will enhance District's financial strength • Supports job and business growth • Local product • Potential for significant growth • Potential to return aquaculture water to lower Mad/estuary after cleaning • If Carbon Sequestration is successful, this could contribute to the Pulp mill or other industrial users becoming Carbon neutral or negative. 	<ul style="list-style-type: none"> • Requires multi-agency cooperation and permitting • Requires entrepreneurs to make capital investments • Many potential (and potentially controversial) environmental issues regarding effluent and filtration • Markets are only in their infancy and will need to be developed as the industry expands • Carbon Sequestration benefits are not yet proven and may be challenged • Only a small and partial solution to retain water rights, provide ratepayer relief, and contribute to infrastructure maintenance

Critical success factors (conditions for success)

- Cooperation from County Economic Development department to help recruit entrepreneurs.
- Grant Money will be necessary to study the feasibility of either a biomass operation or a Carbon Sequestration operation. These two operations could be combined.
- Support and cooperation from multiple agencies (e.g., CDFG, NOAA Fisheries, Coastal Commission, US Fish and Wildlife)
- Must find entrepreneurs to build this industry.
- Available land in 100 to 500 acre units would be required.
- Must use best available methods to reduce environmental impacts and garner public support.

“B” Recommendations— Sell or Transfer Water for Use Outside District

Recommendation B1.

Sell untreated water to another municipality or public agency for transfer and use within their jurisdiction

Water use: any amount up to 40-60 MGD

Time frame: (a) short term drought relief 1 – 2 years; (b) longer- term contract: 5 - 10 years

How B1. relates to the Framework for Evaluating Water Resource Planning Options

Thresholds: Legally viable; and with appropriate structure of sale/transfer arrangement and appropriate contract provisions, can maintain local control of water rights

Environment: No change to District operations in the Mad River

Access: Would not adversely affect access to a long-term supply of quality treated or untreated water.

Economic development: Likely to provide some jobs in the arena of transport.

District cost recovery: Utilizes existing industrial water system; provides revenue to recover District costs and revenues for necessary infrastructure replacement, thereby lowering water rates

Quality of life: Should not negatively impact quality of life, however, may not engender widespread community support and may contribute to population growth in receiving area.

Potential benefits	Potential concerns/costs
<ul style="list-style-type: none"> • Protects water rights (beneficial use of available water) • Uses HBMWD’s current infrastructure (industrial pipeline) • Contributes to District cost recovery and infrastructure replacement/maintenance • Provides rate payer relief • Customers available, potentially willing and able to pay good price • Meets long-term need; unlikely municipal customer would go bankrupt or default • Need for water might make customer(s) more willing to agree to unique terms such as defined uses, short term contracts • Could be a safety mechanism for drought strategies and emergency preparedness 	<ul style="list-style-type: none"> • Customers may become dependent on water supply and litigate or legislate for terms beyond contractual agreements • Could put District in vulnerable position if customer’s legal/political capacity is greater than District’s and they want to take control of water rights • Transport mechanism must be developed (e.g. pipeline, tankers, barges, water bags). The latter – tankers, barges, water bags – would be new territory for CA water agencies • If infrastructure costs are high to receiving customer, customer may require long-term contract and water may be tied to bond issues • Could feed urban growth and unsustainability at receiving end

Critical success factors (conditions for success)

- Certainty that District can keep control of the water rights (via solid contract that puts the District in a strong position)
- Setting terms for water use in contract (for example, conservation criteria)
- Working with an agency “closer to home” might be more politically viable
- Working with a smaller agency similar to the District in terms of political and legal strength
- Customer has to bear all cost of transport, treatment, infrastructure and environmental compliance

“B” Recommendations— Sell or Transfer Water for Use Outside District

Recommendation B2.

Sell untreated water to a private entity for transfer and use by another agency or customer

Water use: any amount up to 40-60 MGD

Time frame: (a) short term drought relief 1 – 2 years; (b) longer-term contract: 5 - 10 years

How B 2. relates to the Framework for Evaluating Water Resource Planning Options

Thresholds: Legally viable; and with appropriate structure of sale/transfer arrangement and appropriate contract provisions can maintain local control of water rights, but risk may be greater than under option B.1.

Environment: No change to District operations in the Mad River

Access: Would not adversely affect access to a long-term supply of quality treated or untreated water.

Economic development: Likely to provide some jobs in the arena of transport

District cost recovery: Utilizes existing industrial water system; provides revenue to recover District costs and revenues for necessary infrastructure replacement, thereby lowering rates

Quality of life: Should not negatively impact quality of life, however, may not engender widespread community support

Potential benefits	Potential concerns/costs
<ul style="list-style-type: none"> Likely protects water rights (beneficial use of available water) Uses HBMWD’s current infrastructure (industrial pipeline) Contributes to District cost recovery and infrastructure replacement/maintenance Provides rate payer relief Broker or other private party may have access to multiple markets and may be willing to pay a “higher” price Broker or other private party may insulate District from risk of dependency of end user 	<ul style="list-style-type: none"> Re: protection of water rights, risk may be greater than sale to a municipality (option B.1.) Customers may become dependent on water supply and litigate or legislate for terms beyond contractual agreements Could put District in vulnerable position if customer’s legal/political capacity is greater than District’s and they want to take control of water rights Transport mechanism must be developed (e.g. pipeline, tankers, barges, water bags). The latter – tankers, barges, water bags – would be new territory for CA water agencies If infrastructure costs are high at receiving end, customer may require long-term contract Could feed urban growth and unsustainability at receiving end If end user is outside the U.S., potential for international trade agreements and governance (NAFTA, WTO) to come in to play and create new legal implications which could adversely affect the District

Critical success factors, success dependent on:

- High certainty that District can keep control of the water-legal contract that is bullet proof and puts the District in a strong position
- Working with a smaller agency one more balanced with District in terms of political and legal strength
- Working with an agency “closer to home” would be more politically viable
- Setting terms for water use or setting conservation criteria that must be met could mitigate environmental concerns
- Customer has to bear cost of transport, treatment and infrastructure

“B” Recommendations— Sell or Transfer Water for Use Outside District

Recommendation B3.

Build a pipeline in NCRA right-of-way, deliver water to Lake Mendocino, and sell to municipalities or agricultural customers in Mendocino, Sonoma Counties or points further south

Water use: any amount up to 40-60 MGD

Time frame: Variable: Possibly 8 - 13 years

How B3. relates to the Framework for Evaluating Water Resource Planning Options

Thresholds: Legally viable; and with appropriate structure of sale/transfer arrangement and appropriate contract provisions can maintain local control of water rights, but risk likely greater than under option B.1.

Environment: No change to District operations in the Mad River; however, could be environmental impact beyond District’s diversion point

Access: Could adversely affect access to a long-term supply of quality treated or untreated water.

Economic development: Creates jobs (both during construction and afterwards to operate and maintain new system), and contributes to vitality of regional economy

District cost recovery: Utilizes existing industrial water system; provides revenue to recover District costs, plus revenues for necessary infrastructure replacement, thereby lowering rates

Quality of life: May impact quality of life positively or negatively along transfer route and may not engender widespread community support

Potential benefits	Potential concerns/costs
<ul style="list-style-type: none"> • Protects water rights • Uses HBMWD’s current industrial pipeline • Contributes to District cost recovery and infrastructure replacement/maintenance • Provides rate payer relief • Customers in Mendocino and Sonoma likely willing and able to pay a “high” price • Water stays in north coast region of CA • Could offset current Eel-to-Russian river diversions, if negotiated in contract. • Encourages agricultural development and mitigates catastrophic crop loss due to drought or absence of sufficient water supply • Possibly a mechanism to maintain railroad right-of-way • Potential for multi-county regional trail system • Could serve multiple communities in transit 	<ul style="list-style-type: none"> • Very high construction cost. Preliminary engineering estimate is \$1 billion for pipeline that delivers 60 MGD (60-inch pipeline and multiple pump stations). Preliminary estimate for 10 MGD pipeline is \$285 million (24-inch pipeline and multiple pump stations). • High operation and on-going maintenance costs, especially power for pumping • Significant routing, construction, and environmental issues in Humboldt Bay region • Significant stability issues in Eel River canyon (could plague pipeline as it did railroad) • Long-term contract would be necessary given costs. Risk that customers may become dependent on water supply and litigate for terms beyond contractual agreements • Could put District in vulnerable position if customer’s legal/political capacity is greater • Could feed urban growth and unsustainability at receiving end

Critical success factors:

- Sufficient demand by customers willing to bear cost of infrastructure, transport, and treatment
- Ability to use NCRA right-of-way – approval required
- Customers would have to bear costs entirely
- Relief to the Eel River watershed through contractual stipulation

“B” Recommendations— Sell or Transfer Water for Use Outside District

Recommendation B4.
 Transfer water from the Mad River watershed to another watershed to enhance in stream flows in the receiving watershed for environmental benefit.

Water use: Variable (likely between 10-30 MGD) **Time frame:** Highly Variable: Possibly 10 - 20 years

How B4. relates to Framework for Evaluating Water Resource Planning Options

- Thresholds: Legally viable but might risk maintaining local control (would likely create a dependency by the receiving watershed)
- Environment: Probably detrimental to the ecosystem of the Mad River basin as it adds a diversion point just below Ruth Lake; impacts in receiving watershed unknown
- Access: Will reduce downstream access to treated and untreated water
- Economic development: Short term benefit in construction of new infrastructure
- District cost recovery: Minimal if any as no apparent paying customer
- Quality of Life: Would adversely affect Humboldt County residents (e.g., flora, fauna, recreation); may not engender widespread community support

Potential benefits/likes	Potential concerns/costs
<ul style="list-style-type: none"> • Could improve the aquatic conditions in other river basins during low summer and fall flows • May positively impact migration opportunities for listed species ultimately improving regional fisheries • May be beneficial to downstream municipal and agricultural users 	<ul style="list-style-type: none"> • Very high cost for construction (actual dollars not known) and high operational costs (would have to pump given elevation differences between watersheds) • Not likely to be a “paying” customer for this option unless funded by State or Federal Government or mitigating entity • Dependency on water (so District may lose control of its water rights and uses) • Potential negative effect on Mad River flows (and would require review of current Habitat Conservation Plan) • Blending of water from different watersheds is an emerging biological concern (i.e., for migrating salmon)

Critical success factors (conditions for success)

- Would have to prove through environmental study that Mad River is not damaged and receiving basins truly benefit
- Would need a substantial funding source or increase local rates
- Need substantial community agreement that beneficial uses along other rivers are more important than on the Mad River
- Need substantial support and agreement among regulatory agencies

“C” Recommendations— Transfer water for environmental restoration/enhancement

Recommendation C1.

Release of water from Ruth Lake during summer & fall months, with no or diminished diversion at Essex, to provide environmental benefit to aquatic species and their habitat.

Water use: From 45-60 MGD

Time frame: Variable: Likely 5 - 10 years

How C1. relates to Framework for Evaluating Water Resource Planning Options

Thresholds: Protects local control of water rights; is legally viable, however, (a) this may be a legal test case for this use; and (b) if the additional flow proves to enhance or improve the habitat or listed species, then Federal protection may prevent District using the water for other purposes in the future.

Environment: No change in the Mad River to the current diversion point, however, there would be a nominal increase in flows to the estuary during the summer and fall with impact unknown.

Access: Will maintain a high quality and sufficient drinking water and enhance river-based recreation and access for all.

Economic development: If this use proves to benefit salmonid species, it is possible that in time there could be an increase in commercial and recreational fisheries and the related economy.

District cost recovery: Does not use the industrial system and not likely to contribute to cost recovery or rate payer relief

Quality of Life: Increases health of the salmonid fishery and provides higher and more aesthetic flows in the lower river areas.

Potential benefits/likes	Potential concerns/costs
<ul style="list-style-type: none"> ● Likely benefit to fresh water habitat. ● Likely increase in salmonid rearing habitat with potential increases in salmonid populations. ● Potential increase in riparian habitat, with a potential for the red legged frog, willow flycatcher and other species to be enhanced. ● Potential improvement in water quality, ie. higher releases may decrease in toxic algae and lower water temperatures. 	<ul style="list-style-type: none"> ● Since this may be one of the first dedicated uses of in-stream flows, there may be challenges (legal or before State Water Board) ● Little or no information on how increased flows may affect the tidal prism in the estuary ● Impact of additional water not well understood: ● Study costs to determine if additional water would increase rearing and riparian habitat in substantive and important locations and times ● Study costs to determine effects on estuarine species, and possible mitigation monitoring on long fin smelt (since it is an estuarine fish) ● Ability to use water for other purposes in the future after being dedicated for in-stream flow purposes is unknown and may be at risk ● No direct District cost recovery and no ratepayer relief

Critical success factors (conditions for success)

- Multiple agency cooperation and approvals.
- Grant funding for the unknown number and extent of studies.
- Funding for ongoing (10 years +/-) monitoring of the effects.
- District must maintain local control or the ability to reallocate water if a “paying” customer is found.

“D” Recommendations — Other: Hydro-electric or Recreation

Recommendation D1.
Energy production (via micro-hydropower) within the Mad River stream channel

Water use: Unknown- Likely limited as water will be returned to river, with no net use.

Time frame: Variable (depends on environmental work and required infrastructure – both water and power - to implement) Likely 5 - 10 years

How D1 relates to Framework for Evaluating Water Resource Planning Options

Thresholds: Protects local control; is legally viable.

Environment: It would not change the operation of the District in the Mad River substantively and would create a green energy source.

Access: Would not adversely affect access to a long-term supply of quality treated or untreated water

Economic development: Some economic development associated with construction of the project and development of the power technology.

District cost recovery: Increased revenues (although probably limited) given power sales to utility which would have minor positive impacts to ratepayers.

Quality of Life: This is a generally accepted initiative in the community and could reduce district cost

Potential benefits/likes	Potential concerns/costs
<ul style="list-style-type: none"> • Supports in-stream flows as a beneficial use • Creates some jobs during construction and for maintenance • Reliable source of baseload and possibly some “peaking” power production • In stream flows preserved • Micro-hydro power requires a small volume of water • May generate net revenues for ratepayer benefit • Could be used with any other project where water is being returned to river basin such as Blue Lake and Hatchery Options. 	<ul style="list-style-type: none"> • Water not consumptively used (water right implication) • Availability of suitable sites likely to be limited • Sites developed for micro-hydro power require river access and land encroachment • Much of the river between the dam and Essex is relatively inaccessible, so few roads and few power grid access points • Land along the river between the dam and Essex is not owned by the District • Cost of development (roads, grid, power equipment), land acquisition/ lease may outweigh the benefits to rate payers • If District developed project involves rate payer risk

Critical success factors (conditions for success)

- Obtaining funding for feasibility studies and environmental work
- Obtaining funding for land acquisition and site development
- Determining if there are practical and cost effective ways to access the electrical grid
- Finding suitable locations to develop sites along the Mad River
- Community and agency support

3.4 Result 4. Provided Public Outreach and Education

The extent of public outreach and education has been referred to in previous sections; without public input, the Criteria Framework and the Water Use Options could not have been created. We submit that one result of this water resources planning process was successful engagement of the public, as supported by numerous meetings and public service announcements over a wide range of media.

3.4.1 Citizen's Study Group

The Citizen's Study Group consisted of 26 members of the public. Many were randomly selected from voter registration lists and others were invited to join by Advisory Committee members; like the AC, their selection was intended to cover the range of interests in the District's boundaries. Members of the Citizen's Study Group were:

Allen Adams	Darren Mierau
Janet Allen	Duncan McNeill
Craig Benson	John Murray
Terry Coltra	David Narum
David Couch	Bruce Palmer
Dawn Craghead	Cedar Reuben
Yvonne Doble	Colin Sheppard
Michael Esko	Kimberly Simon
Maggy Herbelin	Kahani Skydance
Chris Herbst	Vicki Small
Jennifer Kiff	Michelle Smith
Laura Lazoretto	David Stieglitz
Tanya Marseille	Norman Wright

The CSG met formally twice, on 2 September 2009 and 27 April 2010. Many attended the other public meetings and the Water Workshop.

3.4.2 Public Meetings and the Water Workshop

Public education and input were supported through public meetings and a Water Workshop, which was held in Eureka. Eight public meetings were held in various venues in McKinleyville, Arcata, and Eureka (Table 3); the first three public meetings focused on education and public input on values and what is important, which led to the Evaluation Framework. Two additional public meetings were held prior to the Workshop to provide those that were unable to attend the first set (or wanted a refresher) an opportunity to attend the Workshop with some background knowledge. The last set of three public meetings focused on gathering input for water use options.

Table 3. Eight public meetings were held to support the water use planning process

Date	Location	Primary purpose
October 13, 2009	McKinleyville	Education and input on Evaluation Framework
October 14, 2009	Arcata	
October 22, 2009	Eureka	
January 14, 2010	Eureka	“Refresher/Catch Up” meeting prior to Workshop
February 1, 2010	Humboldt Area Foundation	Two meetings to provide info for those who missed the workshop and to gather ideas for water use
June 1, 2010	McKinleyville	Education and input on water use options
June 3, 2010	Arcata	
June 15, 2010	Eureka	

An all-day “Water Workshop” was held in Eureka on 19 January 2010 (Table 4). It was well attended with over 84 individuals attending for all or parts of the day. The workshop was held as a seminar, with presentations given and “question and answer” session immediately after the presentations. In the afternoon, time was allotted for small-group (table) discussions to gather water use option ideas. Table moderators, primarily AC and Citizen’s Study Group members, facilitated conversation and took notes of thoughts on water use options. The Water Workshop was filmed and aired 11 times on Access Humboldt (Humboldt County’s local public access television station).

Handouts and slide presentations were provided to Workshop participants. Materials provided to the participants are included in Appendix 6. Additional technical information which supported the Mad River and economic development workshop presentations is also included in Appendix 6.

Table 4. Water Workshop Agenda 19 January 2010

Time	Session Title	Presenters
9:00	Welcome & Introduction to Water Resource Planning Purpose, outcomes, agenda	Kaitlin Sopoci-Belknap, HBMWD President Mary Gelinas, Gelinas-James, Inc.
9:45	HBMWD – Overview and Current Situation Infrastructure needs given loss of industrial customers and Ratepayer implications Questions and Answers	Bruce Rupp, HBMWD Director Carol Rische, GM HBMWD Municipal Customers - Neal Carnam, FG- CSD Engineer, and Steve Davidson, GM Humboldt CSD
10:45	<u>Water Rights “101”</u> <ul style="list-style-type: none"> • Principles of California Water Law • HBMWD’s Water Rights Questions and Answers	David Aladjem, Downey Brand, LLP Paula Whealen, Wagner & Bonsignore
11:45	<u>State Context and How it Affects Us</u> <ul style="list-style-type: none"> • Comprehensive Legislative Package • Water Conservation Component • Funding Opportunities 	Aldaron Laird, HBMWD Director David Aladjem
11:55	<u>Water Rights “201”</u> <ul style="list-style-type: none"> • Strategy Development • Water Rights – Two broad Choices available • Water Use – Three categories of water use 	David Aladjem Paula Whealen
12:25	Lunch	
1:10	Water Rights – Questions and Answers	
1:30	<u>The Mad River</u> <ul style="list-style-type: none"> • Overview of the watershed • How the District’s operation affects the river • Potential effects of water use options & types 	Aldaron Laird, HBMWD Director Sheri Woo, H.T. Harvey & Associates (and AC member)
2:15	<u>Economic Development Opportunities</u> <ul style="list-style-type: none"> • Industries with growth potential in our region • Overview of water intensive industries/businesses • How can water be an asset for business/industry? Questions and Answers	Jacqueline Debets, Humboldt County Economic Development (and AC member)
3:15	Framework for Evaluating Water Use Options	Bill Thorington, Humboldt Watershed Council (and AC member)
3:25	<u>Generate Options</u> - CSG and Public Input and Discussion and Report Out	Small groups consider the water use options and generate ideas for potential solutions
4:45	Next steps and feedback on the day	Kaitlin Sopoci-Belknap & Bruce Rupp

3.4.3 Other Group Presentations

Many presentations were made to various stakeholder groups throughout the County.

<u>Group</u>	<u>Date</u>
<u>HBMWD Municipal Customers</u>	
• Water Task Force	12-1-08, 3-31-09, 8-4-09, 11-17-09, 5-12-10
• Staff	Ongoing via monthly meetings
<u>Stakeholder Groups (from which Advisory Committee nominations were invited)</u>	
Building and Central Trades	12-09-08
Central Labor Council	12-09-08 and 05-11-10
Eureka Chamber of Commerce	12-18-08, 05-27-10
Arcata Chamber of Commerce	03-25-09
McKinleyville Chamber of Commerce	03-25-09
Fishery/Watershed Advocates	01-20-09, 02-13-09, 02-27-09
Northcoast Environmental Center	01-28-09, 06-16-10
Humboldt Watershed Council	02-11-09, 05-26-10
Blue Lake Rancheria	02-10-09
Wiyot Tribe	03-9-09
Humboldt County Economic Development Forum	02-26-09 and 05-17-10
Humboldt County Association of Realtors	02-25-09 and 05-26-10
<u>Governmental Entities</u>	
Humboldt County Board of Supervisors	02-3-09, 10-6-09 and 05-11-10
RREDC	02-23-09 with ongoing updates
Humboldt Bay Harbor, Rec & Cons District	02-26-09
HBMWD Employees	Several presentations/discussions
<u>Other Organizations or Service Groups</u>	
HSU Executive Committee	05-14-09
Democratic Central Committee	10-14-09
Eureka Rotary	01-26-09
Arcata Rotary	03-18-09
McKinleyville Kiwanis	04-28-09 and 10-27-09
Arcata Sunrise Rotary	05-1-09
Old Town Rotary	03-30-10
Southwest Rotary	07-30-10

3.4.4 Media Outreach

An extensive media outreach campaign was coordinated, using television, radio, the internet, and print media (Tables 5 and 6)

Table 5. Electronic media outreach

Media type	Outlet and type of message	Date
Television	KIEM press releases and several news interviews	Multiple through process
Radio – Ads and PSA	30 & 60 advertisements and Public Service Announcements recorded and aired on: <ul style="list-style-type: none"> • Bi-Coastal Media (KRED and affiliated stations); • Lost Coast Communications (KHUM and affiliated stations) • Eureka Broadcasting (KINS and affiliated stations) 	September 2009 January, 2010 May/June, 2010
	KHSU - Thursday Night Talk, and EcoNews	10/1/09, 05/26/10, 06/01/10, 6/10/10
	KINS – Talk Shop	10/7/09, 04/24/10, 05/12/10, 08/24/10
Radio – Talk shows and Programs	KMUD - Monday Morning Magazine	10/12/09, 01/18/10, 05/31/10
	KHUM - Coastal Currents	06/02/09, 06/26/10
Internet	HBMWD website – announcements; all material posted in timely manner; and opportunity for public input	On going
	Humboldt Watershed Council (link to HBMWD website and other updates regarding WRP)	On going
	Multiple e-mail notices and status reports sent by Advisory Committee to stakeholders	Ongoing

Table 6. Print media outreach

Date	TITLE
Arcata Eye	
Oct. 7, 2009	“Water’s future going public next week” Eye Staff Report
Oct. 21, 2009	“Water, use it or lose it?” by Gail Gourley
Dec. 23, 2009	“Local control, legality form threshold standards for HBMWD planning” submitted by HBMWD
June 9, 2010	“Water use scoping concludes” by Kevin Hoover
McKinleyville Press	
Feb. 11, 2009	“District envisions rate increases, loss of water rights” by Daniel Mintz
Oct. 7, 2009	“Water district seeks public input” McKinleyville Press Staff Report
Oct. 7, 2009	“Planning for the future of our water” Guest Opinion by Carol Rische
Dec. 2, 2009	“It’s all about the water: District seeks consensus around long-term water challenges” by Carol Harrison
Dec. 23, 2009	“Local control, legal viability key to future of Mad River water” submitted by HBMWD
Jan. 27, 2010	“More opportunities for public to help craft plan for future of Mad River water” submitted by HBMWD
May 19, 2010	“Putting an actual lake in Blue Lake among ideas for using Mad River water” by Daniel Mintz
June 16, 2010	“Building a lake in Blue Lake and attracting new industries among water solutions proposed” by Elaine Weinreb

Times Standard	
Feb. 4, 2009	“Water District turns to public for resource protection solutions” by Jessie Faulkner http://www.times-standard.com/ci_11624429?IADID=Search-www.times-standard.com-www.times-standard.com
Oct. 4, 2009	“Future flow: Shifting needs prompt plans to protect the region’s water supply” by John Driscoll http://www.times-standard.com/ci_13483891?IADID=Search-www.times-standard.com-www.times-standard.com
Jan. 7, 2010	“Water Talk”
May 13, 2010	“Water options start flowing; committee, public float ideas to help solve water district dilemma on North coast” by John Driscoll http://www.times-standard.com/ci_15076205?IADID=Search-www.times-standard.com-www.times-standard.com
July 10, 2010	“Frank language for Moynihan” My Word by Pete Peterson http://www.times-standard.com/ci_15485926?IADID=Search-www.times-standard.com-www.times-standard.com
North Coast Journal	
Oct. 22, 2009 (vol XX Issue 43)	“Cup runneth over— Humboldt County’s unique problem: way more water than we know what to do with.” By Heidi Walters http://www.northcoastjournal.com/news/2009/10/22/cup-runneth-over/
Dec. 24, 2009	“8. Drowning” by Heidi Walters (Part of the Top Ten Stories of 2009)
EcoNews	
December 2009	“Water Woes On The Mad River: Use It Or Lose It?” by Nathaniel Page
June/July 2010	“Public Must Decide What To Do with Too Much Water” submitted by HBMWD
Senior News	
January 2010	“Water rates take center stage in Humboldt”
June 2010	“Water planning meetings”
Eureka Chamber Newsletter	
Sept 2009	“Chamber Steps Up for Water Planning”
January 2010	“Local Control Key to Water Planning Effort”
inCommon: The Common Sense California Newsletter	
Feb. 2010	“Humboldt Bay Municipal Water District (HBMWD)”
January 2010	“Local Control Key to Water Planning Effort”
RREDC Newsletter	
September 2009	“Important HBMWD Meeting Regarding our Current Water Situation”
January 2010	“Reminder – January 13th Is Workshop On Water Resource Planning –VENUE CHANGE!”
May 2010	“Stay With the Flow! Come learn about and provide input on water use options.”
McKinleyville Newsletter to Customers	
Fall 2009	Information and Status of WRP Process

3.4.5 Conversations, Emails, Website, and Social Media

It is impossible to know the number of people who were involved indirectly in this process. AC members reported that colleagues, friends, and constituents were tracking this process via informal conversations, the HBMWD's website or the AC members' social media. Although this is "anecdotal evidence," it is notable that many AC members reported that this was occurring.

3.5 Result 5. Analyzed Options

AC members analyzed the options given all the information made available from the water workshop, the public, the CSG, legal counsel, and District Board members and staff. Three methods of analysis were used; they were Raptools, an initial screening procedure, and tiering or grouping of options.

3.5.1 Raptools

At this point in the water resources planning process, the information available to the AC was extensive, varied, and in multiple formats; we needed a way to talk about the public's feedback, the CSG's feedback on the options, and the "Evaluation Framework." One AC member suggested a software decision-making tool called "Raptools" (for "rapid assessment tool"), which allows users to collaboratively evaluate and compare numerous characteristics (our criteria) of many alternatives (our options). The Raptools method is based on statistically intricate underpinnings, but relies on well-established and thoroughly vetted procedures.³ The Raptools method was particularly interesting to the AC because its output is collaborative and graphical.

AC members generated input for the Raptools model by filling out one "Evaluation Framework" sheet for each option (with 14 AC members and 11 options⁴, we filled out 154 sheets). On each sheet, members were asked whether the option "fully meets," "somewhat meets," or "doesn't meet" the criteria. As discussed above, there were five categories of criteria (see Section 3.1, the Evaluation Framework):

1. Environmental category, with four criteria
2. Access category, with five criteria
3. Economic Development category, with three criteria
4. District Cost Recovery category, with five criteria, and
5. Community Quality of Life category, with three criteria.

With 20 criteria on each sheet, and 154 sheets, 3080 data/decision points were generated by the AC, and entered into the Raptools spreadsheet.

Although the Raptools model can create many kinds of graphical output, the most easily understood and relevant graphic for our purposes is the kite diagram (Figure 4).

³ Re Vision and H. T. Harvey & Associates 2010.

⁴ The D.2 option, recreation in Ruth Lake, was not evaluated using the Raptools model because that option was added after the analysis was performed.

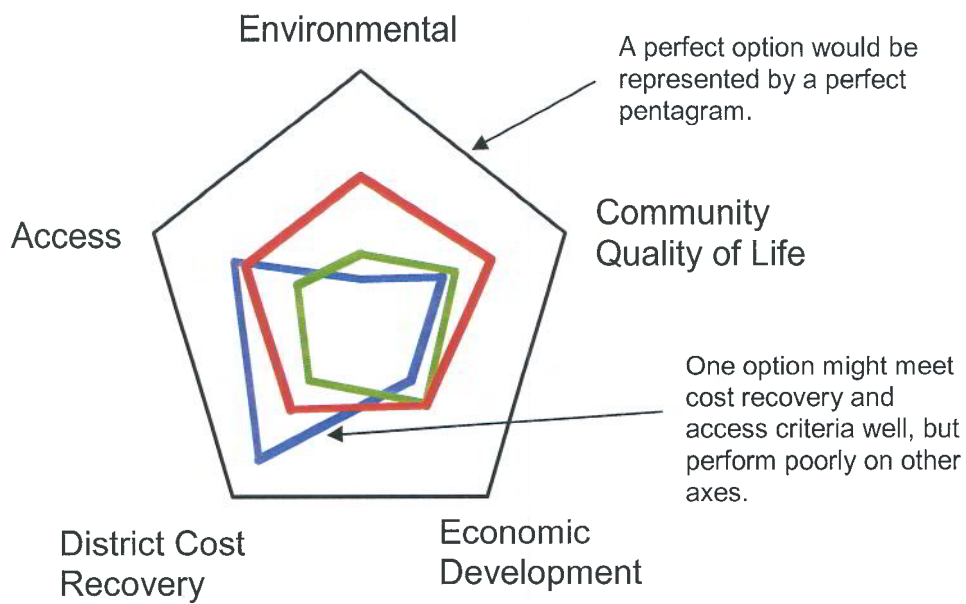


Figure 4. Example kite diagram from the Raptools model.

How to read a kite diagram: A perfect option would completely meet all criteria; it would be represented by the black pentagon. Less perfect (more realistic) options would be represented by pentagons inscribed inside. The colored pentagons tell us which criteria groups were not met very well; alternatively, they tell us which aspects of a water use option we could change, to approach a better, “perfect,” option. In the example kite diagram above, the blue option meets District cost recovery criteria well, but does not meet environmental criteria as well.

Kite diagrams representing all of the AC members’ responses were produced (Figure 5). Further information on Raptools as presented to the AC members is available in Appendix 7.

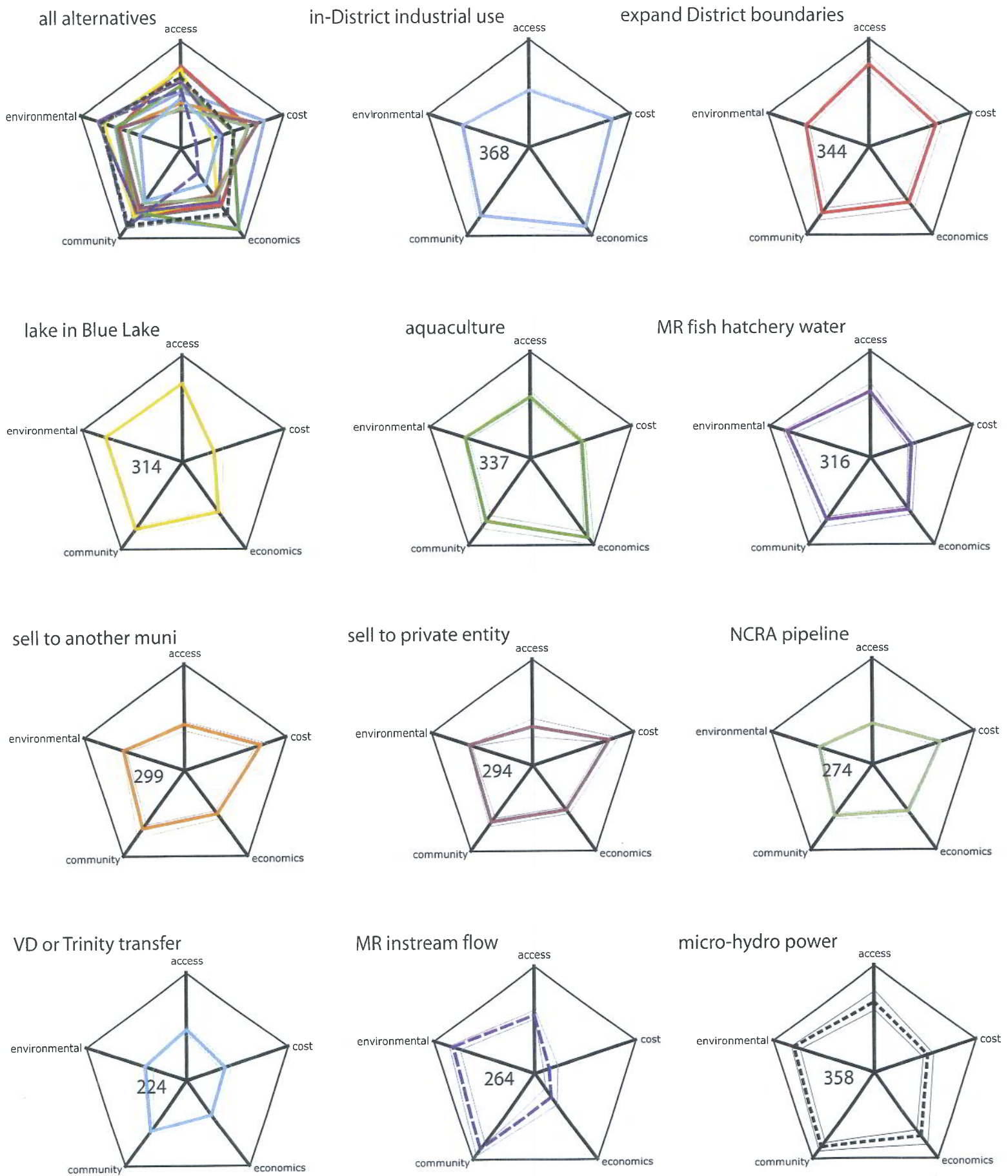


Figure 5. Kite diagrams generated from AC members' evaluations of the water use options using the Evaluation Framework and Raptools.

Remembering that a perfect option would be represented by the black pentagon, we can see that some options are more/less “perfect” than others. For example, the option of transferring water to the Van Duzen or Trinity rivers did not score well, as can be interpreted by its relatively small light blue pentagon. The numbers within the pentagons (for example, 368 in the “in-District industrial use” option) are numbers representing area, but they have no “real” units such as square inches.

Although it is tempting to simply select the option with the highest area as the “best”, the overall balance of how well the option performs in the five categories is also important. For example, the Mad River instream flow option area is only 264, yet it meets the Environmental and Community Quality of Life categories well; if the option could be revised to include some kind of cost recovery, the option would have a greater area.

The lighter weight lines that appear on each kite diagram are visual representations of variability or differences in the AC members’ responses. For a group selected specifically to represent a range of viewpoints, the variability is low. The low variability implies that the Evaluation Framework performed as designed, to minimize subjectivity and create objective assessments.

3.5.2 Initial Screening of Options

With a graphical compilation available in the form of kite diagrams, and considering the ideas and feedback from the workshop, legal opinions, the public, and the CSG, the AC attempted to perform an initial screening of the options, to determine if any could be “set aside” for further review at this time. This was accomplished by:

1. Listing the 12 options
2. Asking each AC member to select his/her “top” four options, carefully weighing and considering all of the information available to date
3. Asking each AC member to identify which options the District “should pursue”

Nine of the 14 AC members were present for this screening (Table 7). Two of the remaining five members responded via phone and email, but the formats of their responses were not easily compiled with the others’ responses. One member spread a single selection over a number of options, creating fractional votes.

Table 7. Results of initial screening of options by AC members. Numbers in parentheses include fractional selections by two members contacted by phone or email.

Number of AC members selecting the option, given 4 selections	Water Use Option	Number of AC members who indicated the District “should pursue” the option
7 (8.5)	A1. Actively pursue companies that use water	9 (10.5)
9 (10.5)	A2. Expand District boundaries	9 (10.5)
1 (1.33)	A3. Develop Lake in Blue Lake	0 (0.3)
5 (5.33)	A4. Aquaculture (incl. algae)	0 (0.3)
0 (1.33)	A5. Divert water to Mad River fish hatchery	0 (1.3)
8 (8.5)	B1. Sell untreated water to another municipality	9 (9.5)
0 (0.5)	B2. Sell untreated water to a private entity	4 (4.5)
3 (3)	B3. Build a pipeline in NCRA right-of-way to Sonoma	4*
0 (0)	B4. Transfer water to Van Duzen or Trinity rivers	NA
3 (3)	C1. Transfer water (in Mad River watershed) for environmental restoration/enhancement	8 (8)
0 (0)	D1. Develop micro-hydro in watershed	0 (0)
0 (0)	D2. Recreational opportunities at Ruth Lake	NA

* One member contacted by phone indicated that this option should not be considered further.

As a result of this screening, the AC decided to set aside two options. The first option set aside was Option B4, “Transfer water from the Mad River watershed to another watershed (e.g., Van Duzen or Trinity) to enhance in-stream flows in the receiving watershed for environmental benefit” because it did not pass the thresholds of “Local Control” in the Framework Criteria. The AC also decided to set aside Option D2, “Explore whether there are recreational opportunities that use water or otherwise protect HBMWD water rights at Ruth Lake or elsewhere” because it was added just prior to the public meetings, and because the AC understood that this option would not support maintaining the District’s water rights because it is a non-consumptive use.

An interesting observation is that Option C1, In-stream flows, was selected as a “top 4” option by only three members, yet eight of nine members indicated that the District should pursue this option. One member offered this explanation, “The reason that in-stream flows was not included in the top group of 4 is that when you limit the top group to 4, you are forced to include A1,A2, B1 and one of several other good choices. It [Option C1] drops out not just because it doesn't generate income but also because the first three or possibly four could be accomplished within the current HCP or environmental study of the water district operations in the river.” Further discussion of this observation centered on the fact that Option C1 would not generate much if any, revenue for the District.

3.5.3 Tiering or Grouping of Options

Having reduced the number of options to ten, the AC members next decided:

- Should the remaining ten options be further evaluated?
- If so, how could further evaluation be conducted?

Whether the remaining ten options should be further evaluated or whether they should be presented “as is” without further ranking or selection, resulted in “spirited” discussion among AC members. Discussion points included:

- Some District Board members are expecting water use option recommendations

- Ranking of the ten options would be very difficult for the AC, with little chance of agreement.
- Tiering or grouping the ten options might be possible
- With AC attendance low (7 of the 14 members present), tiering or ranking should not be attempted
- If tiering or grouping is attempted, what would the groups be?

AC members decided to proceed with tiering or grouping the options. The groups were selected as options that the AC recommends to:

- Immediately pursue
- Passively pursue
- Defer pursuit, or consider option in combination with others, pending more information
- Not recommend at this time

Definitions of tierings used to group options	
<p>Immediately Pursue: Options that require little capital expense by the district, except beginning to market by letter writing to prospective partners or participants, and seeking further legal guidance. These options present few “road blocks” that would prevent the District from immediately pursuing , should they so decide, beginning to contact Economic Development Agencies, local, state and nationwide, or Resource Agencies.</p>	<p>Passively Pursue: Options that can also begin relatively soon, but that require partners, participants or entrepreneurs who would become partners or customers of the District. Most of these options would require research, possible permits, and/or funding solutions, so they would take longer to come to fruition. Nonetheless these initial overtures and actions could begin immediately with the expectation of a much longer period to reach implementation.</p>
<p>Defer or consider option in combination with other options, pending new information: Options that should not be pursued immediately by themselves, but could be pursued in combination with other options. These options could be later grouped into the other three tiers, if new information was obtained.</p>	<p>Not recommend: Options that do not pass the Evaluation Framework Thresholds and other criteria.</p>

Each AC member present put the options into one of the four groups (Table 8).

Table 8. Results of tiering or grouping of the water use options. Highlighted cells represent group consensus; 8 AC members participated in the consensus exercise and 4 reviewed and agreed with the consensus. See text for their comments.

Option	Immediately pursue	Passively pursue	Defer pursuit, in combo, pending more info	Not recommended
A1. Actively pursue companies that use water	7	1a		
A2. Expand District boundaries	7	1		
A3. Develop Lake in Blue Lake		6	2	
A4. Aquaculture (incl. algae)	2	6		
A5. Divert water to Mad River fish hatchery	2	5	1	
B1. Sell untreated water to another municipality	8			
B2. Sell untreated water to a private entity	4b	4b		
B3. Build a pipeline in NCRA right-of-way to Sonoma	3c	1c	1c	3c
C1. Transfer water (in Mad River watershed) for environmental restoration/enhancement	3	4d (+3)	1d	
D1. Develop micro-hydro in watershed		6	2	

a. One AC member felt this option may not be viable, as traditionally Humboldt County has not had great success in attracting any new businesses, but still agreed that we should try.

b. The votes were spread spatially, with 2 of the 4 “passively pursue” votes close to the “defer” column. Reasons for deferring included that the AC did not obtain a legal opinion on the NAFTA issues, and that it is generally not popular with some sectors of the public.

c. No consensus was obtained on the option; AC members hold a broad spectrum of views on this option. (See page viii of the executive summary and Section 3.6 for additional explanation.) Although consensus was not reached, the AC decided that the option should be presented with the tiered recommendations.

d. Consensus was reached after lengthy discussion. Many members felt that almost any option will have in-stream ramifications, so in-stream flows are considered in all options by default. Most members believed that this option will require estuary research to see if it is beneficial. One member noted that given the state and federal Endangered Species Act, this option is the most limiting in terms of flexibility in using the water if flow is increased, and listed species become dependent on that flow. Members who had put this option in the “immediately pursue” group moved closer to the “passively pursue” group, if we assumed that ecological studies would occur regardless of option(s) that are ultimately pursued. One member also noted the extreme limited financial aspects of this option. Members recognized that the public was passionate on this option, and they supported ecological studies. One member noted the advantage of the legal opinion of protection of water rights by increasing beneficial uses. The three members who agreed to move their votes from “actively pursue to “passively pursue” are represented by the (+3) in the “passively pursue” column.

Three options were clearly considered to be in the “immediately pursue” group (Options A1, A2, and B1). Members considered that the District could/should invite or introduce their interest in selling water to municipalities, and see if there are potential municipal or industrial customers that are currently outside the district that may benefit if they were included inside an expanded district.

Six options were grouped in the “passively pursue” tier (Options A3, A4, A5, B2, C1, and D1). Option C1, the in-stream flow option, generated a lengthy discussion (see footnote d, Table 8).

Whether Option C1 was considered “immediately or passively” pursued was largely dependent on whether ecological studies were assumed to occur regardless of any of the ten options.

Few AC members placed options in the “defer” group, which was interesting in that when the groups were initially discussed, many anticipated that options would be entertained but only in combination with others. For example, when considering the Lake in Blue Lake, one could also consider a micro-hydro plant at the upstream diversion point, strategically placed to gain the most fall pressure, then filling Blue Lake, and finally, since the water could, with proper filtration, be returned to the river, the volume could be added to a possible in-stream flow permit. A similar combination could be considered for the Fish Hatchery and for any Aquaculture options. Members had anticipated that the in-stream flow option would be in this column, due to its lack of District cost recovery. However, this option’s popularity with the public and its resonance with some AC members, guided most members to place it in the immediately or passively pursue groups.

Consensus was reached on most of the water use options. (For a definition of how the AC defined “consensus” see their Charter in Appendix 1.) An important and obvious exception was Option B3, building a pipeline in the North Coast Railroad Right-of-Way. After discussion, the AC decided there was little value in attempting to come to consensus, and that diversity of opinion on that option was an important result in and of itself. The primary reasons for those placing Option B3 in the “Immediately Pursue” group are that it was the only option that could use up to the full 60 MGD of water that is available, and could generate significant revenue for the District. . Conversely, many members were reticent to recommend, and were even willing to eliminate, this option due concerns over our ability to maintain local control of the water rights, as well as environmental concerns within the Eel River Canyon. Additionally, there was considerable objection to the extreme high cost⁵ to construct a pipeline of this size and scope, and subsequently operate and maintain it.

As of 5 August 2010, 13 of the 14 AC members had either actively participated in the tiering exercise or had reviewed and commented on its outcomes. Four of the reviewing AC members wrote that they were supportive of the consensus. The one member who did not participate or review the outcomes was unavailable during this timeframe, however, this member has since indicated his overall support (9 August 2010).

Two reviewing AC members expressed some support for Option B3. One member wrote, “I would like to see the District passively pursue the pipeline idea. Perhaps the NCRA ROW isn’t the best choice; the Highway 101 ROW might be a better choice. However, the District should not build the pipeline to supply users to the south; the users to the south should bear all the cost and responsibility for the pipeline.” A second AC member indicated via phone message that Option B3 “should remain as a recommendation.” Additional comments and review did not allow the AC to reach consensus, and the AC continues to represent a wide range of perspectives on Option B3.

⁵ The District received a range of cost estimates for Option B3 from a local engineering firm. The estimates, based on a very conceptual “design” of such an option, ranged from \$285 million for a pipeline capable of moving 10 MGD to over \$1 billion for a pipeline capable of moving the entire 60 MGD. These costs are for construction only, and do not include costs associated with stabilizing the Eel River canyon or ongoing operational and maintenance costs.

3.6 Result 6. Provided Recommendations to the HBMWD Board

Based on all input from the public, District staff and its consultants, our own research, and our own evaluations of the options, the AC recommends the following water use options to the HBMWD Board of Directors (Table 9).

Table 9. Recommendations to the HBMWD Board from the Advisory Committee

Option	Immediately pursue	Passively pursue	Defer pursuit, in combo, pending more info	Not recommended at this time
A1. Actively pursue companies that use water	X			
A2. Expand District boundaries	X			
A3. Develop Lake in Blue Lake		X		
A4. Develop aquaculture for appropriate species		X		
A5. Divert water to Mad River fish hatchery		X		
A6. Develop aquaculture for algae		X		
B1. Sell untreated water to another municipality	X			
B2. Sell untreated water to a private entity		X		
B3. Build a pipeline in NCRA right-of-way to Sonoma	AC unable to reach consensus			
C1. Transfer water (in Mad River watershed) for environmental restoration/enhancement	X			
D1. Develop micro-hydro in watershed		X		

As described in previous sections, option B3 is notable in that the AC members were unable to reach a recommendation consensus. AC members appreciate the diversity of AC members' perspectives and the complex aspects of this option. As noted by some AC members, this option may be the most effective option in that it could use all the permitted water while generating the most revenues, and could be the most efficient in producing lower carbon emissions compared to other water use options. The B3 option might also provide opportunities to deliver water to communities in Southern Humboldt. Because it would probably take ten or more years to develop, some AC members believed that at least testing the feasibility of this option should start immediately. However, taking the opposite viewpoint, other AC members thought building and maintaining a pipeline will be too expensive; it might jeopardize maintaining local control of the water rights; the instability of the Eel River Canyon would make it unfeasible; a pipeline could be environmentally damaging; it might be politically challenging to work with some of the relevant governmental agencies (e.g., NCRA); and, that it might move water to another region that is not using it sustainably. Finally, this option generated the most concerns among the people who attended the public meetings. All AC members agreed that their diversity of opinions was itself a notable result, and no further attempt to reach consensus was made.

4 Process Evaluation (by Mary Gelinis)

As described in detail in Section 2, the purpose of the WRP process was to educate people on the North Coast about the challenges facing HBMWD and to meaningfully engage them in

developing solutions. To engage people in effective ways, the District Board created an innovative, community-based planning process. An overview of this process is described in Section 2 with more details in Appendix 1.

Given that the District wanted to set a new standard for effective public processes, it decided it needed to evaluate it. Thus, a two-pronged evaluation plan was developed. First, the AC that was leading the process gathered feedback at each of its meetings with the Citizen’s Study Group and the public. This “formative evaluation” was used to improve the process as it was underway. Second, once the process is completed, the District will gather feedback on the overall effectiveness of the process and its impact. Details of this “summative evaluation” are at the bottom of this section.

4.1 Formative Evaluation

The purpose of the Formative Evaluation was to continue to improve the process as it progressed. At each of the 11 meetings conducted by the AC—eight public meetings, one Water Workshop that was open to the public, and two meetings with the Citizen’s Study Group—participants were asked to rate how well the meeting had achieved the outcomes; what the most valuable aspect of the session was; what worked about the meeting; and to note any suggestions they had for future public processes. A detailed summary of the feedback from all of those meetings is in Appendix 4.

Two-hundred-thirty (230) participants provided written feedback at these meetings of approximately 390 present. Participants were asked how well the meetings achieved the desired outcomes. On a scale of 1 to 5, with 5 being that the outcomes were fully achieved, 89% responded with either a 4 or a 5 with the average response being 4.3.

The most valuable aspects of the meetings cited by the respondents were the following:

- Education was mentioned 163 different times by participants. They appreciated learning about the history of the District, the challenges facing it, potential options for water use, and being able to ask questions and discuss what they were learning in small groups.
- The effectiveness of the overall process was noted 149 times by the participants. Some of the items mentioned by participants were the facilitation, recording, and balance between presentation and discussion. Two comments were: “democratic process at its best. Thank you” and “well organized public involvement methodology.”
- 117 comments related to the use of small groups and rotating tables. Three of the comments were “sharing ideas in small groups and then sharing with the larger group;” “speaking with board members and advisory committee members at the tables;” and “mixing led to dissemination of ideas.”
- 60 comments were made about the collaborative, open, respectful atmosphere. As two participants put it “openness of input, felt valued, congenial” and “collaboration with others from the community
- 40 comments related to community involvement, input and dialogue. For example, two comments were “to hear/discuss multiple viewpoints” and “the Board’s willingness to seek the public’s input.”
- The majority of the suggestions related to increasing publicity for the process and increasing the amount of outreach in order to increase the amount of participation in it.

4.2 Summative Evaluation

The purpose of the Summative Evaluation is to assess:

1. how well the process achieved the desired outcomes;
2. to what degree the process was implemented according to its guiding process principles;
3. which elements of the process seemed to be the most and least effective;
4. the impact of the process on how participants think about public process; and,
5. the impact of the process on the Board's decision making.

To answer these questions, the District will conduct a survey of the groups who were involved in the process including District staff, the AC, the Citizen's Study Group, the Water Task Force, and members of the stakeholder groups. The members of the AC and the District staff will also debrief the process as a group identifying "lessons learned" and participate in a one on one interview.

The results of the evaluation will be presented to and discussed with the Board in September, 2010. The Board will have an opportunity at that time to add their perspectives to the overall evaluation of the process.

5 Conclusions and Reflections

Numerous people participated in this process in multiple ways: the CSG, the public meetings, stakeholder meetings, conversations with members of the AC, contributing ideas on-line, reviewing the website or reading articles in newspapers or newsletters. We are immensely grateful to each of you who took the time to learn about the situation facing the HBMWD and/or attend one of the meetings to provide us with your perspective.

Although this report summarizes all of our conclusions, we want to highlight a few here, and share what we learned from conducting this process.

For the benefit of its customers—the residents and businesses that are served by the regional water system—the HBMWD wants and needs to continue to carry out its mission. Because of the loss of its entire industrial customer base on the Samoa Peninsula, its ability to do so in the future could be in jeopardy. The significant loss in revenues triggered a substantial cost shift to the District’s municipal customers who, in turn, have had to increase their water rates. This challenges the District’s ability to, as it states in their mission, “reliably deliver high quality drinking water to the communities and customers the District serves...*at a reasonable cost.*”

The revenue loss also threatens the District’s ability to pay for costly and needed infrastructure projects. The loss of the industrial customer base resulted in under-utilization of the District’s water rights, which will be lost in the future if not used once again. Both of these issues would, if left unresolved, challenge the District’s ability to continue to, as it also states in their mission, “protect the long-term water supply and water quality interests of the District in the Mad River watershed.”

Those of you who participated in this process indicated clearly that maintaining local control of the water rights is of paramount importance. And, in our conversations, it seemed we were all grappling together with how to do that while also tending to the equally important considerations of the environment, access to high-quality water, the economy, District cost recovery and our quality of life. It is a delicate juggling act.

We want to emphasize three points again.

1. 75% of the District’s water supply and delivery capacity is on the industrial side (60 MGD vs. 20 MGD for municipal). The industrial system, in its current state, cannot supply drinking water.
2. Very few industries, except for pulp mills, use that amount of water. As one AC member captured it, “we are not going to be able to economically develop our way out of this situation.”
3. The District, in order to protect water rights and maintain reasonable water rates, will need to take a number of actions to increase the use of water from the industrial system. Those actions include increasing the use of water in the region along with selling water outside the region.

Prior to taking any of these actions, we will need to seriously consider what the public indicated is important, as summarized in the “Framework for Evaluating Water Resource Planning Options”. Difficult trade-offs will, no doubt, need to be made. For example, members of the public who only want the water used for environmental purposes and see selling water outside

the region “as a last resort,” might agree to a percentage of the water being sold outside the region, if contractual agreements with a customer guarantee income to the District, allowing water delivery at a “reasonable cost” and maintaining local control of the rights to the water.

As we progressed through this process, it seemed that the great majority of those who participated began to appreciate the trade-offs that would need to be made and the irony of needing to sell water outside the region in order to maintain local control of the water rights.

At the 19 January 2010 Water Workshop, we were immensely gratified when we began to hear people frame things in terms of “what are *we* going to do to...?” It seemed that some people were beginning to see the water situation not just as a challenge facing the District but also as a challenge for them, the community. Even though the District Board is the final decision maker about how to proceed, it now has an increased number of community members who understand the challenges and the trade-offs involved in implementing any of the limited number of solutions.

In addition to these conclusions, we would like to share some of the lessons this very diverse group learned through this resource planning process, based on verbal presentations made by the AC members at our last meeting where this report was adopted. We found first, and foremost, that given the proper process, an incredibly diverse groups of sincere people can find common ground even when dealing with very controversial issues. Outreach and education is an important part of the process as well as working groups that promote and respect individual contributions. While not all the community was involved in every step of the process to the extent some members would have liked, there was broad understanding that it was moving forward and general support for the process. Every participant learned significant information they did not know before the process began. Finally, the process requires a lot of resources in the form of hard work by the participants and strong professional guidance. We can all say we are better for the experience.

We wish to thank the Board of Directors of the Water District for establishing the Water Resource Planning Advisory Committee and allowing the committee the freedom of implementing its charter to bring the public more effectively into the deliberations on these issues. We now respectfully charge the Board to move forward with a plan based on this document’s input and from other sources, and to take concrete steps to implement the plan. We also hope that as the Board continues to engage the public in its planning, it does so in the spirit and practice with which you asked us to carry out the WRP process: participatory, open and fair, efficient and time bound, educational, respectful, and clear.

6 Appendices