

# Project Advisory Committee Meeting No. 1 Summary

## Lake Arrowhead Community Services District Integrated Water Resources Management Program

**Prepared For:** PAC Committee

**Date:** February 9, 2007

**Time:** 9:45 AM – 12:00 PM

**Location:** Lake Arrowhead Resort – 27984 Highway 189, Lake Arrowhead, CA

### Attendees

Project Advisory Committee (PAC)		
Name	Agency/Group	February 9 <sup>th</sup>
Carol Banner	Chamber	✓
Dave Barrie	Sierra Club	✓
Hugh Bialecki	Save Our Forest	✓
Cynthia Carley	Rim Association of Realtors	✓
Kathleen Hayes		✓
Veronica Magnuson	San Bernardino National Forest	
Sean McCarthy	California Dept. of Health Services	✓
Wes McDaniel		
Stacey McKay	Arrowhead Woods Architectural Committee	✓
Paul McNamara		
Scott Peterson	Water Conservation Stakeholder Group	✓
Charles Proctor		✓
Jeff Rigney	Special Districts Division San Bernardino County	
Kathleen Rollings-McDonald	Local Agency Formation Committee San Bernardino County	
Keith Rubio	Creekside Landscaping	✓
John Rutledge	Arrowhead Lake Association	✓
Harry Sherman		✓
Bob Sponeman		✓

Mike Stevens	Lake Arrowhead Country Club	✓
Randy Van Gelder	San Bernardino Valley Municipal Water District	✓
Ralph Wagner		✓
Daniel Waters		
<b>Other PAC Meeting Attendees</b>		
Bob Talbot	Bureau of Reclamation	✓
Bernard Voelkelt	SOFA/ACFSC	✓
Peter Jorris	San Bernardino Mountain Land Trust	
<b>Project Team</b>		
Ken Nelsen	District	✓
Ryan Gross	District	✓
Mark Veysey	District	✓
Kathy Cortner	District	✓
Marc Lippert	District	✓
Tom Chestnut	A&N Technical Services	✓
Tom Harder	Geoscience	✓
Persephene St. Charles	RMC Water and Environment	✓
Rob Morrow	RMC Water and Environment	✓
Kraig Erickson	RMC Water and Environment	✓
Tom West	RMC Water and Environment	

## Meeting Summary

### 1 GREETINGS AND INTRODUCTIONS

Ryan Gross, Project Manager for the District, and Persephene St. Charles, Project Manager for the RMC led consultant team, provided introductions. The PAC then went around the table and introduced themselves and indicated what group they feel they best represent. These groups are listed in the attendee roster above.

## 2 PROJECT ADVISORY COMMITTEE GUIDELINES

Persephene went over the PAC guidelines and the PAC discussed a few of the following specific points:

- The PAC agreed to provide communication to their representative groups regarding concepts discussed at PAC meetings and provide updates on the IWRP process.
- It was, however, requested that as a courtesy to other members, any PAC operational issues should be brought up during PAC meetings before relaying to the media or outside sources.
- All PAC members are free to speak with the media and public regarding the IWRP, however an individual member can not speak on behalf of the PAC. The PAC agreed that any correspondence with the media by individual members should be relayed back to the PAC and Persephene.
- It was stressed that the PAC remain as consistent as possible and will not be adding any more members.
- The goal of the PAC is not to create consensus on recommendations to the District, but to provide a variety of viewpoints that will better provide the District insight into support for certain concepts.
- It will be important that PAC members understand and are supportive of the PAC process, accepting that although the final solutions selected by the District may not be what individual members would have chosen.
- A meeting summary of each PAC meeting will be provided to the PAC prior to the next scheduled meeting. All PAC materials will be provided to members electronically. A list of PAC member attendance will be included in the summary.
- Public observers are welcomed at all PAC meetings, however the PAC is not a forum for public input. There will be 2-3 public meetings that will provide a public forum.

## 3 PROGRAM OVERVIEW

Persephene presented an overview of the Integrated Water Resources Program (IWRP) based on the program work plan provided previously via email to the group. The presentation included a discussion on the program's purpose, background, team roles, scope and schedule.

Points discussed by the PAC during this presentation are the following:

- The IWRP will be build upon past work in order to get to decision that need to be made.
- The project team has available all documents from the District that were identified during the RFP process and since then the project team has accumulated further research.
- The goal is to find a reliable and sustainable water source.

Discussion specific to the program scope included:

- **Task 1 – Stakeholder Coordination / Public Outreach:** It was mentioned that a Public and Board of Director's Meetings will need to take place in a large facility as the board room can only accommodate approximately 35 people.

- **Task 2 – Demand Management:** The draft Water Use Efficiency Plan will be sent out to the PAC prior to the next scheduled meeting. Feedback is requested from the group.
- **Task 3 – Supply Development:** A Soft-Path approach was added to the scope of work for Task 3. Soft-Path will address local-catchment and other alternate sources of water such that all options are evaluated.
- **Task 4 – Alternative Portfolio Development and Evaluation:** This task will evaluate all the options based on the criteria established: including costs, regulations, ability to implement, and public support. Once all criteria are established, the options will be evaluated and combinations will be reached.
- **Task 5 – Preparation of IWRP:** Because there will be tradeoffs on any alternative that is selected; the PAC will provide the greatest assistance to the District by helping to determine what those tradeoffs will mean in the context of public/agency support. Implementation of the IWRP will be phased and coordinated with other master planning efforts such that water, wastewater, and financial teams are on the same page.
- **Task 6 – Project Management:** The project team talks once every other week and provide monthly reporting.
- **Task 7 – Water System Audit and BMP:** Task 7 was added.

## 4 FUTURE MEETING DATES

There was discussion regarding future meeting dates, but it was determined that 9:30am on Fridays is best for the group.

## 5 OTHER ITEMS

- It was asked what consideration is being given to a large portion of residents that do not live in the area (vacation homes). Persephene responded that the IWRP will look at all rate payers as part of the demand management task. Tom Chestnut added that under the Water Use Efficiency analysis, proper management will be ensured by identifying any user gaps and completing them.
- It was recommended that a letter be send to all residents, as some do not live full time in the area or check local mail regularly. This will make residents aware of the IWRP process and the PAC involvement.
- It was also brought up that under the Water Resources Program, DHS may require CLAWA to make sure water supplied to the District is not being counted twice. The project team is to meet with CLAWA prior to the next PAC meeting.

The meeting was adjourned at 12:00 p.m.

# Project Advisory Committee Meeting No. 2 Summary

## Lake Arrowhead Community Services District Integrated Water Resources Management Program

**Prepared For:** PAC Committee

**Date:** March 23, 2007

**Time:** 9:30 AM – 12:00 PM

**Location:** UCLA Conference Center – 850 Willow Creek Road, Lake Arrowhead, CA

### Attendees

Project Advisory Committee (PAC)		
Name	Agency/Group	March 23 <sup>rd</sup>
Carol Banner	Chamber	✓
Dave Barrie	Sierra Club	✓
Hugh Bialecki	Save Our Forest Association	
Cynthia Carley	Rim Association of Realtors	✓
Kathleen Hayes		✓
Veronica Magnuson	San Bernardino National Forest	
Sean McCarthy	California Dept. of Health Services	✓
Wes McDaniel		✓
Stacey McKay	Arrowhead Woods Architectural Committee	✓
Paul McNamara		✓
John Padore	Mountain Association of Building Contractors	✓
Scott Peterson	Water Conservation Stakeholder Group	
Charles Proctor		✓
Jeff Rigney	Special Districts Division San Bernardino County	✓
Kathleen Rollings-McDonald	Local Agency Formation Committee San Bernardino County	✓
Keith Rubio	Creekside Landscaping	✓
John Rutledge	Arrowhead Lake Association	✓
Harry Sherman		✓

**Lake Arrowhead Community Services District Integrated Water Resources Management Program**

Project Advisory Committee Meeting No. 2 Summary

**FINAL**

Bob Sponeman		✓
Mike Stevens	Lake Arrowhead Country Club	✓
Randy Van Gelder	San Bernardino Valley Municipal Water District	✓
Ralph Wagner		✓
Daniel Waters		
<b>Other Attendees</b>		
Bob Talbot	Bureau of Reclamation	✓
Bernard Voelkelt	Save Our Forest Association /ACFSC	✓
Peter Jorris	San Bernardino Mountain Land Trust	✓
Steven Farrell	Sierra Club	✓
Patrick J. Marley, Esq.	General counsel, Save Our Forest Association	✓
Will Abell		✓
<b>Project Team</b>		
Ken Nelsen	District	✓
Ryan Gross	District	✓
Mark Veysey	District	✓
Kathy Cortner	District	✓
Marc Lippert	District	✓
Tom Chestnut	A&N Technical Services	✓
Tom Harder	Geoscience	✓
Persephene St. Charles	RMC Water and Environment	✓
Rob Morrow	RMC Water and Environment	✓
Kraig Erickson	RMC Water and Environment	✓
Tom West	RMC Water and Environment	

## Meeting Summary

### **1 GREETINGS AND INTRODUCTIONS**

Persephene St. Charles, IWRP Consultant Team Project Manager, provided project team introductions and the PAC members and other attendees introduced themselves to the group. These attendees are listed in the roster above.

### **2 FEBRUARY 9, 2007 MEETING SUMMARY**

It was noted that John Padore was in attendance at the February 9 meeting and the summary will be updated to reflect this. There were no other comments from the PAC regarding the past meeting summary.

Persephene provided a brief overview of the near-term technical memorandums (TMs) that were provided to the PAC and the purpose of the TMs. Due to the quick turn-around on this project, the TMs and all handouts will be provided to the PAC electronically via email, however hard-copies of all program handouts are always available at the District office. It was noted that appendices of the TMs are for reference purposes and do not need to be read in their entirety.

### **3 DEMAND ASSESSMENT**

Tom Chesnutt presented an overview of the water demand assessment (for the District service area) conducted as part of the IWRP. Points raised/discussed by the group during this presentation were the following:

- The TM looks at specific users to show that water use is not necessarily elastic. Water Use Efficiency programs to address different user groups will be presented at the next PAC meeting.
- Water use is dependant upon the economic cycle (tourist industry).
- These was a questions whether higher-tier water rates would be an effective means toward decreasing demand of top water users.
- A forecast demand with multiple variables will be laid out in future stages of the program.

### **4 NEAR-TERM WATER USE EFFICIENCY**

Tom Chesnutt presented an overview of the Near-Term Water Use Efficiency Solutions for Meeting Water Demand TM. Points raised/discussed by the group during this presentation were the following:

- The basis of water neutrality for vacant land.
- Users need an incentive to conserve water and utilize water efficient landscape systems. The potential benefits of water efficient landscaping will be further evaluated based on recent data.
- The effectiveness of drought pricing and tiered water rates needs to be evaluated.
- Public perception of water conservation is, "Not what can I (the user) do, but what can you (the District) do to reduce water rates."

- The level of the lake could be used as an educational tool to convey water use efficiency and potential retrofit benefits to top-tier users.
- Top-tier users do not necessarily maintain their landscaping or monitor their water use themselves – they hire gardeners/landscapers for that purpose. Water use is not so much an issue of money with those users but more of an issue of educating all of those involved.
- It needs to be evaluated if “Brown-Outs” (temporary water shut-downs) are a plausible conservation tool.
- Water conservation is only part of the solution.

## 5 NEAR-TERM GROUNDWATER

Tom Harder presented an overview of the Evaluation of Potential Near-Term Groundwater Production Sites TM. The TM evaluated well sites within the Lake Arrowhead service area. The TM identifies the 3 highest potential sites for near-term (prior to completion of the IWRP) implementation (or some combination thereof the top seven well sites in order to spread production). Points raised/discussed by the group during this presentation are the following:

- Additional information and data collection is necessary in order to determine the hydraulic connection between the lake level and groundwater wells; especially for those wells in close proximity to the lake.
- These well sites are in addition to those already scheduled for/under construction
- A projection of potential supply from these groundwater wells will be included in the longer range plan to be completed this spring.
- Construction of the already planned Grass Valley wells is already underway.
- Imagery, surface water flows, and existing wells were the basis for the methodology in determining potential sites. The construction schedule of all future wells is dependent upon the permitting process amongst other factors.
- Additional storage will be examined in the District’s facilities master planning reports.

## 6 NEAR-TERM IMPORTED WATER

Rob Morrow presented an overview of the Near-Term Imported Water Supply TM. A key point of the TM is Lake Management and the question of when the District would need to cut back on use of the water supply from the Lake. The TM recommends: (1) confirming the imported water quantity available in multiple dry-years, (2) identifying willing imported water sellers, and (3) to continue long-term imported water solutions investigation. Points raised/discussed by the group during this presentation are the following:

- The Lake Management TM, which will be presented at the next PAC meeting, will discuss the existing agreement with ALA.
- Non-State Water Project (SWP) contractors are of the lowest importance along a SWP system, hence the least reliable supply source. There are potential agreement options but not being a state contractor, the District has fewer options.
- The feasibility of obtaining a direct supply line from a supplier in the region will be evaluated and addressed. A preliminary evaluation estimates that the line would be high in cost with potential implementation issues.

- Existing infrastructure will be evaluated in order to ascertain its capacity and transfer limits.
- The 2020 estimated supply is based on multiple variable and assumptions. These assumptions and estimates should be revisited to verify accuracy.
- Water sellers have an allotment of water that is fixed per contract (like a franchise). Sellers trade water rights as needed to guarantee adequate supply.

## **7 NEXT MEETING**

The next PAC meeting will be May 18, 2007 at a location to be determined at 9:30AM. There will be a great deal of meeting materials to review prior to this meeting. The project team will provide these materials to the PAC in advance of the meeting as they are ready for review.

## **8 OTHER ITEMS**

It was reiterated that given the quick turn-around time for documents produced as part of the IWRP, all communication and materials are directly distributed to the PAC via email or made available on the District website. This process also minimizes the amount of excess paper used. Hard-copies of all meeting materials are, however, available by request at the District office.

The meeting was adjourned at 12:00 p.m.



# Project Advisory Committee Meeting No. 3 Summary

## Lake Arrowhead Community Services District

### Integrated Water Resources Management Program

**Prepared For:** PAC Committee

**Date:** May 18, 2007

**Time:** 9:30 AM – 12:00 PM

**Location:** Burnt Mill Beach Club – Villa Drive, Lake Arrowhead, CA

## Attendees

Project Advisory Committee (PAC)		
Name	Agency/Group	May 18
Carol Banner	Chamber of Commerce	
Dave Barrie	Sierra Club	✓
Hugh Bialecki / Bernard Voelkelt	Save Our Forest Association	✓
Cynthia Carley	Rim Association of Realtors	✓
Kathleen Hayes		✓
Veronica Magnuson	San Bernardino National Forest	
Sean McCarthy	California Dept. of Health Services	✓
Wes McDaniel	Lake Arrowhead Community Plan	✓
Stacey McKay	Arrowhead Woods Architectural Committee	✓
Paul McNamara		✓
John Padore	Mountain Association of Building Contractors	✓
Scott Peterson	Water Conservation Stakeholder Group	
Charles Proctor		✓
Jeff Rigney	Special Districts Division San Bernardino County	
Kathleen Rollings- McDonald / Michael Tuerpe	Local Agency Formation Committee; San Bernardino Co.	✓
Keith Rubio	Creekside Landscaping	✓
John Rutledge	Arrowhead Lake Association	✓
Harry Sherman		✓

Bob Sponeman		✓
Mike Stevens	Lake Arrowhead Country Club	✓
Randy Van Gelder	San Bernardino Valley Municipal Water District	✓
Ralph Wagner		✓
Peter Jorris	San Bernardino Mountain Land Trust	
Steven Farrell	Sierra Club	✓
<b>Project Team</b>		
Ken Nelsen	District	✓
Ryan Gross	District	✓
Mark Veysey	District	✓
Kathy Cortner	District	✓
Marc Lippert	District	✓
Bob Talbot	US Bureau of Reclamation	✓
Greg Krzys	US Bureau of Reclamation	✓
Tom Chestnut	A&N Technical Services	
Dave Pikelney	A&N Technical Services	✓
Tom Harder	Geoscience Support Services	
Persephene St. Charles	RMC Water and Environment	✓
Rob Morrow	RMC Water and Environment	✓
Kraig Erickson	RMC Water and Environment	
Tom West	RMC Water and Environment	

## Meeting Summary

### 1 Greetings and Introductions

Persephene St. Charles, Project Manager for the RMC lead consultant team, provided introductions. The PAC then went around the table and introduced themselves. These groups are listed in the attendee roster above.

### 2 PAC Meeting No. 2 Summary

There were no comments from the PAC regarding the Meeting No. 2 Summary.

### 3 Alternative Development Process

Persephene presented an overview of the portfolio alternative development process beginning with options outlined in the preliminary supply and demand management plans through preferred alternative selection.

### 4 Preliminary Plan Options

Each of the preliminary resource plans (also called TMs) contained multiple project options that can be combined into full portfolio alternatives. A summary from each of the six preliminary plans (TMs) was provided in a special PAC Options Summary document previously distributed to the group. Each of the six options summaries were introduced by Persephene for PAC questions and feedback. The following six sections and tables area summary of those comments and project team responses.

#### 4.1 Water Use Efficiency

Name	Comment	Response (if applicable)
<b>General WUE Options</b>		
John Padore	What is the proposed implementation method for these options? Will it be mandate?	Financial incentives will most likely be used but the method depends upon the option
Kathleen Hayes	The options mention eligibility for grant funding. The costs should be net of grant funding if funding is likely to be received.	The District has already applied for State funding for conservation measures but assuming that the funds will be awarded is too presumptuous to include just yet.
Paul McNamara	What is the timeline for implementation for each WUE option?	WUE1: Current WUE2: 2-3 years WUE3: 4-6 years
Wes McDaniel	What are the project demand growth projections?	1% per the Urban Water Management Plan based on 60 new units per year and increased full-time population. A demand model has been developed that accounts for climate variables and this model will be incorporated into Confluence.
Paul McNamara	The AMR meters should provide better and prompt data for quicker reaction to changes in water use	Comment noted.
Ralph Wagner	Have any irrigation use controls been proposed? Adding irrigation meters to high irrigation use sites should be implemented.	Irrigation demand management is proposed as part of WUE2 and WUE3 in the form of weather-based irrigation controllers, which adjust outdoor water use to climatic conditions.

Name	Comment	Response (if applicable)
John Rutledge	Why are 1992 demands being used? There has been a large increase in full-time residences since 1992 and it is expected to keep increasing.	Pre-1992 residences are proposed as the best sites for retrofits because they were constructed prior to the plumbing code requiring water efficient fixtures. Conversion of part-time residences to full-time residences has been incorporated into the demand projections. <i>[Addendum Note: Project team discussed on 5/24 and emphasizes that demand projections (including part-to-full residency conversions) will be used to evaluate full alternative portfolios as part of Confluence modeling.]</i>
Kathleen Hayes	How do these options promote regional coordination?	Conservation measures in general require coordination across different organizations. Also, funding will be pursued at the regional and State level, which requires regional coordination.
Dave Barrie	Were existing WUE programs included in the WUE options?	WUE device saturation was analyzed in the WUE TM and was accounted for in development of the WUE options.
<b>WUE1</b>		
Bob Sponeman	WUE1 should not be considered an option. It should be included in the baseline because we are already in an emergency situation.	Comment noted.
<b>WUE2</b>		
-	No specific comments on WUE2	-
<b>WUE3</b>		
-	No specific comments on WUE3	-

## 4.2 Soft Path Supply

Name	Comment	Response (if applicable)
<b>General SP Options</b>		
Kathleen Hayes	Wouldn't the rainwater catchment options prevent water from entering the lake?	Yes but the volume of water discussed is relatively small so would have little impact. Capture during periods of lake spill would also prevent the water from leaving the mountain.

Name	Comment	Response (if applicable)
John Rutledge	Preventing rainwater from recharging groundwater and/or flowing to lake would negatively impact lake levels.	Comment noted.
Keith Rubio	Why was graywater irrigation for the Lake Arrowhead Resort and UCLA Conference Center not considered?	Retrofitting large sites is likely prohibitively expensive. However, the options include laundry graywater reuse for the resort (SP5) and recycled water use for landscape irrigation at UCLA (RW3 and RW4)
Charles Proctor	Was rainwater capture and groundwater recharge considered?	Yes, but groundwater recharge does not operate well with fractured granite geology because predicting the ultimate water storage location is extremely difficult even with extensive geological investigation.
Harry Sherman	The retrofit options seem too expensive.	Comment noted.
Keith Rubio	Were the institutional hurdles considered in these recommendations?	Yes. These were described in the Soft Path TM. The TM was developed with the intention to provide willing individuals the information necessary to assess and implement soft path water supply projects.
Bob Sponeman	Lake Arrowhead is a unique setting but there are other similar locations, such as Lake Tahoe and Big Bear. The Tahoe Regional Authority has strict requirements for new housing – we should look at what they have done in these areas.	Comment noted. One thing to keep in mind - Lake Arrowhead is different than these locations in that there is less projected new development and therefore less opportunity for water yield from new development.
Cynthia Carley	Rainwater catchment options seem like weak options due to the combination of cost, water rights and lake level issues.	Comment noted.
<b>SP1</b>		
-	No specific comments on SP1	-
<b>SP2</b>		
-	No specific comments on SP2	-
<b>SP3</b>		
-	No specific comments on SP3	-
<b>SP4</b>		
Harry Sherman	The retrofit options seem too expensive.	Comment noted.

Name	Comment	Response (if applicable)
<b>SP5</b>		
Bernhard Voelkelt	There are two laundromats in the Lake Arrowhead area where the graywater technology could be used.	Comment noted.

### 4.3 Groundwater

Name	Comment	Response (if applicable)
<b>General GW Options</b>		
Wes McDaniel	For comparison, what was the unit cost for the Grass Valley wells? Were the costs for Grass Valley wells included in development of these costs?	Yes, but consider: 1) the wells were constructed 3 years ago and construction inflation has outpaced general inflation; 2) the sites were relatively inexpensive to construct wells; and 3) savings were gained from the sites being close to each other.
Wes McDaniel	What is the basis for 70 percent operation?	It was based on professional experience and operating data from the District.
Bernhard Voelkelt	It should be noted that groundwater pumping could potentially reduce lake levels.	Comment noted.
John Rutledge	In response to the previous comment: The District will be conducting tests on the Blue Jay well to determine if it is under direct influence of Lake Arrowhead	This is true.
Paul McNamara	Was the Cumberland well site considered?	No because a developer is drilling that well but it is close LBC-1, which is included in Tier 1.
Randy Van Gelder	Will a hydrogeologist validate well productions estimates?	Yes. Appropriate data will be collected throughout production well development and operation.
<b>Tier 1 (GW1 – GW5)</b>		
-	No specific comments on Tier 1	-
<b>Tier 2 (GW6 – GW10)</b>		
-	No specific comments on Tier 2	-
<b>Tier 3 (GW11 – GW15)</b>		
-	No specific comments on Tier 3	-

## 4.4 Recycled Water

Name	Comment	Response (if applicable)
<b>General RW Options</b>		
Paul McNamara	Would addition of advanced treatment to the proposed Phase 1 project (with tertiary treatment) address comments from the Lake Arrowhead Country Club?	Addition of advanced treatment would likely address these comments but is also likely cost prohibitive given the size of the project. The District is currently evaluating options for addressing the LACC comments. <i>[Addendum Note: Project team discussed on 5/23 and agreed that advanced treatment would be cost prohibitive for consideration as part of current Phase 1 project].</i>
Cynthia Carley	What is the baseline cost to compare with? The cost of this option is important in the context of alternative water supplies, particularly imported water.	This option will be combined with other options to form one or more portfolio alternatives and the cost of each alternative will be compared against each other. It is not a good idea to compare costs of only parts (or options) of full alternative portfolios.
<b>RW1</b>		
-	No specific comments on RW1	-
<b>RW2</b>		
-	No specific comments on RW2	-
<b>RW3</b>		
-	No specific comments on RW3	-
<b>RW4</b>		
-	No specific comments on RW4	-
<b>RW5</b>		
-	No specific comments on RW5	-
<b>RW6</b>		
Sean McCarthy	Public outreach is essential for successful implementation of Indirect Potable Reuse projects.	The project descriptions assume an implementation period of 5 to 10 years so that proper public outreach can be conducted.
John Rutledge	The projects should not be mistaken as groundwater recharge projects but rather as lake augmentation projects.	Comment noted. The proposed projects do not consider groundwater recharge.

Name	Comment	Response (if applicable)
Wes McDaniel	The PAC for the 2003 Water Supply and Demand Report recommended further investigation of indirect potable reuse.	Comment noted.
Charles Proctor	The Board decided to halt all indirect potable reuse work subsequent to the 2003 report and represents the public opinion	Comment noted.
John Padore	Overall public opinion of indirect potable reuse has never been determined.	Comment noted.
Kathleen Hayes	I drank seawater treated with reverse osmosis when lived on a boat for six years and the water was fine.	Comment noted. Lake augmentation treatment includes reverse osmosis.
Ralph Wagner	I support this option.	Comment noted.
Paul McNamara	This option should not be eliminated but concerns regarding emerging contaminants such as pharmaceuticals would need to be addressed to proceed.	Comment noted.
Kathleen Hayes	Any storage option in Lake Arrowhead would need to address the SWRCB order.	Comment noted.
<b>RW7/RW8</b>		
Keith Rubio	Papoose Lake may generate water quality concerns given its location to a potentially upgradient landfill.	Comment noted.
<b>RW9</b>		
-	No specific comments on RW9	-

## 4.5 Imported Water

Name	Comment	Response (if applicable)
<b>General IW Options</b>		
Keith Rubio	Will the cost of water from the District continue to increase or will it eventually level off? Are tiered rates permanent?	The cost to provide water cannot be determined until a recommended alternative is identified and the ultimate price structure is dependent on the outcome of the Financial Master Plan.
Wes McDaniel	Are the 2,000 af options (IW1 – IW5) all or nothing?	Yes. The purpose of these options would be to provide a primary water supply.
<b>IW1</b>		

Name	Comment	Response (if applicable)
-	No specific comments on IW1	-
<b>IW2</b>		
John Padore	Is storage included in all options?	No. Storage (at Papoose Lake) was only included in IW2. The purpose of storage would be to provide an irrigation season supply in place of paying for increased summer capacity from CLAWA
Wes McDaniel	Does this option include treatment because the description says "No Treatment"	There is no advanced treatment beyond that already done by CLAWA already.
John Rutledge	Storage would need to be carefully managed to avoid unnecessary spills	Comment noted.
<b>IW3</b>		
-	No specific comments on IW3	-
<b>IW4</b>		
-	No specific comments on IW4	-
<b>IW5</b>		
-	No specific comments on IW5	-
<b>IW6</b>		
-	No specific comments on IW6	-
<b>IW7</b>		
-	No specific comments on IW7	-
<b>IW8</b>		
-	No specific comments on IW8	-
<b>IW9</b>		
Kathleen Hayes	What are options agreements and how much do they cost?	Options contracts for imported water provide the ability to buy water under certain conditions, such as a dry year. The costs range significantly but \$100/af plus the cost of the water was assumed.

## 4.6 Lake Management

Name	Comment	Response (if applicable)
John Rutledge	<p>The Arrowhead Lake Association wants to maintain adequate lake levels for recreational use of the lake. Impacts begin to be felt once lake levels approach 5,103' with more significant impacts below 5,100'. However, ALA policy is <u>not</u> to "turn off the taps" of District customers once the lake level drops below 5,100. The ALA policy is to work with the District to management the lake in the best way given such a situation.</p>	Comment noted.

## 5 Alternative Evaluation Criteria

A brief overview of how evaluation criteria will be used to do a qualitative analysis on portfolio alternatives was provided (and included as an attachment to this summary). The PAC was asked to review draft evaluation criteria and qualitative ranges (provided as a handout) and then provide feedback via email or phone to Persephene on which criteria were most important, which could be combined and request any additional criteria that were not included. These criteria will then be finalized and incorporated into the alternative analysis conducted this summer to narrow potential alternatives to the best four to six that will then be modeled in Confluence. Persephene will send out this list again via email to the PAC members and is asking for comments within the next two weeks.

## 6 Next Meeting

The next PAC meeting will be September 14, 2007 at the Lake Arrowhead Resort at 9:30AM. As requested, meeting materials will be provided to the PAC for review at least two weeks prior to this meeting. It was noted that some PAC members (specific comment received from Bob Sponeman) feel that more review time will better prepare the PAC to provide greater input during the meetings and reduce the need for consultant team presentations and overviews during that time.

## 7 Other Items

This summary will be provided to PAC as soon as possible after the meeting (as requested by Kathleen Hayes).

The meeting was adjourned at 12:10 p.m.

# Project Advisory Committee Meeting No. 4 Summary

## Lake Arrowhead Community Services District

### Integrated Water Resources Management Program

**Prepared For:** IWRP Project Advisory Committee

**Date:** September 14, 2007

**Time:** 9:30 AM – 12:00 PM

**Location:** Lake Arrowhead Resort – Highway 189, Lake Arrowhead, CA

## Attendees

### Project Advisory Committee (PAC)

Name	Agency/Group	Sept. 14
Carol Banner	Chamber of Commerce	✓
Dave Barrie	Sierra Club	✓
Hugh Bialecki / Bernard Voelkelt	Save Our Forest Association	✓
Cynthia Carley	Rim Association of Realtors	✓
Kathleen Hayes		✓
Veronica Magnuson	San Bernardino National Forest	
Sean McCarthy	California Dept. of Health Services	✓
Wes McDaniel	Lake Arrowhead Community Plan	✓
Stacey McKay	Arrowhead Woods Architectural Committee	✓
Paul McNamara		✓
John Padore	Mountain Association of Building Contractors	✓
Scott Peterson	Water Conservation Stakeholder Group	
Charles Proctor		✓
Jeff Rigney	Special Districts Division San Bernardino County	
Kathleen Rollings-McDonald / Michael Tuerpe	Local Agency Formation Committee; San Bernardino Co.	✓
Keith Rubio	Creekside Landscaping	✓
John Rutledge	Arrowhead Lake Association	✓
Harry Sherman		✓
Bob Sponeman		✓

Mike Stevens	Lake Arrowhead Country Club	✓
Randy Van Gelder	San Bernardino Valley Municipal Water District	✓
Ralph Wagner		✓
<b>Project Team</b>		
Ken Nelsen	District	✓
Ryan Gross	District	✓
Mark Veysey	District	✓
Kathy Cortner	District	✓
Marc Lippert	District	✓
April Blakey	District	✓
Bob Talbot	US Bureau of Reclamation	
Greg Krzys	US Bureau of Reclamation	✓
Tom Chestnut	A&N Technical Services	
Dave Pekelney	A&N Technical Services	
Tom Harder	Geoscience Support Services	
Persephene St. Charles	RMC Water and Environment	✓
Rob Morrow	RMC Water and Environment	✓
Kraig Erickson	RMC Water and Environment	
Tom West	RMC Water and Environment	
Dawn Hock	RMC Water and Environment	✓
<b>Other Attendees</b>		
Steven Farrell	Sierra Club	✓
David Ben-Hur		✓

## Meeting Summary

### **1 Greetings and Introduction**

Persephene St. Charles, Project Manager for the RMC lead consultant team, provided introductions. The PAC then went around the table and introduced themselves. These groups are listed in the attendee roster above.

### **2 PAC Meeting No. 3 Summary**

There were no comments from the PAC regarding the Meeting No. 3 Summary.

### **3 Alternative Development Process**

Persephene provided an overview of the alternative development process for the PAC as a reminder prior to discussing other agenda items. Additional copies of the Portfolio Development and Evaluation Technical Memorandum (TM) were distributed to those that did not have a copy with them (the TM was distributed via email to the PAC prior to the meeting).

### **4 Demand Forecast and Base Case**

Persephene presented the demand forecast and base case scenario. A detailed summary of each was provided as appendices to the TM previously distributed to the group.

Points raised/discussed by the group during this presentation include the following:

- Backwash is expected to decrease overtime due to improved filtering methods, and cannot be done using tertiary treated water.
- Growth rate at the meter level is the trend of growth per year for pre-drought years; is weather-normalized; and is considered a conservative figure.
- The District would like to move towards zero growth per meter.

### **5 Alternative Evaluation**

Persephene introduced the Alternative Evaluation Process (as provided in the TM), after which Rob Morrow discussed the alternatives selected for further analysis in detail. Points raised/discussed by the group during this presentation include the following:

- Adaptability was agreed to be an important alternative criteria to deal with the issue of climate change.
- Periodic 5% and 10% shortage periods should be considered acceptable. Rationing, cut backs, or violation of the SWRCB Order would happen as part of expected drought management measures outside of the normal operations. Planning for a 0% shortage approach would be infeasible from cost and resource perspective.
- Annexation was considered as opposed to consolidation in terms of imported water.
- Rule curves used as part of the alternative analysis maximize the cheapest supply while keeping some in reserve for the end of the year.
- Groundwater levels used in the analysis take into consideration dry year and multiple dry year response.
- Conservative assumptions were used in the analysis to estimate yields and demand.
- Seasonal storage was considered but is infeasible due to cost and the area's topography for above ground and geology for below ground.

- The potential for pharmaceuticals entering the lake under IPR will be part of the studies conducted as part of the IPR implementation plan.

## 6 Recommended Alternatives

Three recommended alternatives (B, C, D) and their pros and cons were presented by Persephene for PAC questions and feedback. The alternatives were fully described as part of the TM. The PAC discussed the project team’s recommended alternatives in relation to the other alternatives that were not selected as well as their feedback on alternatives B, C, and D. The following tables provide a summary of those comments and project team responses.

Name	Comment	Response (if applicable)
<b>Alternative B (High Imported Water Supply)</b>		
Ralph Wagner	Alternative B may not be highly reliable.	Comment noted.
Wes McDaniel	The pros and cons listed on the slide (in the TM) are correct.	Comment noted.
Greg Krzys	There is potential for obtaining imported water allocations.	Comment noted.
Randy Van Gelder	In response to the previous comment: In the short run, imported supply is less reliable than originally thought. They had a similar Delta situation in the past that translated to some reduction in reliability. Supply reliability is now at 70% and is dropping. If the District is willing to spend enough money, they can get that reliability back. There is a two-pronged question that must be addressed by the District then: How much reliability can you live with, and how much reliability can you pay for? He anticipates next year’s allocations to be at 35-40% of total allocations. They are currently draining the San Bernadino Reservoir to meet current demand.	Comment noted.
Wes McDaniel	(re: Imported water) There are storage issues. There are gray areas in supply in terms of climate change.	An alternative with a high institutional independence ranking allows for supplies to be better kept within District control.
Charles Proctor	The group is only considering limits on supply, there is no consideration in terms of having an annual maximum use per meter as part of the Water Use Efficiency measures.	Meter restrictions would require a policy change in response to Board direction. The IWRP only considered solutions that could be implemented without a policy change – as determined at the conservation workshops held during the development of the Preliminary WUE Options TM. If the Board does decide to adopt a meter cap policy, the water savings will be on top of those estimated for each alternative.
Keith Rubio	Regarding the state board ruling, is there another Lake Arrowhead situation? Can primary use be changed in a drought situation (for example recreation to drinking water)?	Primary use may not change, but a drought management plan would contain the measures the District should implement in times of drought when supplies are in jeopardy of not meeting demand.

Name	Comment	Response (if applicable)
Keith Rubio	Low lake levels may be irrelevant in those times.	Comment noted.
Hugh Bialecki	This process clarifies and simplifies things, but we will still have to look at everything, such as what is really an acceptable lake level and what is the political will for the implementation of limits.	Comment noted.
Harry Sherman	Can we use Papoose Lake for a storage facility?	LACSD does not have a permit to use Papoose Lake as a water supply source.
Wes McDaniel	Are the high environmental impacts of concern for Alternative B related to the Delta? If they are doing CLAWA and Papoose Lake storage, are these local environmental impacts?	An EIR would include Delta issues. It would also include the energy footprint and local impacts. The overriding environmental issue may not be local given the current issues with Delta supplies to the State Water Project.
Paul McNamara	The Board approved \$65,000 to research CLAWA capability to bring water.	Yes, the money is to be used to pay CLAWA to provide an analysis and refined costs for expansion of the CLAWA facilities to supply increases in summer-time supply to the District.
<b>Alternative C (High Diversification)</b>		
Bob Sponeman	There is not "Potentially acceptable water supply reliability", as stated in the Pros and Cons slide of the presentation. That bullet should be removed.	Comment noted.
<b>Alternative D (Indirect Potable Reuse (IPR))</b>		
Paul McNamara	Alternative D should be a part of the other alternatives.	Comment noted.
Wes McDaniel	Where did 2017 come from? It's too long.	2017 is the year when the extra water supply will be needed in lieu of imported water and increasing demand. IPR planning could begin in advance of this date but will take about 10 years to fully implement.
Paul McNamara	2017 is too short.	Comment noted.
<b>General Discussion</b>		
Bob Sponeman	Forget B, use C and D.	Comment noted.
Carol Banner	Regarding lake level, is a 5,100 ft. (minimum Lake level as per the ALA agreement) cast in stone? The primary water use question is a matter of how water is managed and depends on what the community will accept. Lake level effects property values, boats, dock maintenance. But also need drinking water.	The 5,000 ft. lake level is a mutually agreed upon goal between the District and ALA. It is understood that the tap will not be shut off if the lake drops below such a level, but the IWRP is developing and evaluating alternatives with that goal in mind.
Wes McDaniel	A proponent of IPR, but is willing to accept marginality in lake level. The group could accept C and can change to another option later.	Comment noted.

Name	Comment	Response (if applicable)
Kathleen Hayes	Worried about perception. Would accepting C look like nothing is being done again?	Comment noted.
Bob Sponeman	Perception is led by certain individuals. The District hasn't wasted money as they have recycled water and conservation programs. They should use C now, and use D later.	Comment noted.
Ralph Wagner	IPR should be a part of C. D is immune to climate change.	Issue is in terms of energy consumption and climate change.
Hugh Bialecki	Institutional independence in terms of energy would help with the climate change issue.	Comment noted.
Carol Banner	The community sees imported water as the only way and feels that they have to have a pipeline. IPR should be incorporated with the other plans.	Comment noted.
Hugh Bialecki	Alternative C pushes in direction of maintaining control, but it may not be the most effective option. It would need cooperation from the community. Combining IPR with Alternative C is a good idea.	Comment noted.
Ken Nelsen	Would the group be in favor of going with mandatory drought restrictions? (Many yeses from the PAC group).	The distinction between drought restrictions and regular conservation programs (as part of the IWRP alternatives) should be understood. These items were discussed as part of the conservation workshops conducted by the project team in the spring of 2007.
Wes McDaniel	The will of the group is to move forward.	Comment noted.
Bob Sponeman	The District should move forward with higher WUE.	Ordinance 58 is being rewritten. They are working towards higher and stronger conservation measures. These measures are policy changes and outside of the IWPR scope.
Keith Rubio	The District should avoid mandatory restrictions. The focus should be on finding short and long term solutions.	Comment noted.
Harry Sherman	Assuming they get the permits for IPR, can that water be put into the lake?	Yes.
Sean McCarthy	Permits would allow advanced treated water to augment the lake.	So the issue with implementation of IPR is not really regulatory but mainly is a matter of public acceptance.
Charles Proctor	Could state water be put directly into lake?	No, under current regulations, the quality would degrade the lake and is a permitting issue.
Wes McDaniel	The TM is an excellent piece of work. It is more exhaustive and creative than previous studies.	Comment noted.

As a result of the comments provided, the PAC requested that the project team create and analyze a new alternative to be called Alternative F. Alternative F would combine alternatives C (High Diversification and Alternative D (Indirect Potable Reuse). The project team indicated that they would perform that Alternative F analysis and present the results (along with alternatives B, C, and D) as part of the next District Board and Public Meeting.

## **7 Next Meeting**

There will be a LACSD Board meeting on September 25, 2007 at the Lake Arrowhead Resort at 7:00PM. Since this meeting will request that the Board select a preferred alternative from the recommended alternative and will also serve as a community meeting to provide an update on the IWRP program, Persephene encouraged the PAC to attend to answer any questions and provide further comment on the alternative selection.

The next and final PAC meeting is scheduled for November 30, 2007 from 9:30 am to 12:00 pm at the Lake Arrowhead Resort and is focused on providing feedback on the draft IWRP Report. The date is dependant upon whether the Board selects a preferred alternative at the September 25 meeting. If an alternative is not selected, then the project team will need to wait to complete the implementation plan as part of the IWRP Report and may not have the plan ready for the PAC to review in time for November 30. If the Board does select an alternative, the meeting will stand on November 30.

## **8 Other Items**

There were no other items discussed by the committee.

The meeting adjourned at 12:15PM.



# Project Advisory Committee Meeting No. 5 Summary

## Lake Arrowhead Community Services District Integrated Water Resources Program

**Prepared For:** IWRP Project Advisory Committee

**Date:** November 30, 2007

**Time:** 9:30 AM – 12:00 PM

**Location:** Lake Arrowhead Resort – Highway 189, Lake Arrowhead, CA

### Attendees

#### Project Advisory Committee (PAC)

Name	Agency/Group	Nov. 30
Carol Banner	Chamber of Commerce	✓
Dave Barrie	Sierra Club	✓
Hugh Bialecki / Bernard Voelkelt	Save Our Forest Association	
Cynthia Carley	Rim Association of Realtors	✓
Kathleen Hayes		✓
Veronica Magnuson	San Bernardino National Forest	
Sean McCarthy	California Dept. of Health Services	✓
Wes McDaniel	Lake Arrowhead Community Plan	✓
Stacey McKay	Arrowhead Woods Architectural Committee	✓
Paul McNamara		✓
John Padore	Mountain Association of Building Contractors	✓
Scott Peterson	Water Conservation Stakeholder Group	
Charles Proctor		✓
Jeff Rigney	Special Districts Division San Bernardino County	
Kathleen Rollings-McDonald	Local Agency Formation Committee; San Bernardino Co.	✓
Keith Rubio	Creekside Landscaping	
John Rutledge	Arrowhead Lake Association	
Harry Sherman		
Bob Sponeman		

Mike Stevens	Lake Arrowhead Country Club	
Randy Van Gelder	San Bernardino Valley Municipal Water District	
Ralph Wagner		✓
<b>Project Team</b>		
Ken Nelsen	District	✓
Ryan Gross	District	✓
Mark Veysey	District	✓
Marc Lippert	District	✓
Bob Talbot	US Bureau of Reclamation	
Greg Krzys	US Bureau of Reclamation	✓
Tom Chestnut	A&N Technical Services	
Dave Pikelney	A&N Technical Services	
Tom Harder	Geoscience Support Services	
Persephene St. Charles	RMC Water and Environment	✓
Rob Morrow	RMC Water and Environment	✓
Tom West	RMC Water and Environment	
<b>Other Attendees</b>		
Steven Farrell	Sierra Club	
David Ben-Hur		

## Meeting Summary

### 1 Greetings and Introduction

Persephene St. Charles, Project Manager for the RMC lead consultant team for the Integrated Water Resources Program (IRWP), provided introductions. The project advisory committee (PAC) then went around the table and introduced themselves. These groups are listed in the attendee roster above.

### 2 PAC Meeting No. 4 Summary

There were no comments from the PAC regarding the Meeting No. 4 Summary, which occurred on September 14, 2007.

### 3 District Board Meeting Report

Persephene provided an overview of the Board of Directors (Board) meeting on September 25, 2007 where program progress-to-date was reviewed and the recommended alternatives were presented. The Board selected a preferred alternative that combined two alternatives to create Alternative G. The preferred alternative includes full CLAWA expansion for imported, 15 new groundwater wells, high (maximum voluntary) conversation, small non-potable recycled water expansion, and indirect potable reuse via lake augmentation.

After the Board meeting, the project team developed a detailed description and analysis of the preferred alternative and a detailed implementation plan.

### 4 IWRP Report Overview

Persephene presented an outline of the Draft IWRP Report, which was distributed to the PAC via e-mail on November 16, 2007. A description of each chapter was provided as well as the associated PAC meeting when the information was presented:

1. Program Overview
2. Summary of Resource Options (PAC #3)
3. Baseline Conditions (PAC #4)
4. Alternative Development and Evaluation (PAC #4)
5. Preferred Alternative (PAC #5)
6. Implementation Plan (PAC #5)

The only really new information being presented to the PAC at this meeting was in chapters 5 and 6.

### 5 IWRP Report Chapter 5: Preferred Alternative

Persephene introduced the water resources options included in the preferred alternative. Points raised/discussed by the group during this presentation include the following:

Name	Comment / Question	Response (if applicable)
Bob Sponeyman	A more robust conservation plan that includes involuntary measures such as water use limits should be also considered by the District.	Comment noted. The District is looking at a water budget through the use of the new automated meters. Such measures would need to be highlighted in the Districts' Drought Management Plan and through ordinances and policies decided upon by the District Board.

Name	Comment / Question	Response (if applicable)
Charles Proctor	The demand forecast seems to high given that the District does not have enough water to serve all of its current customers, let alone any new customers.	Comment noted. The demand forecast was developed to document the current demand trend if no new WUE programs were implemented. By selecting the preferred alternative the WUE programs will help to decrease that demand. If the District adopts further conservation ordinances then even less supply would be necessary and the demand forecast could be altered.
Kathleen Hayes	The document should reflect that WUE will actually lower demand – even though it is considered as a supply yield for the purposes of the IWRP.	We will add text to the report that shows the impact to the demand forecast when the IWRP WUE programs are added – along with showing the WUE as a water savings yield.
Charles Proctor	Every customer should have a water budget.	Comment noted.
Wes McDaniel	Is 9% water losses an industry standard?	Yes. Less than 10% is generally considered acceptable
Paul McNamara	Was a new pipeline considered instead of CLAWA expansion?	Yes. The imported water options evaluated included a new pipeline from Lake Silverwood and a new pipeline parallel to the existing CLAWA pipeline. These options were not recommended because the cost was significantly higher than CLAWA expansion with little benefit to the District.
Carol Banner	Was capturing additional water prior to it flowing off the mountain addressed?	Capture and storage of additional surface water was considered by the program but is limited by the cost of seasonal storage and downstream water rights.
Paul McNamara	Using a conservative demand forecast may look like we are trying to justify the need for IPR and/or CLAWA expansion by creating a false picture of true demand.	Comment noted. At this stage it could be argued that this is the case however if we did not use a conservative demand number then the District runs the risk of not being able to meet the demand if it in fact does reach that level. Additional conservation measures implemented by the District will reduce the need for imported water purchases and should therefore be evaluated annually.
Wes McDaniel	Will recycled water still be used at the golf course once IPR starts?	Yes. The golf course will continue to receive recycled water. The recycled water delivered to the golf course will be advanced treated once IPR starts operations. All recycled water not used for non-potable uses, would be available for IPR. We will edit the report to make this clear.
Wes McDaniel	Was IPR at Papoose Lake considered?	Yes. The cost of conveyance and extraction from Papoose Lake was considered as part of the Imported Water TM but not selected.
Wes McDaniel	Does this alternative construct more water supply capacity than needed to meet demands?	Yes. The extra capacity provides added reliability and flexibility for the District.

## 6 IWRP Report Chapter 6: Implementation Plan

Persephene reviewed preferred alternative implementation plan, which details the steps to implement each of the water resources options included in the preferred alternative. Points raised/discussed by the group during this presentation include the following:

Name	Comment	Response (if applicable)
Paul McNamara	What is the status of CLAWA expansion planning?	CLAWA is expected to submit an initial report in February 2008
Kathleen Hayes	Was the uncertainty of global warming addressed in the implementation plan?	Yes within Section 6.8.

## 7 Program Wrap-Up

There will be a Board and public meeting on December 11, 2007 at the Lake Arrowhead Resort at 7:00 pm to present the Final IWRP Report updated to reflect PAC comments.

## 8 Other Items

There were no other items discussed by the committee.

The meeting adjourned at 12:15 pm.

